

CASE FILE LIST

Case: HS2-011_AP1-015.

Title: HS2-011_AP1-015 Lach Dennis Parish Council - Promoter.

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CASE FILE LIST

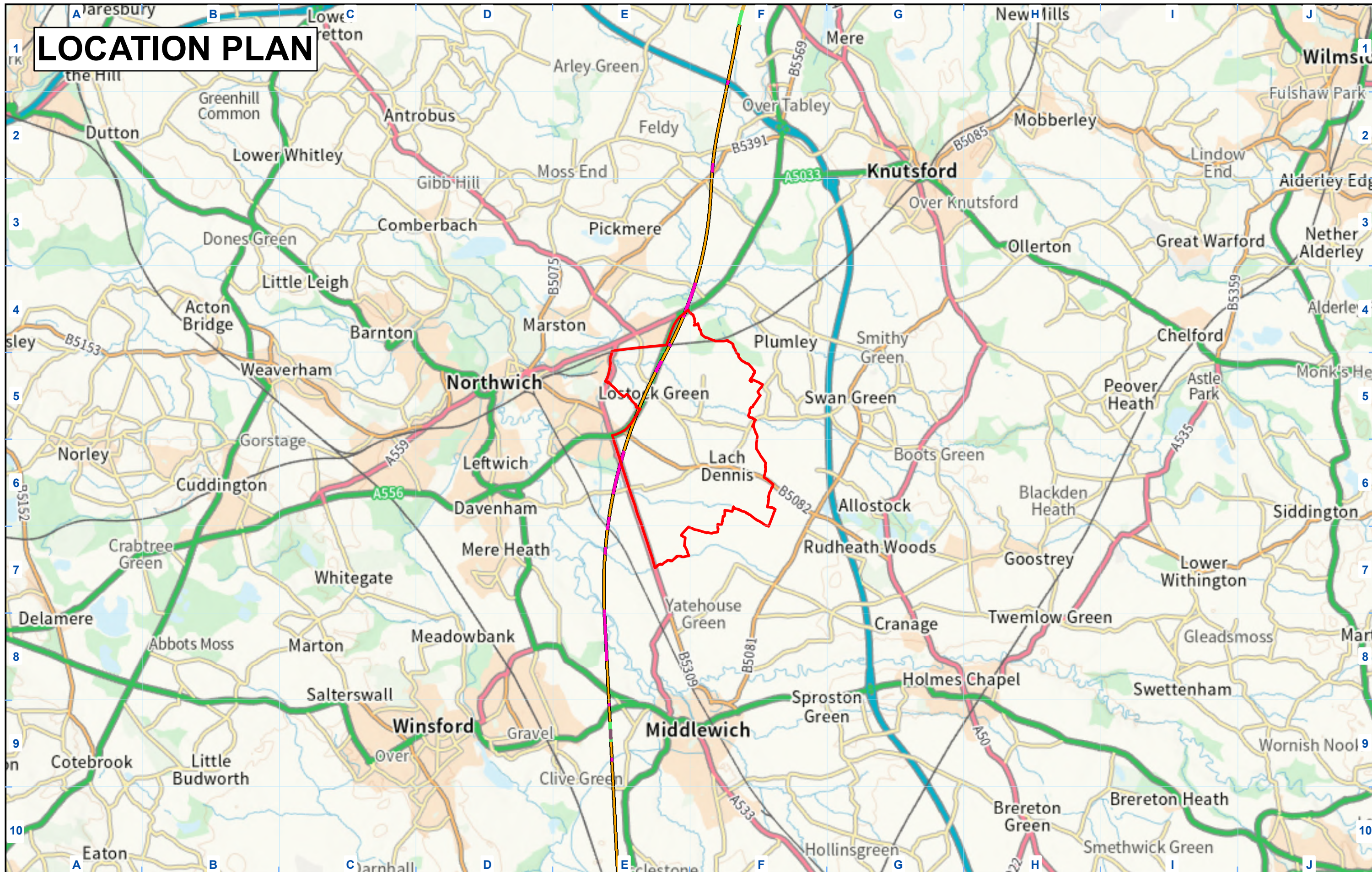
Case: HS2-011_AP1-015.

Title: HS2-011_AP1-015 Lach Dennis Parish Council - Promoter.

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LOCATION PLAN



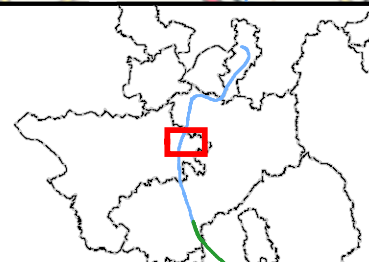
P149

Legend

Phase 2b Western Leg Bill alignment February 2022

- Embankment
- Viaduct

Indicative extent of petitioner(s) land interests



High Speed Two
Petitioner Location Plan
Reference Drawing

Petitioner
Lach Dennis Parish Council

Petition number
P2B-HS2-011

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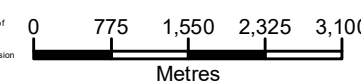
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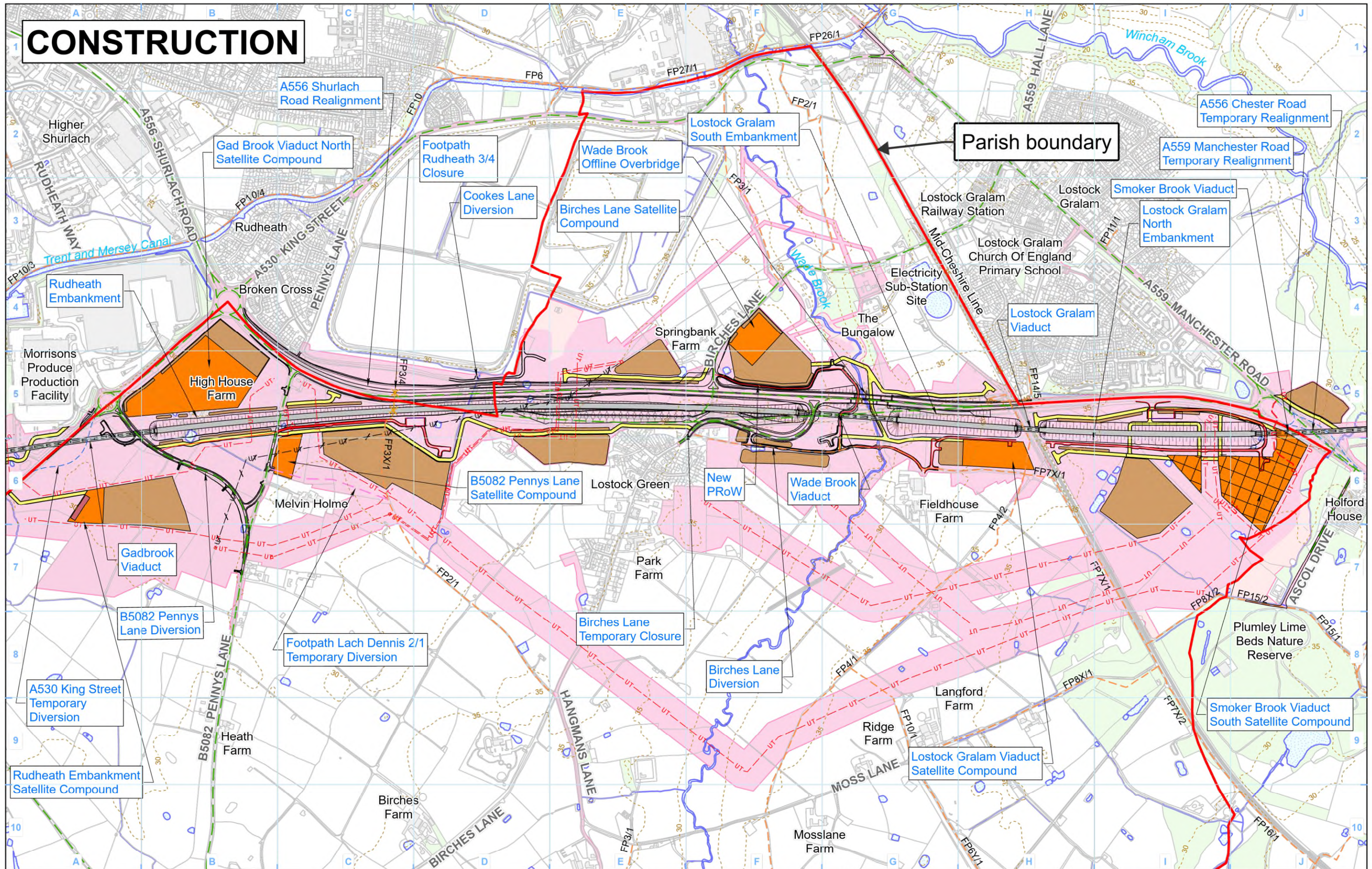
Metres
Date: 17/08/22

LOCATION PLAN

The map displays the Northwich area, including the River Dane and surrounding roads. Key locations marked include Northwich, Lostock Gralam, Plumley, Rudheath, and Lach Dennis. A red line outlines a specific area of interest, likely the site of the Northwich Gasworks. The map includes a grid with letters A-J and numbers 1-10.

Date: 17/08/22

CONSTRUCTION



Legend

Indicative extents of Petitioner(s) land interests	Land potentially required for mitigation planting	Existing public right of way	Engineering earthworks	Existing woodland
Satellite construction compound	Rail alignment formation	Public right of way closure	Temporary highway diversion / realignment	Existing buildings
Railway systems compounds	Haul routes	Temporary public right of way diversion / realignment	Major utility works	Existing watercourse
Temporary material stockpile	Temporary workers accommodation	New, diverted or realigned public right of way	Major utility works - Removed	HS2 access
Land potentially required during construction	Construction traffic route	Landscape earthworks	Existing inland water	Rail alignment
				5m contours

Petitioner
Lach Dennis Parish Council

Petition number
HS2-011

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Doc Number: 2PT24-MWJ-PT-MAP-M000-001151-HS2-011

Date: 13/10/2022

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0 100 200 300 400 Metres

[illegible]

Parish boundary

A556 Shurlach Road
Auto-transformer Station

Wade Brook
Offline Overbridge

Lostock Gralam
South Embankment

Lostock Gralam
North Embankment



Plumley Lime
Beds Nature
Reserve

Lach Dennis Parish Council

HS2-011

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Doc Number:2PT24-MWJ-PT-MAP-M000-001161-HS2-011

Date: 13/10/2022

P152

Legend

-  Railway systems site
-  Ecological mitigation pond (Indicative only)
-  Balancing pond

-  Replacement floodplain storage area
-  Grassland habitat creation
-  Wetland habitat creation
-  Woodland habitat creation
-  Landscape mitigation planting (scrub / woodland)

-  Hedgerow
-  New ditches
-  Watercourse diversion
-  Engineering earthworks
-  Landscape earthworks
-  Rail alignment formation

-  Existing public right of way
-  New, diverted or realigned public right of way
-  Public right of way closure
-  Existing inland water
-  Existing woodland

-  Existing buildings
-  Existing watercourse
-  HS2 access
-  Noise fence barrier
-  Rail alignment
- 5m contours

Petitioner	
------------	--

Petition number

Mrs Lyndsey Sandison
Lach Dennis Parish Council
6 Houghton Close
Northwich
Cheshire
CW9 8NW

Sent by email to: clerk@lachdennisandlostockgreen.co.uk

6 April 2023

Dear Mrs Sandison,

HIGH SPEED RAIL (CREWE – MANCHESTER) BILL – HOUSE OF COMMONS SELECT COMMITTEE: PETITION HS2- P2B - 011 AND AP1-015– LACH DENNIS PARISH COUNCIL

I am writing to you in my capacity as Director of Hybrid Bill Delivery at HS2 Ltd, which is acting on behalf of the Promoter of the High Speed Rail (Crewe-Manchester) Bill (the Bill) currently before Parliament.

I understand that you have concerns about the impact of HS2 Phase 2b (known as the Proposed Scheme) and have submitted a petition on that basis against the Bill and first Additional Provision to the Bill in the House of Commons.

I understand my colleagues met Parish Council representatives on 2 December 2022 and 4 April 2023 to discuss your petition. Promoter's Response Documents were sent to you setting out our position in relation to the issues you raised in your petition against the Bill, and the first Additional Provision to the Bill, on 6 March 2023.

I understand that it is your intention to raise the following petition issues before the Select Committee and our final position is set out below.

Community isolation and well-being, roads and public rights of way

The Promoter's response is set out on pages 4 to 19 of the Promoter's Response Document that was sent to you in relation to your petition against the Bill on 6 March 2023. The

Community Engagement Framework, as required by the Code of Construction Practice, will set out how local people will be informed in advance of works taking place in their area and regular meetings will be held locally, including representatives of the local community, where construction issues and the forthcoming programme of works will be discussed.

With regard to public rights of way, I understand that at the 2 December 2022 meeting, the Parish Council helpfully provided my HS2 colleagues with a map of the Proposed Scheme that was annotated with a suggested walking route from Lostock Green village towards the A556 Shurlach Road. I also understand that a number of potential walking routes were discussed in more detail at the 4 April 2023 meeting.

One of these routes discussed could start at the western end of Village Close in Lostock Green, and then run along the eastern side of the proposed railway as far as a connection with the proposed diversion of footpath Lach Dennis 3X/1. This potential walking route would then cross the railway under the Gadbrook viaduct via the proposed Penny's Lane diversion. Please could you let us know, by return of email or letter, if the Parish Council would like the Promoter to discuss this opportunity further with Cheshire West and Chester Council.

The Promoter is working with the local highway authorities whose administrative areas would be affected by the Proposed Scheme, including Cheshire West and Chester and Cheshire East, regarding its impacts on the local highway network as raised in their respective petitions against the Bill and AP1 revised scheme.

Impact on industry, including future exploitation of salt reserves and gas storage

I understand this matter was discussed in the 4 April meeting, and that HS2 representatives explained that the Promoter is actively engaging with businesses and local stakeholders regarding impacts of the Proposed Scheme such as, but not limited to, the Morrisons produce processing facility at Gadbrook. The Promoter is also engaging with relevant landowners and tenant farmers in respect of managing any flood risks on their land – this includes commercial stakeholders such as Inovyn Chlorvinyls Ltd.

Construction traffic movements and diversions

I am advised that this matter was discussed at the meeting on 2 December 2022 between the Parish Council and HS2 representatives, where my colleagues explained our position that was then later set out in pages 7 to 19 of the Promoter's Response Document in relation to your petition against the Bill, and pages 12 to 14 of the Promoter's Response Document in relation to your petition against Additional Provision 1.

The proposed realignment of the A556 Shurlach Road was also discussed in detail at the 4 April 2023 meeting, where I understand that HS2 representatives explained that two lanes of traffic would continue to be available in both directions, excluding a period of 40 days during the northbound highway tie in works, and a further 40 days for the southbound highway tie in works. Within these 40-day periods there would be weekend or overnight closures and single lane working in off-peak periods.

My colleagues also shared the Traffic and Transport Standard Exhibit Pack for MA01 to MA03 and Off-Route Works with the Parish Council, which can be found at [https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/1140992/Section_H - Traffic and Transport Standard Pack.pdf](https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/1140992/Section_H_-_Traffic_and_Transport_Standard_Pack.pdf)

Impact of construction, including land usage and visual/noise impacts

The Promoter's response remains as set out in pages 43 to 50 of the Promoter's Response Document regarding your petition against the Bill.

I understand that noise during operation of the Proposed Scheme was discussed at the meeting on 4 April, and that HS2 representatives outlined the noise policy aims as set out in HS2 Phase 2b Western Leg Information Paper E9: [https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/1088294/E9 Control of airborne noise from altered roads and the operational railway v2.pdf](https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/1088294/E9_Control_of_airborne_noise_from_altered_roads_and_the_operational_railway_v2.pdf).

Ground conditions

As you will be aware, further to the Promoter's response on ground conditions as set out in pages 51 to 56 of the Promoter's Response Document, a report was published on 3 March 2023 which provides a review of the ground conditions, the associated risks, and the mitigation measures for the Crewe-Manchester Proposed Scheme. This report titled "Crewe to Manchester - Understanding the Ground Risk across the Cheshire Plain" can be viewed from the following link:

[https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/1140192/Understanding the Ground Risk across the Cheshire Plain.pdf](https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/1140192/Understanding_the_Ground_Risk_across_the_Cheshire_Plain.pdf)

I understand that the Parish Council were also contacted by email on 29 March 2023 to identify if you have any outstanding issues concerning ground conditions in light of the review set out in the published report and that discussions are ongoing. Please could you let us know, by return of email or letter, the Parish Council's position on the issues raised in your petition in respect of geology on the basis of the report published in March 2023.

I hope that the information set out above and through our earlier correspondence and discussion with you gives the Parish Council the reassurance you were seeking in response to the issues raised in your petition.

For any further queries please don't hesitate to contact Kirsty Clarke, Petition Manager, on 07826 886543 or kirsty.clarke@hs2.org.uk.

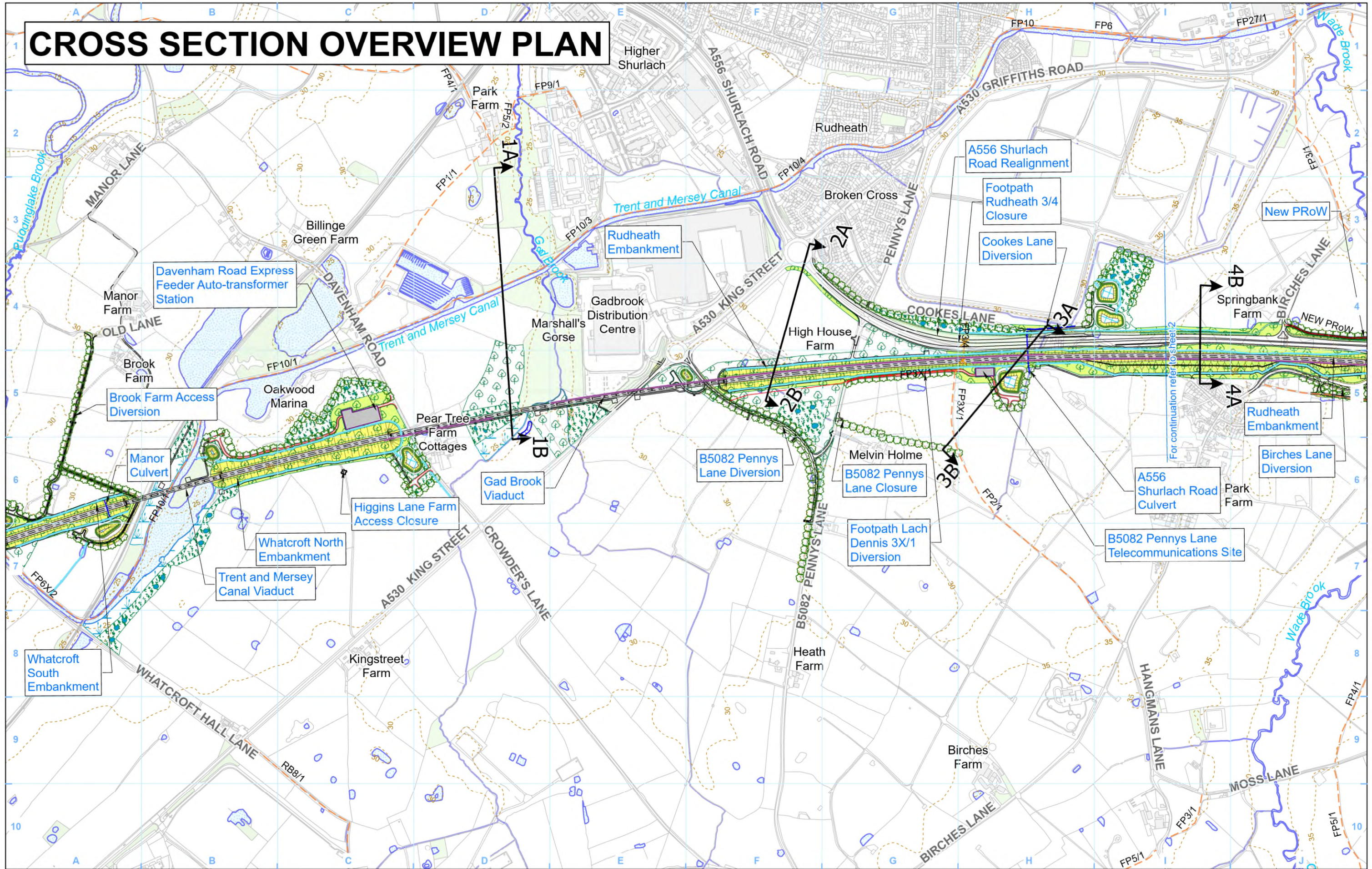
Yours sincerely

A handwritten signature in black ink, appearing to read 'Lucy Lagerweij', with a stylized, cursive script.

Lucy Lagerweij

Director, Hybrid Bill Delivery
High Speed Two (HS2) Limited

CROSS SECTION OVERVIEW PLAN



Legend

- Railway systems site
- Ecological mitigation pond (Indicative only)
- Balancing pond
- Replacement floodplain storage area
- Grassland habitat creation
- Wetland habitat creation
- Woodland habitat creation
- Landscape mitigation planting (scrub / woodland)
- Hedgerow
- New ditches
- Watercourse diversion
- Engineering earthworks
- Landscape earthworks
- Rail alignment formation
- Existing public right of way
- New, diverted or realigned public right of way
- Public right of way closure
- Existing buildings
- Existing woodland
- Existing inland water
- Existing watercourse
- HS2 access
- Noise fence barrier
- Rail alignment
- 5m contours

P154(1)

Petitioner

Lostock Gralam Parish Council/
Lach Dennis Parish Council

Petition number

HS2-010 / HS2-011

For sections refer to
2PT24-MWJ-PT-DSE-M000-001131-HS2-011 to
2PT24-MWJ-PT-DSE-M000-001134-HS2-011

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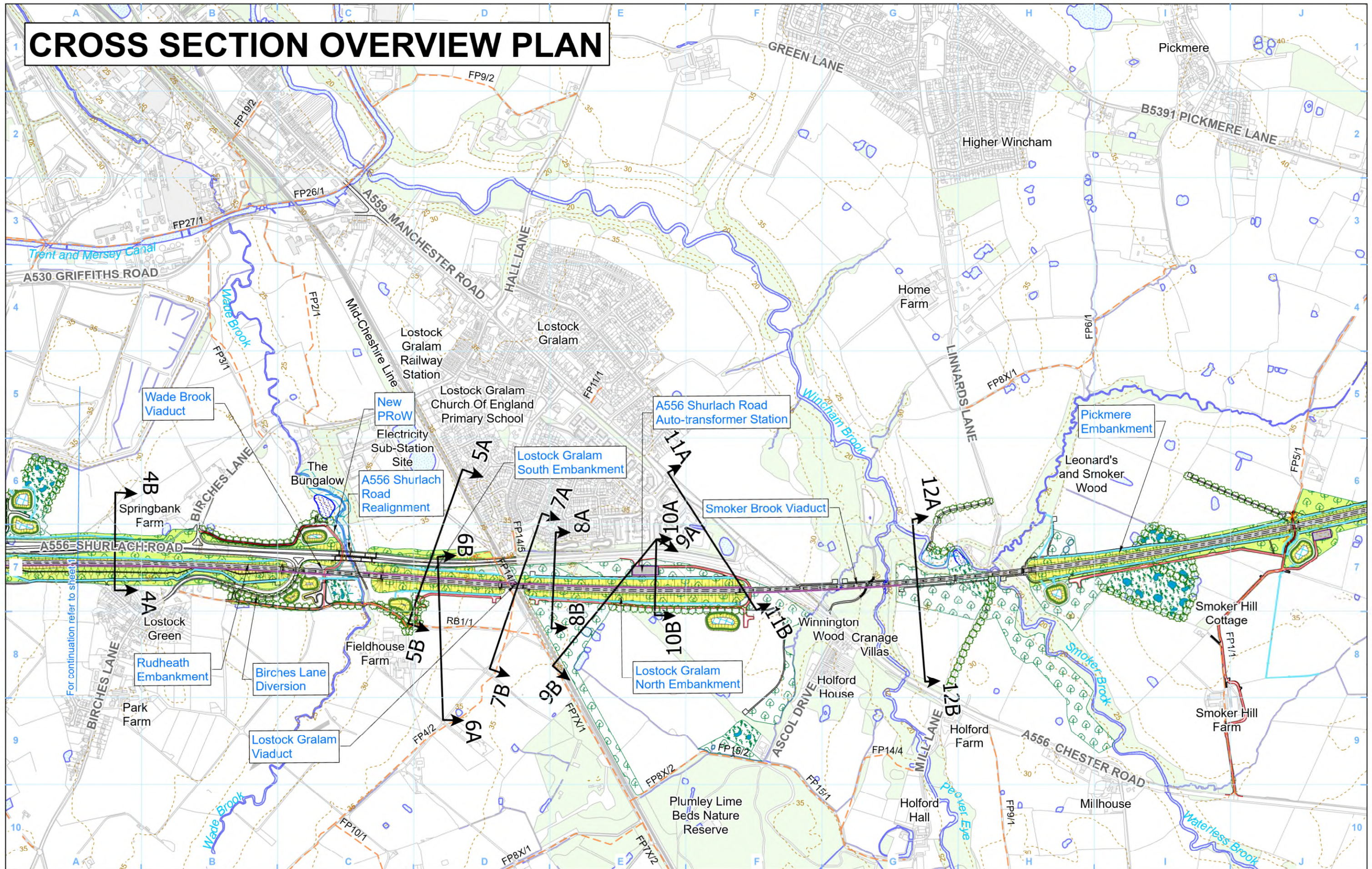
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CROSS SECTION OVERVIEW PLAN



Legend

Railway systems site	Grassland habitat creation	New ditches	New, diverted or realigned public right of way	Existing watercourse
Ecological mitigation pond (indicative only)	Wetland habitat creation	Watercourse diversion	Public right of way closure	HS2 access
Balancing pond	Woodland habitat creation	Engineering earthworks	Existing buildings	Noise fence barrier
Replacement floodplain storage area	Landscape mitigation planting (scrub / woodland)	Landscape earthworks	Existing woodland	Rail alignment
	Hedgerow	Rail alignment formation	Existing inland water	5m contours

Petitioner
**Lostock Gralam Parish Council/
Lach Dennis Parish Council**

Petition number
HS2-010 / HS2-011

For sections refer to
2PT24-MWJ-PT-DSE-M000-001134-HS2-011 to
2PT24-MWJ-PT-DSE-M000-001142-HS2-011

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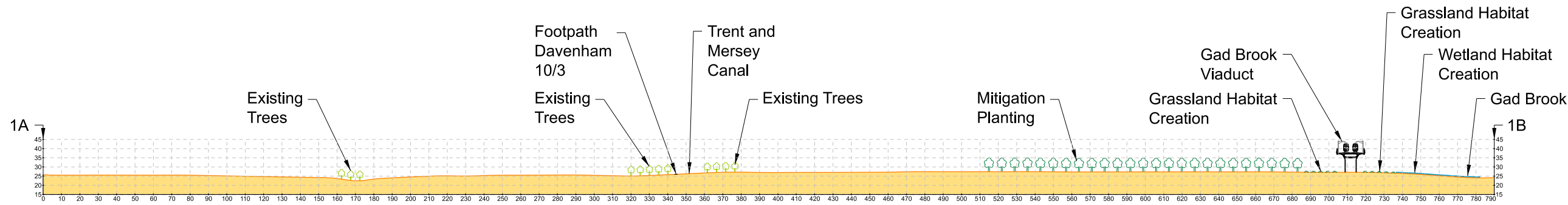
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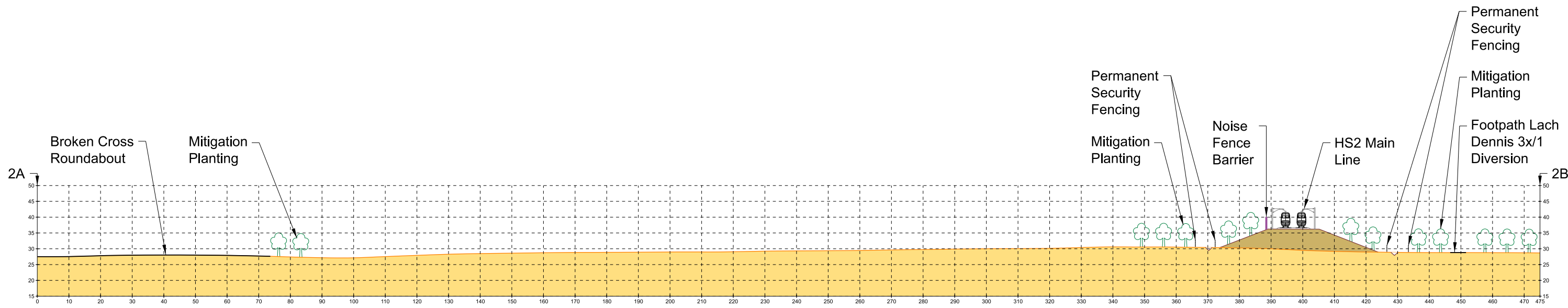
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CROSS SECTION/S



SECTION 1A-1B
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SECTION 2A-2B
SCALE 1:1250
For Plan refer to 2PT24-MWJ-PT-MAP-M000-001132-HS2-011-010

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P155(1)

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Legends/Notes:

Existing ground

Proposed HS2 earthworks

Existing surface

Designed surface level

Mitigation Planting (Assumed Height at Year 15 of Operation)

Noise fence barrier

Existing Trees

Proposed Grassland

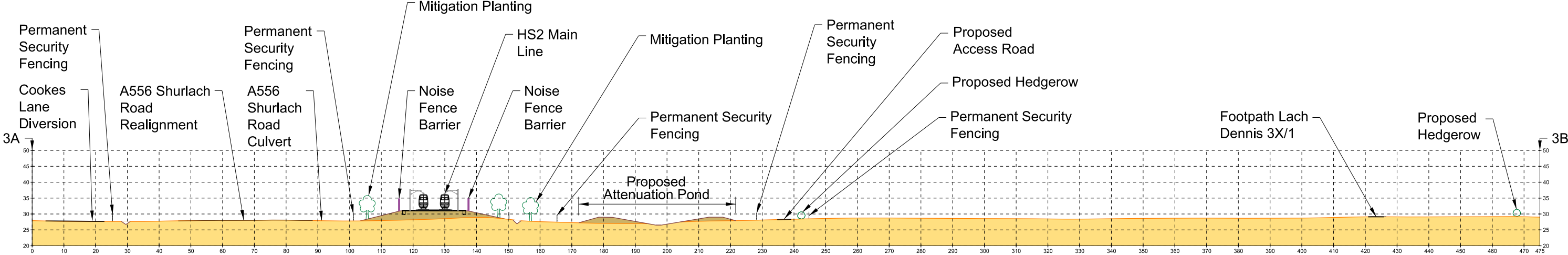
Wetland Habitat Creation

HS2

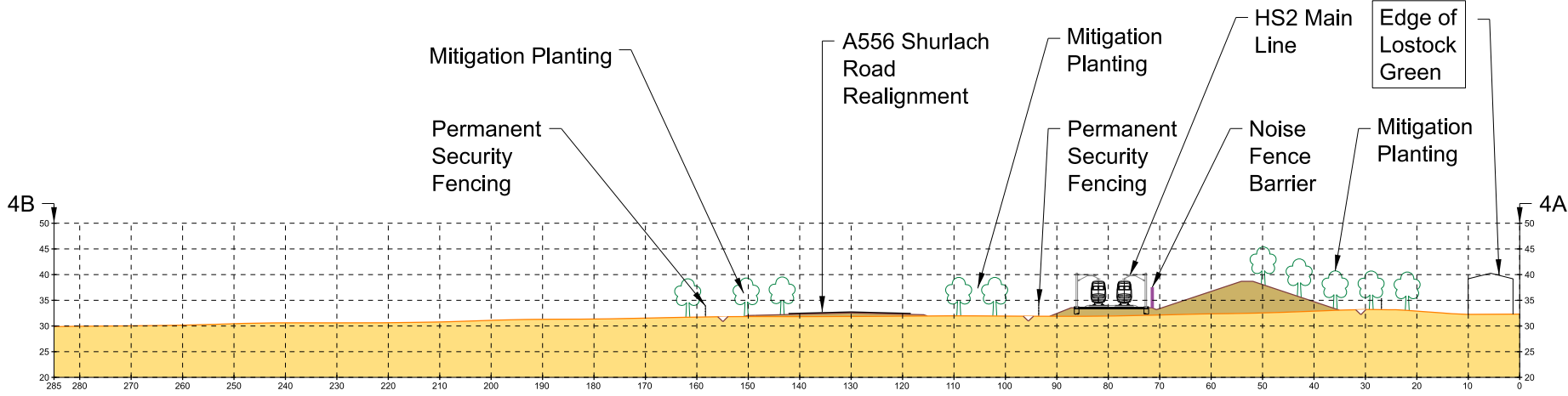
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Zone	Manchester Leg Whole		Project/Contract				
Design Stage	Designs for Petition		2DE01 Hybrid Bill Additional Provision 1 AP1				
Drawing Title		Discipline/Function					
		Petitions					
		Creator/Originator					
Lach Dennis & Lostock Grlam Parish Councils		MW JV (Mott MacDonald and WSP Joint Venture)					
HS2-010/HS2-011		Date	2022/08/12	Scale	AS SHOWN	Size	A3
Sh.01 (SECTION 1A-1B & 2A-2B)		Drawing No.			Rev.		
		2PT24-MWJ-PT-DSE-M000-001131-HS2-011			P05		

CROSS SECTION/S



SECTION 3A-3B
SCALE 1:1250
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SECTION 4A-4B
SCALE 1:1250
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P155(2)

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Legends/Notes:

Existing ground

Proposed HS2 earthworks

Existing surface

Designed surface level

Mitigation Planting (Assumed Height at Year 15 of Operation)

Noise fence barrier

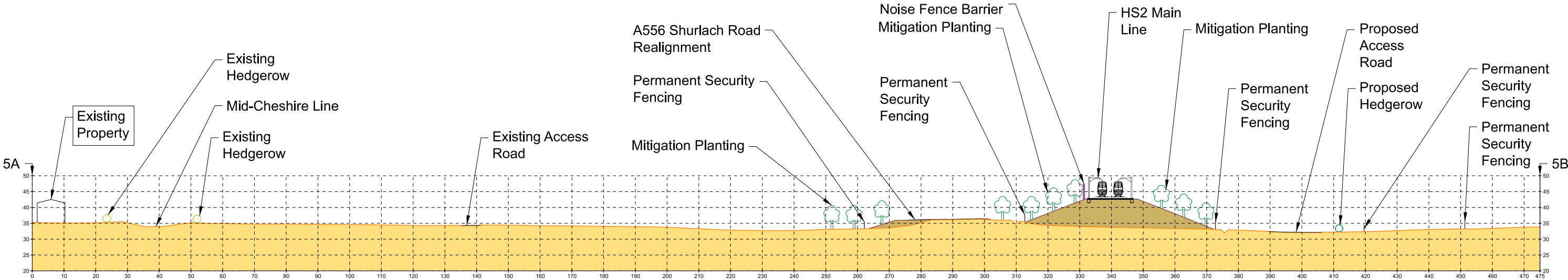
Proposed Hedgerow Planting

HS2

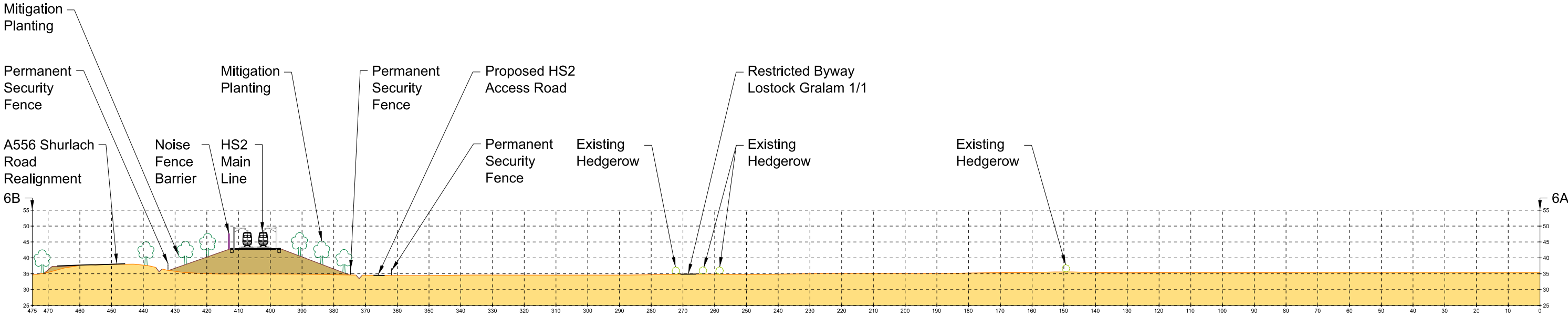
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Zone	Manchester Leg Whole			Project/Contract	
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Design Stage	Designs for Petition			Discipline/Function	
				Petitions	
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				Rev.	P04

CROSS SECTION/S



SECTION 5A-5B
SCALE 1:1250
For Plan refer to 2PT24-MWJ-PT-MAP-M000-001132-HS2-011-010



SECTION 6A-6B
SCALE 1:1250
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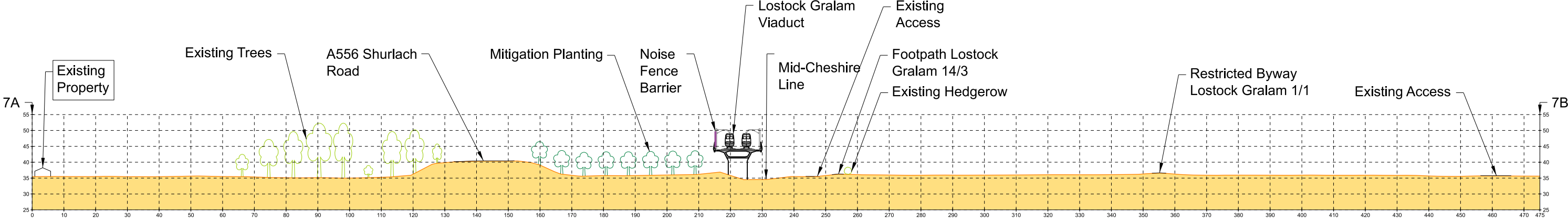
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- Existing ground
 - Proposed HS2 earthworks
 - Existing surface
 - Designed surface level
 - Mitigation Planting (Assumed Height at Year 15 of Operation)
 - Noise fence barrier
 - Proposed Hedgerow Planting
 - Existing Hedgerow

HS2

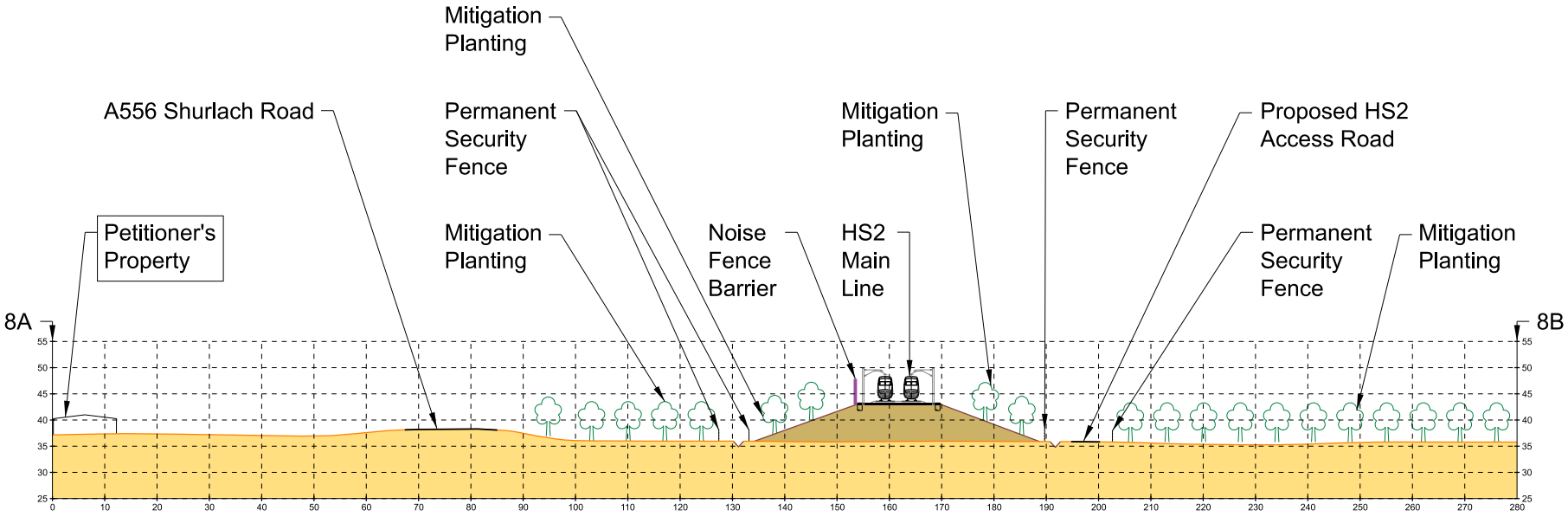
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Zone	Manchester Leg Whole		Project/Contract		
			2DE01 Hybrid Bill Additional Provision 1 AP1		
Design Stage	Designs for Petition		Discipline/Function		
			Petitions		
Drawing Title	Lach Dennis & Lostock Gralam Parish Councils		Creator/Originator		
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CROSS SECTION/S



SECTION 7A-7B
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For Plan refer to 2PT24-MWJ-PT-MAP-M000-001133-HS2-011-010



SECTION 8A-8B
SCALE 1:1250
For Plan refer to 2PT24-MWJ-PT-MAP-M000-001133-HS2-011-010

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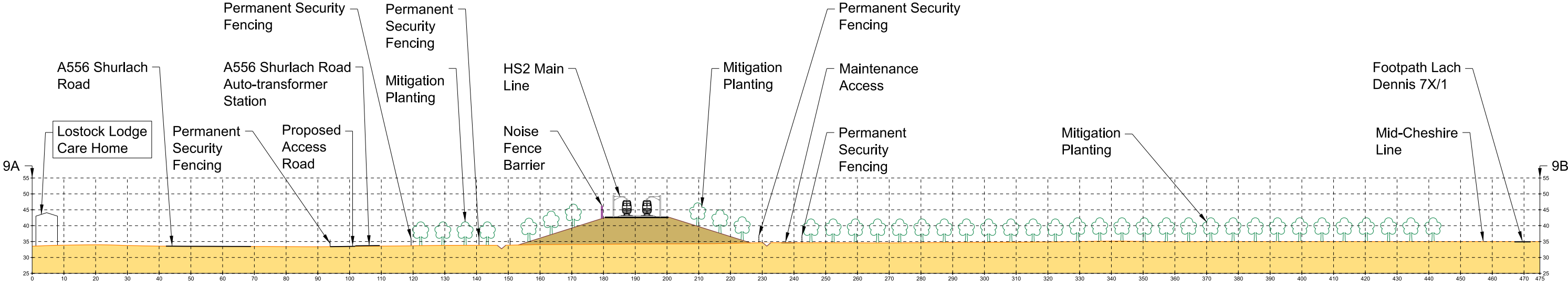
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 - Existing surface
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 - Mitigation Planting (Assumed Height at Year 15 of Operation)
 - Noise fence barrier
 - Existing Trees
 - Proposed Hedgerow Planting
 - Existing Hedgerow

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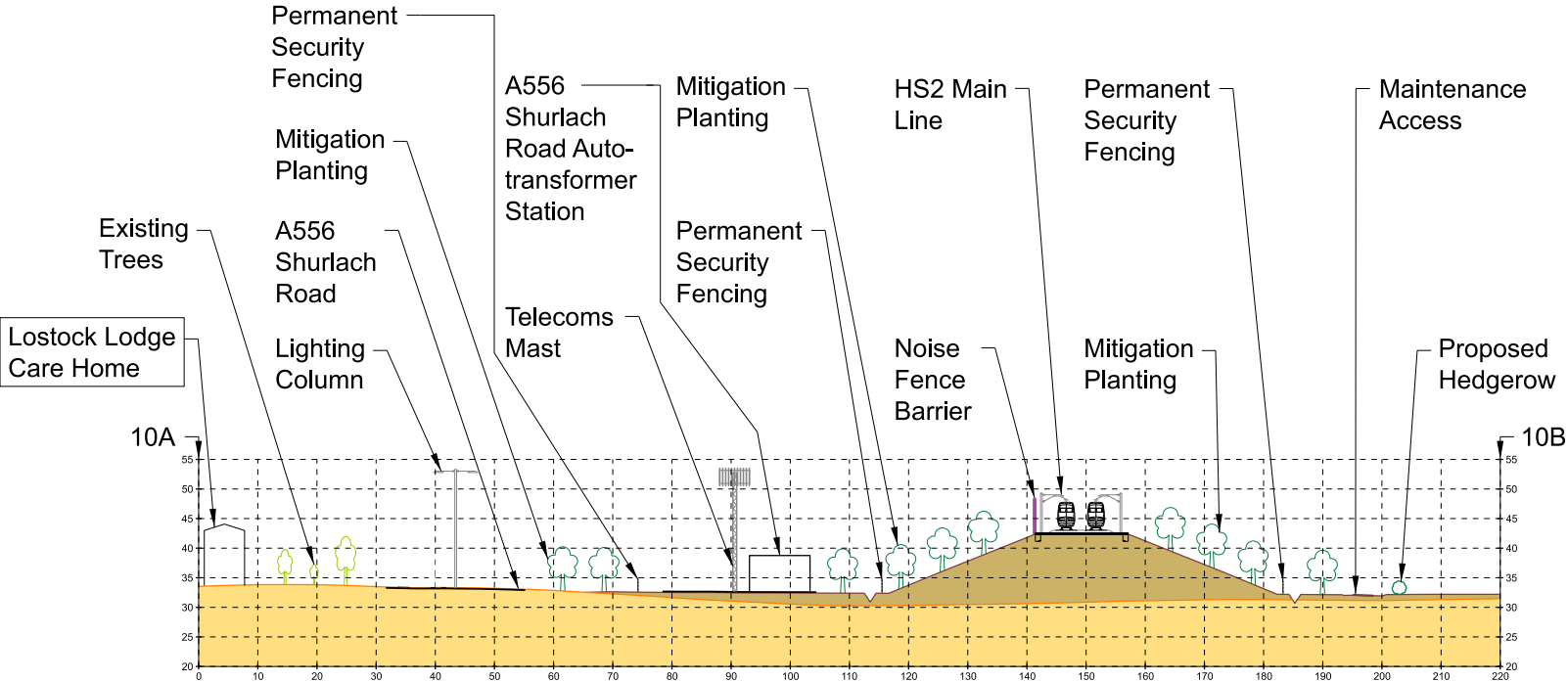
CROSS SECTION/S



SECTION 9A-9B

SCALE 1:1250

For Plan refer to 2PT24-MWJ-PT-MAP-M000-001133-HS2-011-010



SECTION 10A-10B

SCALE 1:1250

For Plan refer to 2PT24-MWJ-PT-MAP-M000-001133-HS2-011-010

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P155(5)

Scale with caution as distortion can occur.

Legends/Notes:

Existing ground

Proposed HS2 earthworks

Existing surface

Designed surface level

Mitigation planting (Assumed Height at Year 15 of Operation)

Noise fence barrier

Existing Trees

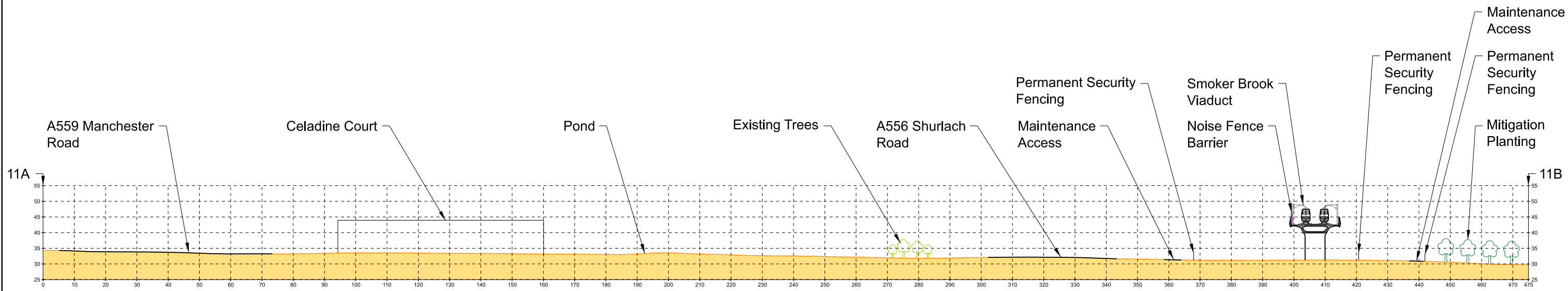
Proposed Hedgerow Planting

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Zone	Manchester Leg Whole			Project/Contract	
Design Stage	2DE01 Hybrid Bill Additional Provision 1 AP1			Discipline/Function	
Drawing Title	Designs for Petition			Petitions	
Lach Dennis & Lostock Gralam Parish Councils		Creator/Originator		MW JV (Mott MacDonald and WSP Joint Venture)	
HS2-010/HS2-011		Date	2022/10/11	Scale	AS SHOWN
Sh.05 (SECTION 9A-9B & 10A-10B)		Size	A3		
Drawing No.		2PT24-MWJ-PT-DSE-M000-001135-HS2-011			Rev.
					P04

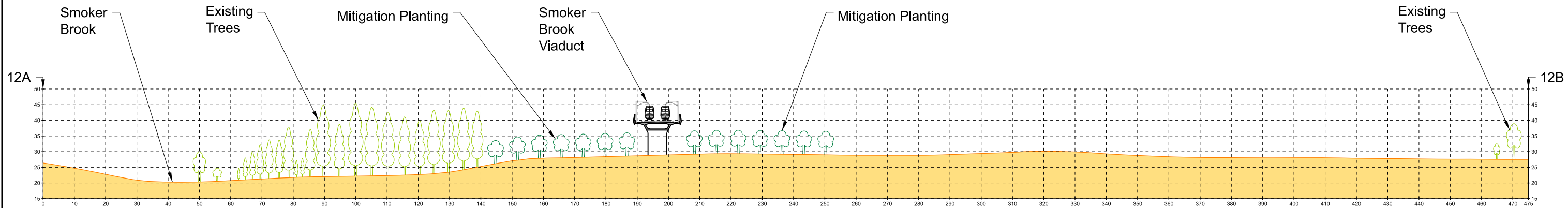
CROSS SECTION/S



SECTION 11A-11B

SCALE 1:1250

For Plan refer to 2PT24-MWJ-PT-MAP-M000-001133-HS2-011-010



SECTION 12A-12B

SCALE 1:1250

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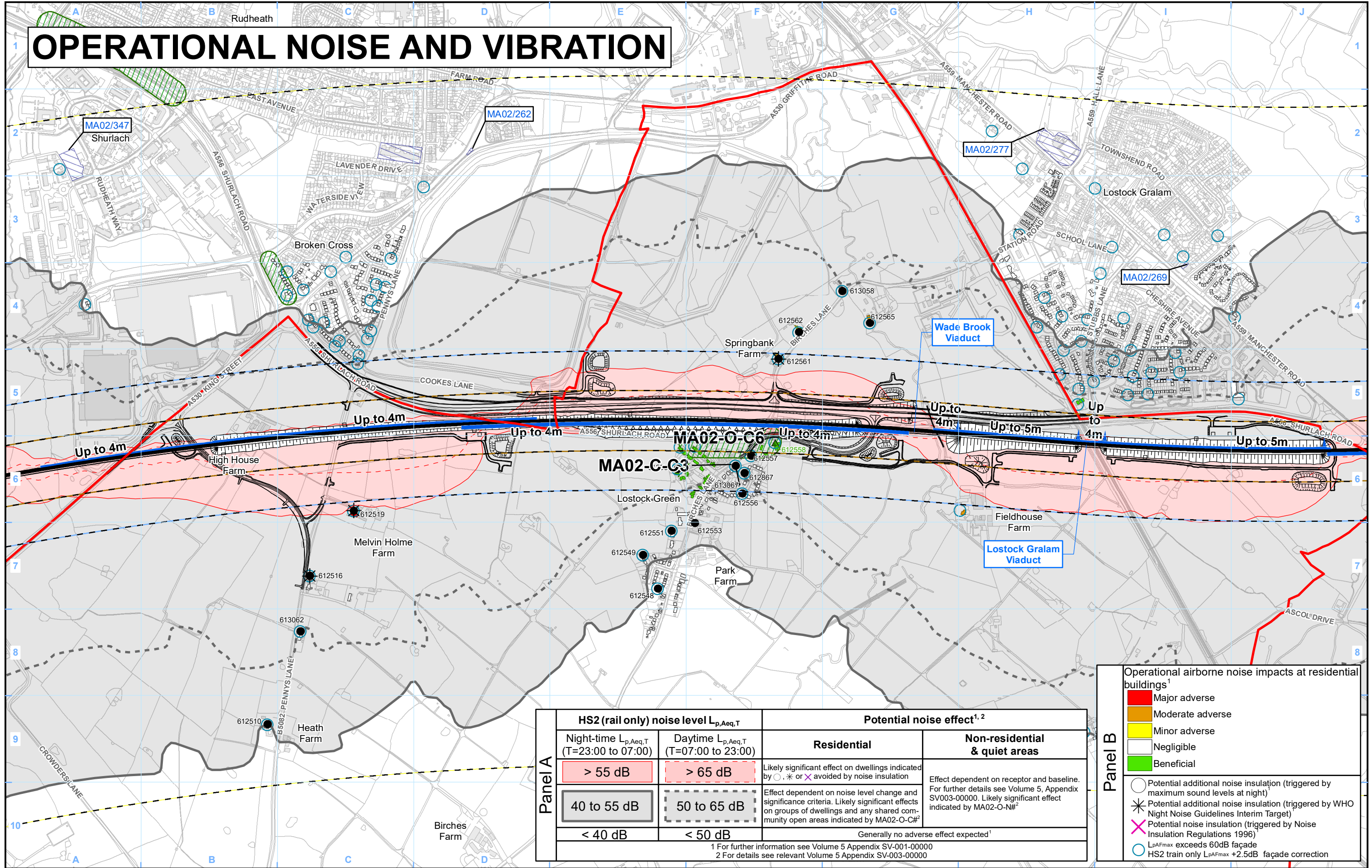
- Legends/Notes:
- Existing ground
 - Proposed HS2 earthworks
 - Existing surface
 - Designed surface level
 - Mitigation Planting (Assumed Height at Year 15 of Operation)
 - Noise fence barrier
 - Existing Trees

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Zone		Manchester Leg Whole		Project/Contract	
				2DE01 Hybrid Bill Additional Provision 1 AP1	
Design Stage		Designs for Petition		Discipline/Function	
				Petitions	
Drawing Title		Creator/Originator			
		MW JV (Mott MacDonald and WSP Joint Venture)			
		Date	Scale	Size	
Lach Dennis & Lostock Gralam Parish Councils		2022/10/11	AS SHOWN	A3	
HS2-010/HS2-011					
Sh.06 (SECTION 11A-11B & 12A-12B)		Drawing No.			Rev.
		2PT24-MWJ-PT-DSE-M000-001136-HS2-011			P05

OPERATIONAL NOISE AND VIBRATION



Panel A	HS2 (rail only) noise level $L_{p,Aeq,T}$		Potential noise effect ^{1,2}	
	Night-time $L_{p,Aeq,T}$ (T=23:00 to 07:00)	Daytime $L_{p,Aeq,T}$ (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 SV003-00000. Likely significant effect indicated by MA02-O-N#
	40 to 55 dB	50 to 65 dB	Effect dependent on noise level change and significance criteria. Likely significant effects on groups of dwellings and any shared community open areas indicated by MA02-O-C#	
	< 40 dB	< 50 dB	Generally no adverse effect expected ¹	

1 For further information see Volume 5 Appendix SV-001-00000
2 For details see relevant Volume 5 Appendix SV-003-00000

Panel B

Operational airborne noise impacts at residential buildings¹

- Major adverse
- Moderate adverse
- Minor adverse
- Negligible
- Beneficial

○ Potential additional noise insulation (triggered by maximum sound levels at night)
* Potential additional noise insulation (triggered by WHO Night Noise Guidelines Interim Target)
✕ Potential noise insulation (triggered by Noise Insulation Regulations 1996)
○ L_{pAmax} exceeds 60dB façade
○ HS2 train only $L_{pAmax} +2.5dB$ façade correction

Legend - General features

- Route in bored tunnel
- Route on surface
- Depot, station, headhouse or portal building
- Indicative extents of Petitioner(s) land interests

P156(1)

Legend - Noise related features

Envisaged mitigation to avoid / reduce significant noise effects:

- Landscaping and/or fence barriers (labelled with total noise barrier height above rail)
- Engineering e.g. cuttings (green tunnels separately marked)
- Envisaged features further reducing noise effects:
 - Other environmental e.g. landscaping
 - Engineering e.g. cuttings

Noise Important Areas defined in national noise action plans (Defra 2014)

- Committed developments - SV Only
- Airborne noise study area
- Ground-borne noise or vibration impact at residential buildings

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

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

Map Number: SV-02

Map Name: Operational Airborne Noise and Vibration Impacts and Likely Significant Effects
Petition HS2-011
Lach Dennis Parish Council

Community Area MA02:
Wimbolsley to Lostock Gralam

HS2

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Scale at A3: 1:10,000

0 100 200 300 400 Metres

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Doc Number: 2PT24-MWJ-PT-MAP-M000-001121-HS2-011-P01 Date: 10/02/23

Noise Levels

HS2

Appendix 7: Detailed Noise Table

Table 1: Baseline sound levels

Assessment location		Measurement location	Baseline sound levels (dB)							Data source coding
Ref	Area represented		For construction sound assessment (2025)			For operational sound assessment (2038)				
			Daytime L _{pAeq}	Evening / weekend L _{pAeq}	Night-time L _{pAeq}	Daytime L _{pAeq,16hr}	Night-time L _{pAeq,8hr}	Arithmetic average L _{pAFmax,5min}	Highest night-time L _{pAFmax,5min}	
612510	Ashbrook House, Penny's Lane, Lach Dennis		56	51	49	55	48	53	58	3,A,i,b
612516	Penny's Lane, Lach Dennis		63	59	56	62	56	61	66	3,A,i,b
612519	Melvin Holme Farm, Penny's Lane, Lach Dennis		52	47	45	51	45	50	55	3,A,i,b
612548	Birches Lane, Lostock Green		45	40	38	46	40	45	50	3,A,i,a
612549	Birch Grove, Lostock Green		50	45	42	49	43	48	53	3,A,i,a
612551	Birches Lane, Lostock Green		51	46	44	52	45	50	55	3,A,i,a
612553	Lostock Green Methodist Church, Birches Lane, Lostock Green		55	50	49	60	53	58	63	3,A,i,a
612554	Cinder Lane, Lostock Green		59	54	51	58	52	57	62	3,A,i,b
612556	Greenside Drive, Lostock Green		50	45	43	50	44	49	54	3,A,i,b
612557	Birches Lane, Lostock Green		65	60	57	65	59	64	69	3,A,i,b
612558	Birches Lane, Lostock Green		74	69	67	74	67	72	77	3,A,i,b
612561	Birches Lane, Lostock Green		63	59	56	62	56	61	66	3,A,i,b
612562	Birches Lane, Lostock Green		63	59	56	62	56	61	66	3,A,i,b
612565	Birches Lane, Lostock Green		50	46	43	50	43	48	59	3,A,i,b
612867	Greenside Drive, Lostock Green		57	52	50	57	50	55	60	3,A,i,b
613058	Birches Lane, Lostock Green		66	61	59	65	58	63	68	3,A,i,b
613062	Penny's Lane, Northwich		66	61	59	65	58	63	68	3,A,i,b
613067	Birches Lane, Lostock Green		61	56	54	64	57	62	67	3,A,i,b

Noise Levels

HS2

Table 2: Assessment of construction noise at residential receptors

Assessment location		Impact criteria				Significance criteria									Significant effect
Ref	Area represented	Typical/highest monthly outdoor L _{pAeq} [dB] at the facade [Assessment category A/B/C]			Construction activity resulting in highest forecast noise levels	Type of effect	Number of properties represented	Type of receptor	Receptor design	Existing environment	Unique feature	Impact duration (Months)	Combined impact	Mitigation effect	
		Day 07:00 – 19:00	Evening 19:00 – 23:00	Night 23:00 – 07:00											
612510	Ashbrook House, Penny's Lane, Lach Dennis	51/55[A]	-/[B]	-/[C]	Day: Highway works	NA	1	R	T	-	-	-	-	-	
612516	Penny's Lane, Lach Dennis	64/68[B]	-/[C]	-/[C]	Day: Highway works	NA	4	R	T	H	-	-	-	-	
612519	Melvin Holme Farm, Penny's Lane, Lach Dennis	63/68[A]	-/[A]	-/[C]	Day: General site works	A	1	R	T	-	-	D5	-	-	~
612548	Birches Lane, Lostock Green	49/54[A]	-/[A]	-/[A]	Day: Earthworks	NA	15	R	T	-	-	-	-	-	
612549	Birch Grove, Lostock Green	50/56[A]	-/[A]	-/[B]	Day: Earthworks	NA	16	R	T	-	-	-	-	-	
612551	Birches Lane, Lostock Green	51/57[A]	-/[A]	-/[B]	Day: Earthworks	NA	10	R	T	-	-	-	-	-	
612554	Cinder Lane, Lostock Green	54/61[A]	-/[B]	-/[C]	Day: Earthworks	NA	17	R	T	H	-	-	-	-	
612556	Greenside Drive, Lostock Green	51/56[A]	-/[A]	-/[B]	Day: Earthworks	NA	17	R	T	-	-	-	-	-	
612557	Birches Lane, Lostock Green	66/72[B]	-/[C]	-/[C]	Day: Highway works	A	1	R	T	H	-	D2	-	-	MA02-C-C3
612558	Birches Lane, Lostock Green	71/76[C]	31/34[C]	31/34[C]	Day: Highway works Evening: Highway works Night: Highway works	NA	2	R	T	H	-	-	-	-	
612561	Birches Lane, Lostock Green	68/72[B]	-/32[C]	-/32[C]	Day: General site works Evening: General site works Night: General site works	A	1	R	T	H	-	D4	V	-	~
612562	Birches Lane, Lostock Green	67/72[B]	30/32[C]	30/32[C]	Day: General site works Evening: General site works Night: General site works	A	2	R	T	H	-	D4	V	-	~
612565	Birches Lane, Lostock Green	63/65[A]	-/[A]	-/[B]	Day: Earthworks	NA	1	R	T	-	-	-	-	-	
612867	Greenside Drive, Lostock Green	56/63[A]	-/[B]	-/[C]	Day: Highway works	NA	14	R	T	H	-	-	-	-	
613058	Birches Lane, Lostock Green	60/63[C]	-/[C]	-/[C]	Day: General site works	NA	2	R	T	H	-	-	-	-	
613062	Penny's Lane, Northwich	54/59[C]	-/[C]	-/[C]	Day: Highway works	NA	3	R	T	H	-	-	-	-	
613067	Birches Lane, Lostock Green	64/71[B]	-/[C]	-/[C]	Day: Highway works	A	3	R	T	H	-	D1	-	-	MA02-C-C3

Noise Levels

HS2

Table 3: Assessment of construction noise at non-residential receptors

Assessment location		Impact criteria					Significance criteria								Significant effect
Ref	Area represented	Typical/highest monthly outdoor L _{pAeq} [dB] at the façade		Change during month with highest noise level		Construction activity resulting in highest forecast noise levels	Number of Properties represented	Type of receptor	Receptor design	Existing environment	Unique feature	Impact duration (months)	Combined impact	Mitigation effect	
		Day 07:00 – 19:00	Night 23:00 – 07:00	Day 07:00 – 19:00	Night 23:00 – 07:00										
612553	Lostock Green Methodist Church, Birches Lane, Lostock Green	49/55	-/-	2	-	Day: Earthworks	1	A2	T	-	-	-	-	-	\$

Table 4: Construction vibration impacts and significant effects at residential and non-residential receptors

Assessment location		Impact criteria				Significance criteria							Significant effect
Ref	Area represented	Peak particle velocity (PPV) [mm/s] on foundation	Typical/highest monthly indoor vibration dose value (VDV) [m/s1.75]		Construction activity resulting in highest forecast vibration	Type of effect	Number of properties represented	Type of receptor	Receptor design	Unique feature	Combined impact	Impact duration [m]	
			Day 07:00 – 23:00	Night 23:00 – 07:00									
612519	Melvin Holme Farm, Penny's Lane, Lach Dennis	0.3	0.04/0.20	-/-	Site set up (vibratory roller)	NA	1	R	T	-	-		
612558	Birches Lane, Lostock Green	0.3	0.04/0.24	-/-	Embankment construction (vibratory roller)	A	2	R	T	-	-	D<1	
612561	Birches Lane, Lostock Green	0.5	0.08/0.40	-/-	Site set up (vibratory roller)	A	1	R	T	-	O	D3	~
612562	Birches Lane, Lostock Green	0.7	0.12/0.68	-/-	Site set up (vibratory roller)	A	2	R	T	-	O	D3	~

Noise Levels

HS2

Table 5: Operational airborne sound, noise impacts and significant effects: residential and non-residential receptors

Assessment location		Impact criteria										Significance criteria								Significant effect
Ref	Area represented	Proposed Scheme only (year 15)			Without Proposed Scheme (opening year baseline)			With Proposed Scheme (opening year baseline + year 15 traffic) ****		Change		Type of effect	Number of impacts represented	Type of receptor	Receptor design	Existing environment	Unique features	Combined impact	Mitigation effect	
		Day *	Night **	Max ***	Day *	Night **	Max ***	Day *	Night **	Day *	Night **									
612510	Ashbrook House, Penny's Lane, Lach Dennis	48	42	63/--	55	48	53	55	49	1	1	A	1	R	T	-	-	-	-	
612516	Penny's Lane, Lach Dennis	63	55	71/--	62	56	61	63	55	1	-1	S	4	R	T	H	-	-	NI	
612519	Melvin Holme Farm, Penny's Lane, Lach Dennis	62	56	77/--	51	45	50	62	56	11	11	S	1	R	T	-	-	-	NI	~
612548	Birches Lane, Lostock Green	46	40	63/--	46	40	45	48	42	2	2	A	15	R	T	-	-	-	-	
612549	Birch Grove, Lostock Green	48	42	66/--	49	43	48	49	43	-1	0	A	16	R	T	-	-	-	-	
612551	Birches Lane, Lostock Green	49	43	65/--	52	45	50	51	45	0	0	A	10	R	T	-	-	-	-	
612554	Cinder Lane, Lostock Green	53	47	67/--	58	52	57	53	47	-5	-5	A	17	R	T	-	-	-	-	MA02-O-C6
612556	Greenside Drive, Lostock Green	51	45	65/--	50	44	49	51	45	1	2	A	17	R	T	-	-	-	-	
612557	Birches Lane, Lostock Green	62	53	71/--	65	59	64	62	54	-3	-5	A	1	R	T	H	-	-	-	MA02-O-C6
612558	Birches Lane, Lostock Green	61	54	75/--	74	67	72	61	54	-12	-13	A	2	R	T	H	-	-	-	MA02-O-C6
612561	Birches Lane, Lostock Green	63	56	78/--	62	56	61	66	59	3	3	S	1	R	T	H	-	-	NI	~
612562	Birches Lane, Lostock Green	59	52	74/--	63	56	61	64	58	2	2	A	2	R	T	H	-	-	-	~
612565	Birches Lane, Lostock Green	56	50	72/--	50	43	48	57	50	7	7	A	1	R	T	-	-	-	-	~
612867	Greenside Drive, Lostock Green	54	47	68/--	57	51	56	55	48	-2	-2	A	18	R	T	-	-	-	-	
613058	Birches Lane, Lostock Green	53	47	70/--	65	59	64	65	59	0	0	A	2	R	T	H	-	-	-	
613062	Penny's Lane, Northwich	53	47	68/--	65	58	63	65	58	0	0	A	3	R	T	H	-	-	-	
613067	Birches Lane, Lostock Green	56	49	68/--	64	57	62	63	57	0	-1	A	8	R	T	H	-	-	-	
612553	Lostock Green Methodist Church, Birches Lane, Lostock Green	49	43	64/--	60	53	58	60	54	0	0	B	1	A2	T	-	-	-	-	

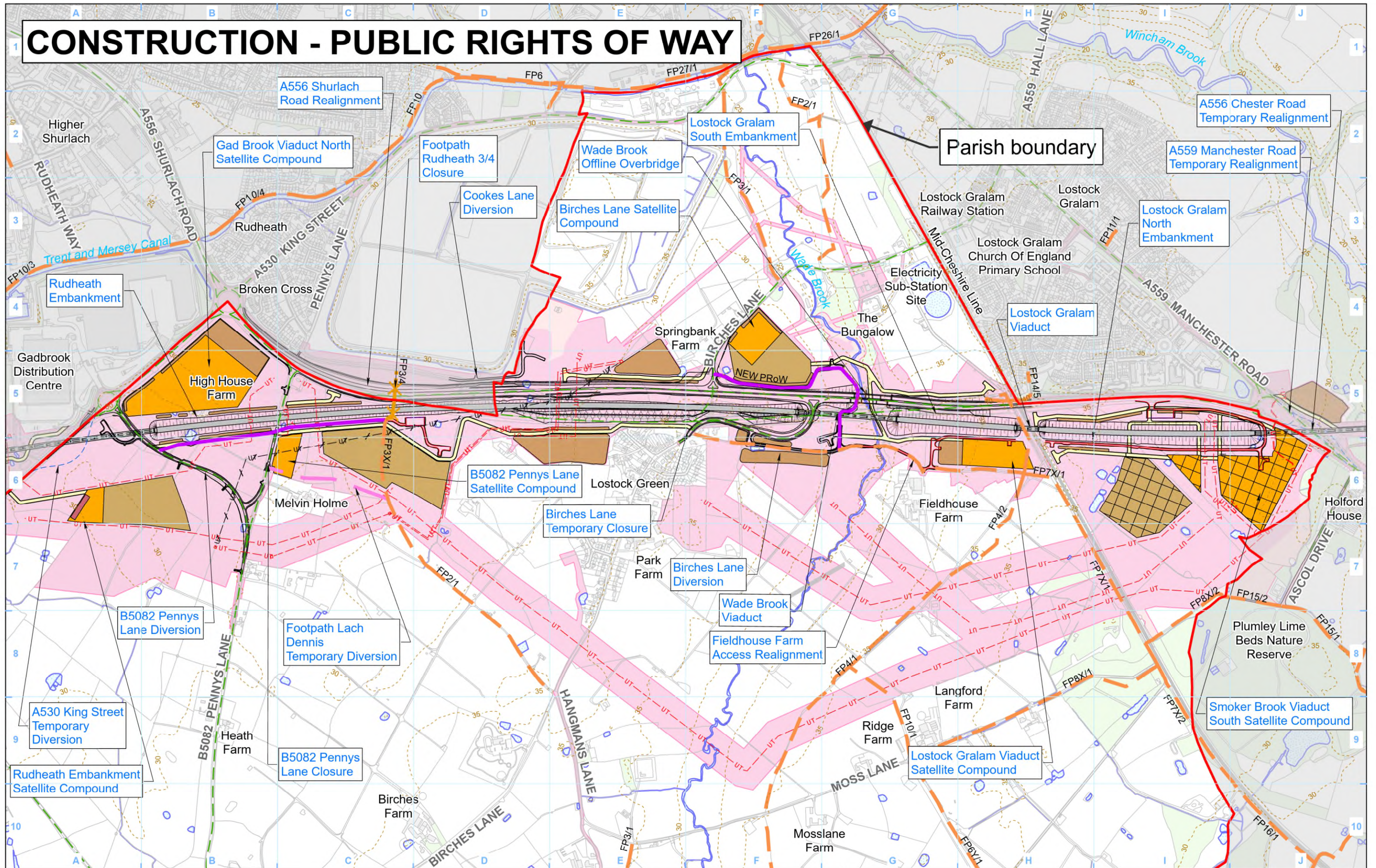
Noise Levels

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Table 6: Operational vibration impacts and significant effects at residential and non-residential receptors

Assessment location		Impact criteria				Significance criteria								Significant effect
Ref	Area represented	Ground-borne sound level dB L _{pASmax}	VDV m/s ^{1.75}	VDV m/s ^{1.75}	% Increase or decrease in VDV	Number of impacts represented	Type of effect	Type of receptor	Receptor design	Existing environment	Unique feature	Combined impact	Mitigation effect	
			Daytime (07:00 – 23:00)	Night-time (23:00 – 07:00)										
612558	Birches Lane, Lostock Green	-	0.16	0.1	-	2	NA	R	T	-	-	-	-	

CONSTRUCTION - PUBLIC RIGHTS OF WAY



Legend

- Indicative extents of Petitioner(s) land interests
- Satellite construction compound
- Railway systems compounds
- Temporary material stockpile
- Land potentially required during construction
- Land potentially required for mitigation planting
- Rail alignment formation
- Haul routes
- Temporary workers accommodation
- Construction traffic route
- Existing public right of way
- Public right of way closure
- Temporary public right of way diversion / realignment
- New, diverted or realigned public right of way
- Landscape earthworks
- Engineering earthworks
- Temporary highway diversion / realignment
- Major utility works
- Major utility works - Removed
- Existing inland water
- Existing woodland
- Existing buildings
- Existing watercourse
- HS2 access
- Rail alignment
- 5m contours

Petitioner
Lach Dennis Parish Council

Petition number
HS2-011

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Doc Number: 2PT24-MWJ-PT-MAP-M000-001171-HS2-011

Date: 20/03/2023

[illegible]

Legend

Indicative extents of Petitioner(s) land interests	Replacement floodplain storage area	Hedgerow	Existing public right of way	Existing buildings
Railway systems site	Grassland habitat creation	New ditches	New, diverted or realigned public right of way	Existing watercourse
Ecological mitigation pond (Indicative only)	Wetland habitat creation	Watercourse diversion	Public right of way closure	HS2 access
Balancing pond	Woodland habitat creation	Engineering earthworks	Existing inland water	Noise fence barrier
	Landscape mitigation planting (scrub / woodland)	Landscape earthworks	Existing woodland	Rail alignment
		Rail alignment formation		5m contours

Petitioner

Lach Dennis Parish Council

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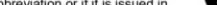
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Phase 2b (Crewe – Manchester)

A Note on Ground Risk across the Cheshire Plain

A Report Prepared by GCG, led by Professor Lord Robert Mair

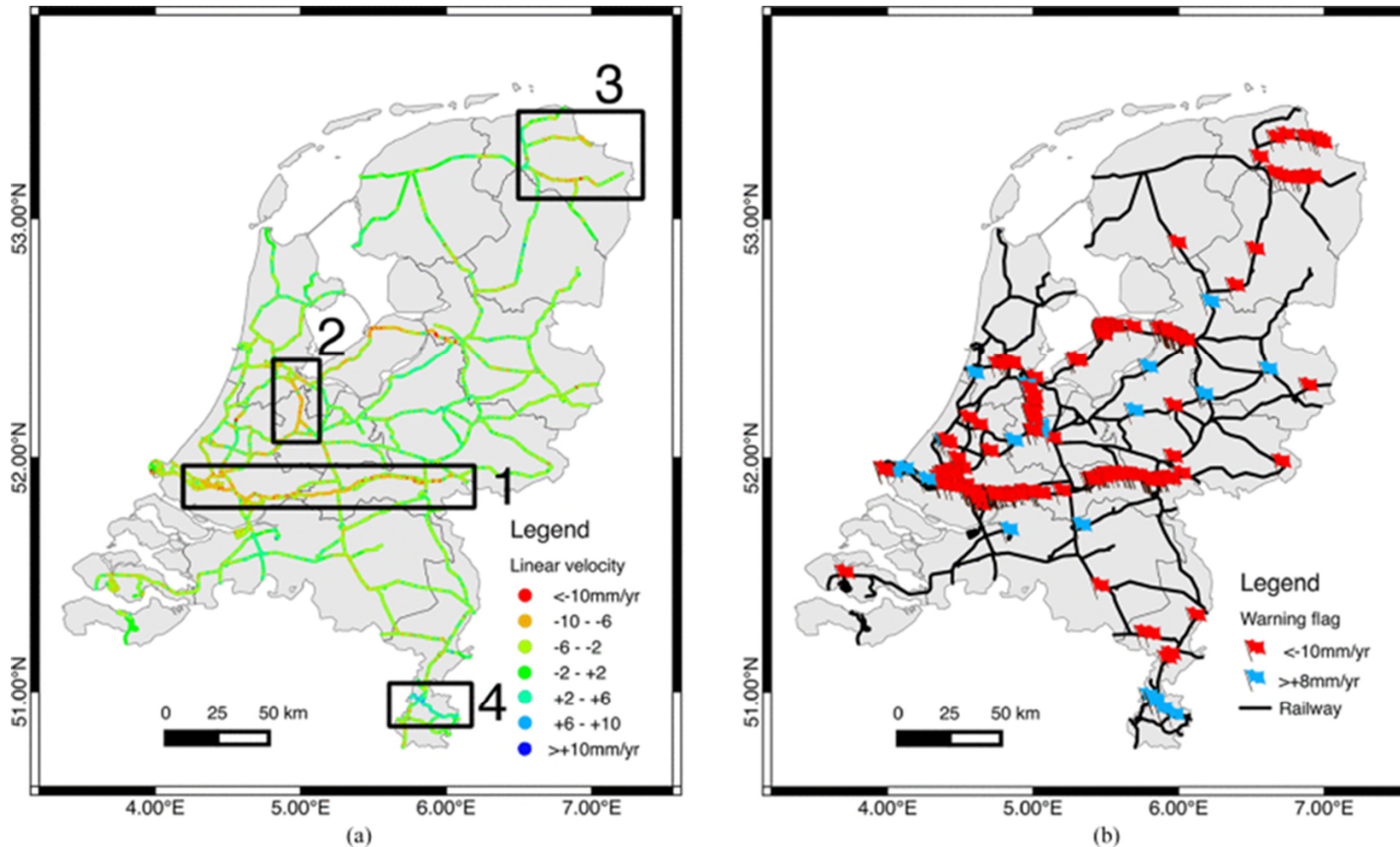


Figure 10.5: (a) Deformation map for Netherlands railway network derived from satellite observations. (b) Risk map, in which the coloured flags indicate the severity of the deformation (negative means settlement, positive means heave). Ling Chang et al (2018)

Extract of Network Rail Report “A Review of Earthworks Management”, Mair et al (February 2021)

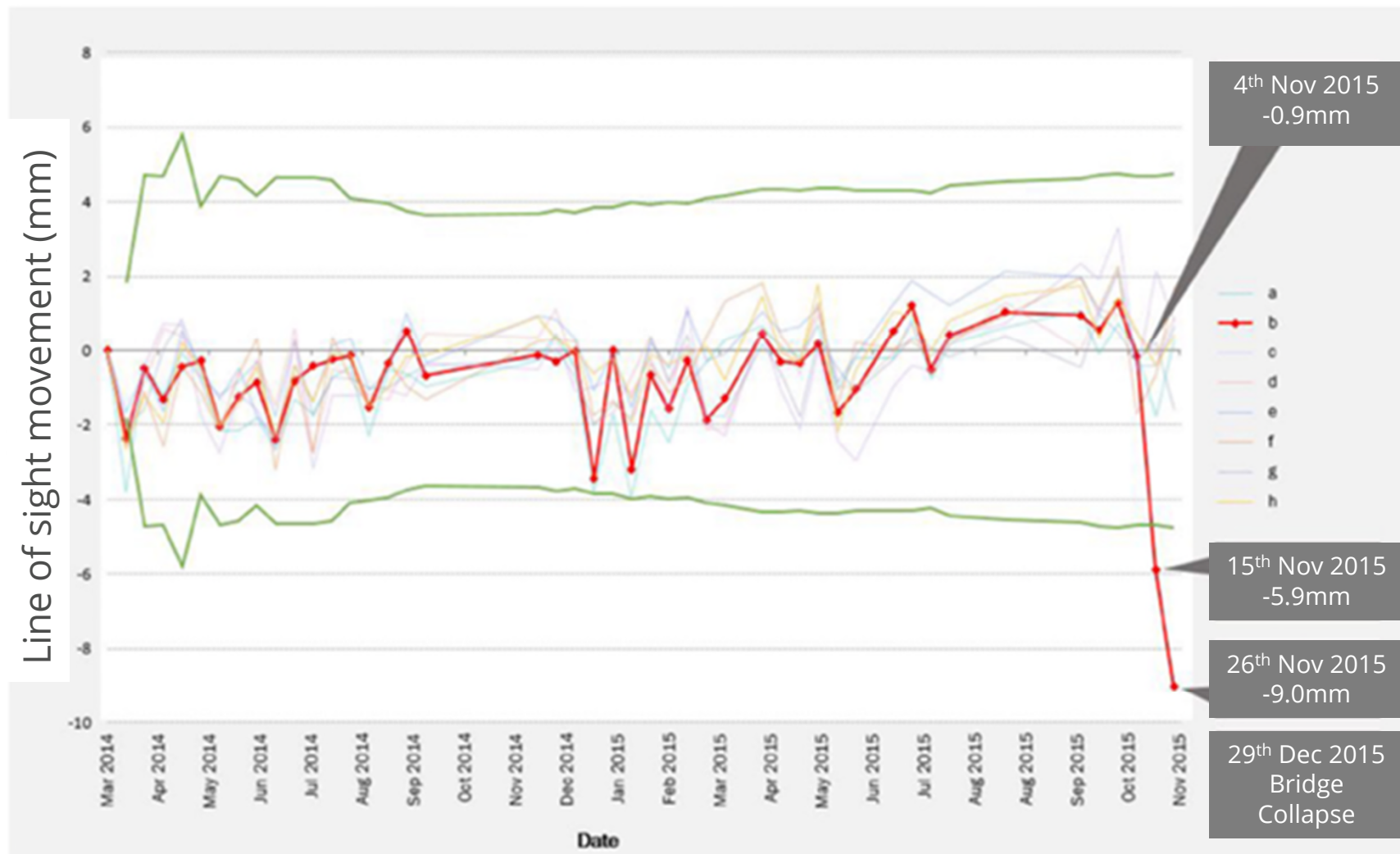


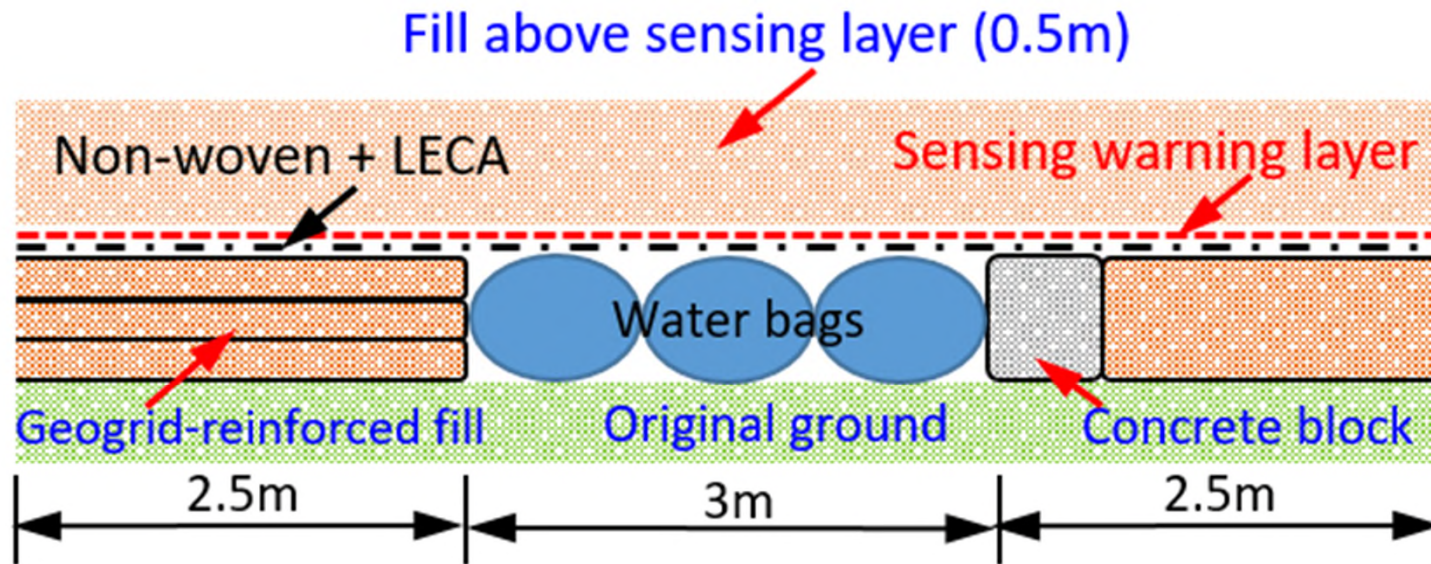
Figure 10.4: Vertical movements of masonry bridge at Tadcaster inferred from InSAR data, indicating rapidly increasing settlement several weeks before bridge failure occurred due to scour of its foundations during flooding of the River Wharfe (Selvakumaran, S et al, 2018)

Extract of Network Rail Report “A Review of Earthworks Management”, Mair et al (February 2021)

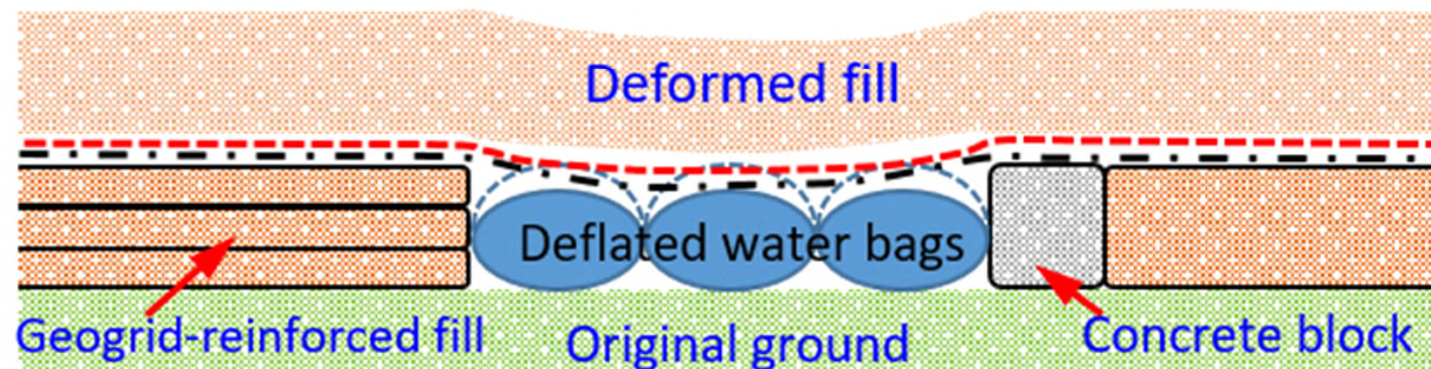


Figure 10.3: Wireless tiltmeters around a tunnel portal (Network Rail presentation, 9 October 2020)

Extract of Network Rail Report “A Review of Earthworks Management”, Mair et al (February 2021)

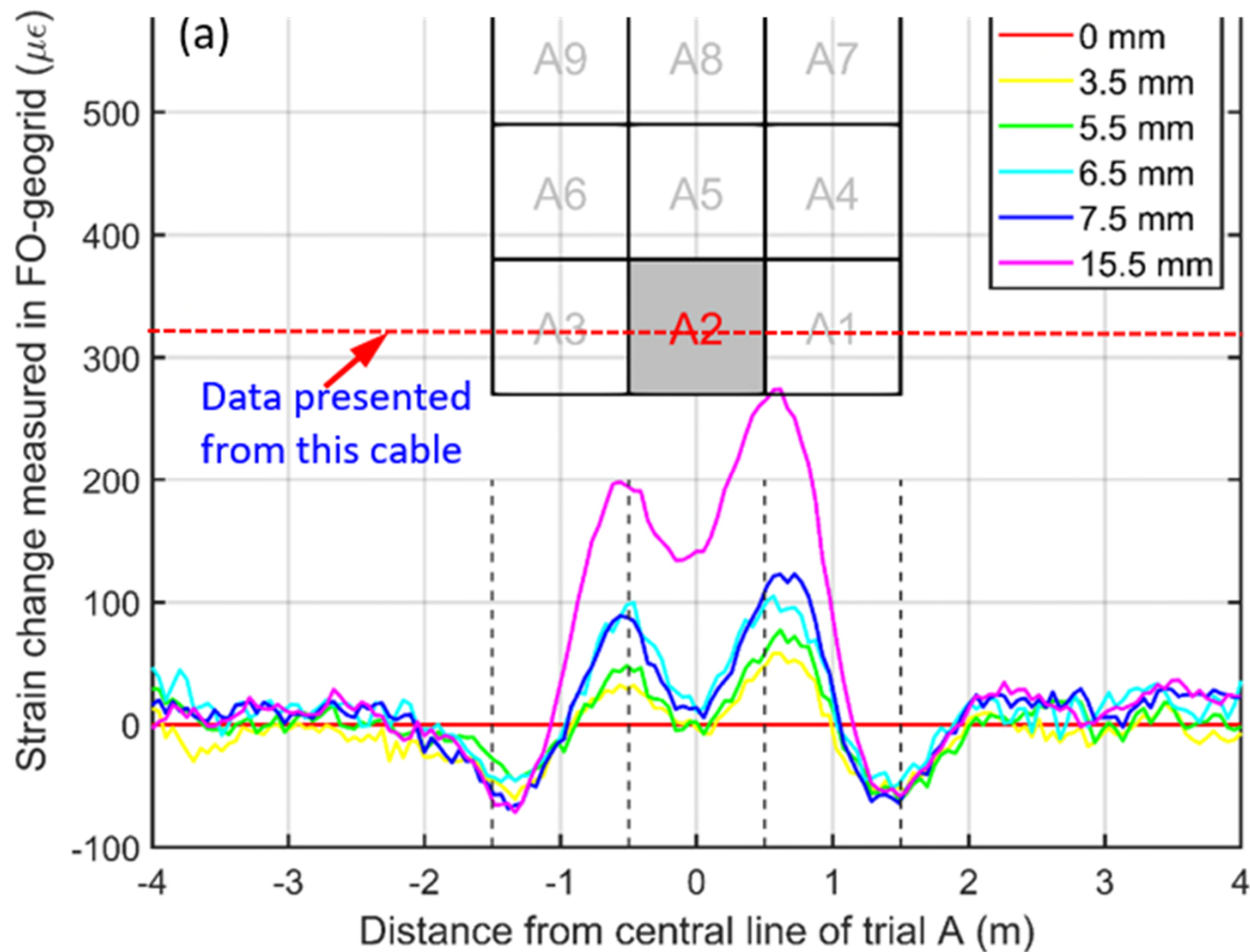


(a) Schematic diagram of field experiments (initial)



(b) Schematic diagram of field experiments (Bags deflated)

Fig.1 Field simulation of ground movement: (a) Schematic diagram of field experiments at the initial stage; (b) Schematic diagram of field experiments when bags deflated; (c) results for deflation of cell A2, small displacements results, (d) Construction of field experimental setup (after Xu et al, 2022)



(c) Small displacements

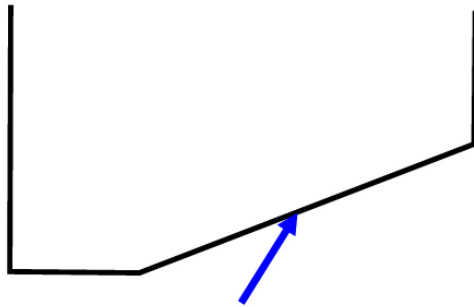
Fig.1 Field simulation of ground movement: (a) Schematic diagram of field experiments at the initial stage; (b) Schematic diagram of field experiments when bags deflated; (c) results for deflation of cell A2, small displacements results, (d) Construction of field experimental setup (after Xu et al, 2022)



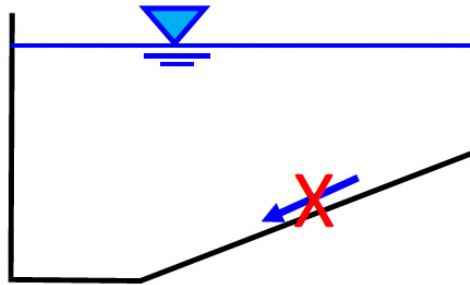
(c) Construction of site trial – Sensorgrid over water bags with backfill above

Fig.1 Field simulation of ground movement: (a) Schematic diagram of field experiments at the initial stage; (b) Schematic diagram of field experiments when bags deflated; (c) results for deflation of cell A2, small displacements results, (d) Construction of field experimental setup (after Xu et al, 2022)

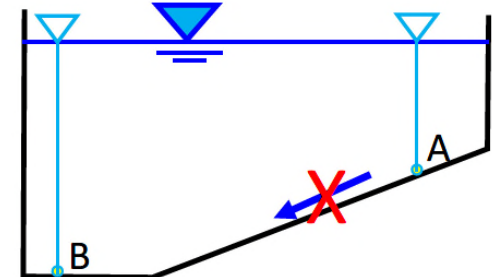
Illustration in response to Dr Todhunter's presentation of driving head at salt rockhead



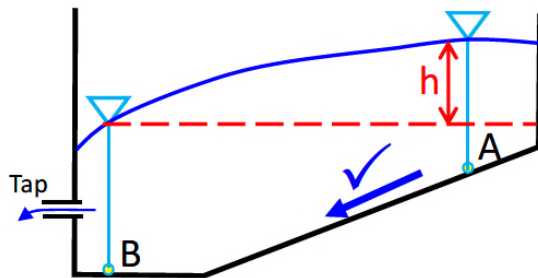
Container with sloping base, mimicking inclined salt rockhead



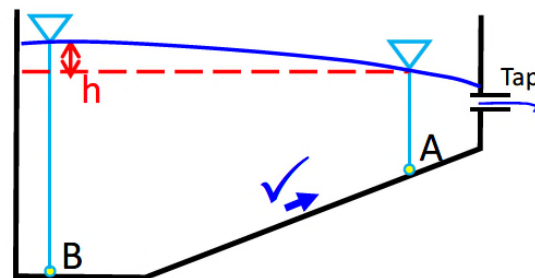
Container filled with water; there is no flow even though the base is inclined



This is because there is no driving head – e.g. see pressure head at points A & B which are equal



If you open a tap on the left, then a head difference “h” is generated and this drives flow.



Indeed if you open a tap on the right, then flow at the base would seem to be “uphill” with respect to the slope of the container base.

HS2 CREWE TO MANCHESTER

**A Note on Ground Risk across the
Cheshire Plain**

**A Report Prepared by GCG, led by
Professor Lord Robert Mair
CBE FREng FICE FRS**

5th April 2023

HS2

Crewe to Manchester

A Note on Ground Risk across the Cheshire Plain

5th April 2023

1. Introduction

1.1 This Note has been prepared by Professor Lord Robert Mair and Dr Chris Menkiti of Geotechnical Consulting Group (GCG). The purpose of the Note is to comment on the following documents:

- *Briefing Statement: HS2 2B route across the Cheshire Salt District North of Crewe*. Report by Dr Rosalind Todhunter, dated 6 July 2022 (hereinafter referred to as the ‘Todhunter report’)
- *Crewe to Manchester, Understanding the Ground Risk across the Cheshire Plain*. Report by HS2, dated 3rd March 2023 (hereinafter referred to as the ‘HS2 report’)

2. Background

2.1 The proposed HS2 line will cross the Cheshire Plain, an area of relatively flat topography, comprising mainly rural pasture and crop fields. The alignment of the Proposed Scheme crosses the Cheshire Plain in areas of former salt mining and other areas where salt mining is ongoing.

2.2 Throughout this Area of Interest, there are flashes and meres. Flashes are existing water bodies which have formed in depressions in the ground surface resulting from ground settlement, which has been induced by either historic mining collapse or salt dissolution processes. Meres are shallow lakes, likely to have originated at depressions formed from glacial scouring.

2.3 The HS2 Proposed Scheme will be on low embankments and, in some locations, on viaducts and bridge structures. There is a history of ground settlement in the area, arising from historic mining and from salt dissolution processes. The scheme is therefore likely to experience longer term ground settlements in its operational mode. This is addressed later in this Note.

3. Ground conditions and geotechnical risks

3.1 The HS2 report comprehensively describes the geology and ground conditions, including the hydrology (surface water) and hydrogeology (sub-surface groundwater). This information has been gained from detailed desk studies comprising reviews of published data sources, including borehole information held by the British Geological Survey (BGS), and consultations with mining companies operational within the area.

3.2 Geomorphological mapping (i.e. mapping the landforms and their development) has also been undertaken to identify higher priority locations in respect of potential salt dissolution hazard.

Advanced ground investigations, comprising boreholes and cone penetration tests (CPTs) have been undertaken at these targeted locations in 2020 and 2021. Currently, a time history of LiDAR¹ and InSAR² surveys are being studied by HS2 to identify locations of settlement within the alignment corridor.

- 3.3 LiDAR means Light Detection and Ranging and refers to a remote sensing technique that uses pulsed radar to survey a zone of ground.
- 3.4 InSAR stands for Interferometric Synthetic Aperture Radar. It is a satellite-based remote sensing method that can generate high-resolution images using radio and microwaves.
- 3.5 Appendix C of the HS2 report describes both LiDAR and InSAR techniques and associated data already gathered for the proposed alignment by HS2.

4. Further investigations

- 4.1 At this stage of a scheme, it is reasonable not to have undertaken fully comprehensive ground investigations in the form of many more boreholes and CPTs. HS2 is now planning for more ground investigations to further understand the ground conditions. Further supplementary investigations will be essential for the detailed design of the scheme; these will be at a later stage. However, there is sufficient geotechnical information at present on which to base the horizontal and vertical alignment of the Proposed Scheme.
- 4.2 Further investigations informing the detailed design development will also include collection and analysis of LiDAR and InSAR data to obtain information on surface depressions and settlements of the ground in the Area of Interest, as described above. Further comments on the value of LiDAR and InSAR are made in section 7.

5. Potential geotechnical risks

- 5.1 The Todhunter report identifies the complex geological issues in the Area of Interest, highlighting the influence of rock salt dissolution on potential future ground subsidence. Other concerns expressed in the report relate to artesian groundwater pressures in some superficial layers. However, this does not appear to be directly related to salt dissolution; it is a different and more common geotechnical problem associated with the impact of elevated porewater pressures in cohesionless deposits.

¹ From 1998 to present

² From 1995 to 2020

- 5.2 The HS2 report also addresses natural salt dissolution, controlled brine extraction and the potential effects at the ground surface. It notes that, with the cessation of wild brining more than four decades ago, ongoing dissolution along brine runs is expected to be at a slow rate. It also discusses the specific geological conditions leading to collapse at the ground surface, known as ‘sink holes’, noting that there have been no reported instances of sink hole formation arising from salt dissolution across the Area of Interest. This includes a review of data from the Cheshire Brine Compensation Board, for which HS2 report that “The Cheshire Brine Compensation Board stated that in the decade following 2006³ they had received [only] one notice of damage within 1km of the HS2 route” and for this “compensation [was] rejected as [it was] not attributable to salt dissolution”.
- 5.3 The Todhunter report also identifies the need for careful drainage design and this is recognised by HS2. We agree with this.
- 5.4 In summary, we agree with the broad mechanisms of potential salt dissolution hazards identified both in the Todhunter report and the HS2 report, and that there is likely to be future ground subsidence. This must be allowed for in the detailed design of the Proposed Scheme. The Todhunter report refers to “extensive ground instability” in several places. This is potentially misleading, implying that these mechanisms at depth will be manifested at the ground surface as extensive instability in terms of their interaction with the proposed embankments and structures. Whereas long-term surface ground movements that occur can be managed, as discussed in this Note.

6. Proposed scheme response

- 6.1 Although future ground subsidence is to be expected, the HS2 report outlines how this can be safely accommodated by the detailed design of the Proposed Scheme. Bridges and viaducts will be on piled foundations, with the piles taken down to adequate depths; the decks of these structures will be designed to have jacking facilities if there is a need to adjust them in the future.
- 6.2 The Proposed Scheme will be mainly on low embankments, which will probably incorporate geogrid reinforcement; these stiffer embankments will mitigate against effects of ground subsidence, but there may also be a need to adjust the rails to allow for ongoing settlement. The settlement development is likely to be slow and such adjustment is feasible.
- 6.3 A key to the approach outlined in the HS2 report is to mitigate the risk of ongoing settlement (including incipient sinkholes at the ground surface) by firstly adopting engineering solutions, such

³ after cessation of the last known brine operation - the New Cheshire Salt Works, situated in Wincham 2km from the route alignment, which ceased trading in June 2006

as those discussed in paragraphs 6.1 to 6.2 above, and then dealing with any further settlement by means of comprehensive monitoring and appropriate maintenance interventions.

- 6.4 The combination of further ground investigations, risk assessments, use of engineered solutions, detailed monitoring of movements of both the ground and the railway, and a detailed response plan for both anticipated and unexpected ground movement (termed ‘adaptive interventions’ in the HS2 report) will ensure that the Proposed Scheme can be operated safely.

7. Monitoring and surveillance technologies

- 7.1 The HS2 report refers to the use of LiDAR and InSAR for remote sensing of the settlement of the Proposed Scheme. We fully agree with this. Following the tragic train derailment near Carmont (west of Stonehaven), Scotland in August 2020 after a period of intense rainfall, Network Rail appointed Lord Mair to chair a Task Force Review of their management of earthworks (i.e., cuttings and embankments) across the whole Network Rail system. The Review focused on Network Rail’s capability and methodology for the management of railway cuttings and embankments, particularly in the light of climate change. The Task Force report, published in February 2021 (ref[1]), contained a total of 54 recommendations, including the need for significant investment in the updating of monitoring and surveillance methods.

- 7.2 Chapter 10 of the Task Force report focused on the importance of monitoring and surveillance technologies and drew attention to the considerable value of InSAR, using satellite technology. An application of InSAR for railways is shown in Figure 10.5 from the Task Force report (extract below) in which the technology was applied to the entire railway network of the Netherlands, more than 3000 km long, using hundreds of Radarsat-2 acquisitions between 2010 and 2015, leading to the first satellite-based nationwide railway monitoring system. The resulting deformation map for the Netherlands railways is shown in Figure 10.5 (a) of the Network Rail report, and a more detailed “flagging system” risk map is shown in Figure 10.5(b). The risk map, based on the satellite measurements combined with expert judgement, shows areas with < -10 mm/year (indicating a settlement rate exceeding 10mm/year), and those with $> +8$ mm/year (indicating a heave rate exceeding 8mm per year); these are highlighted by the red and blue flags, respectively.

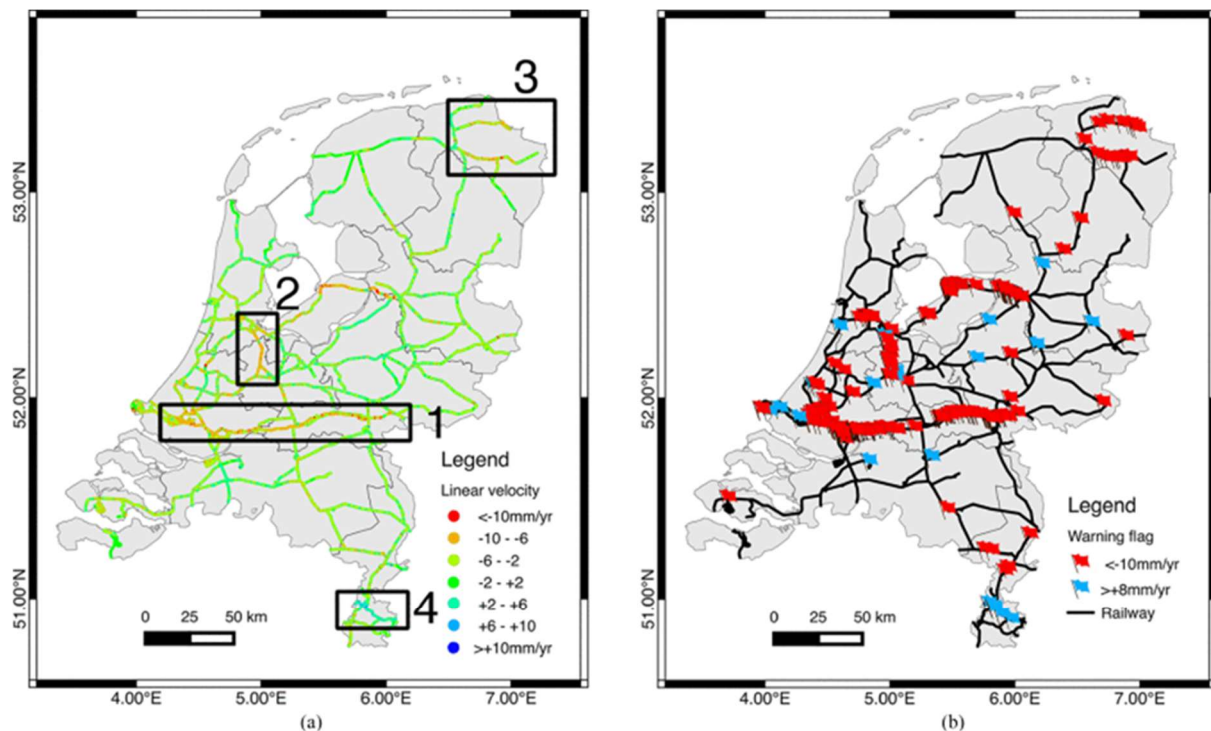


Figure 10.5: (a) Deformation map for Netherlands railway network derived from satellite observations. (b) Risk map, in which the coloured flags indicate the severity of the deformation (negative means settlement, positive means heave). Ling Chang et al (2018)

Extract from ref [1]

7.3 The recent experience for the Netherlands railway network illustrates the potential for InSAR to be used to monitor and control the performance of the HS2 Proposed Scheme. InSAR is clearly a promising technology which is developing rapidly, particularly with rapid developments in AI and machine learning.

7.4 InSAR is also capable of providing warning of impending instability. An example of its potential use for providing warning of bridge foundation scour is illustrated in Figure 10.4 from the Task Force report (see below). On 29th December 2015, following a period of intense rainfall and flooding, the masonry bridge at Tadcaster suffered a partial collapse into the River Wharfe due to scour of its foundations. Figure 10.4 shows subsequent analysis of InSAR data indicating settlement of the bridge being a precursor to failure; measurements several weeks before the failure indicate rapidly increasing settlement, almost certainly caused by earlier flooding and scour. This is a good example of the potential for InSAR technology for providing evidence of settlement as a precursor to subsequent instability and failure. It is highly relevant to providing warning of a possible, although unlikely, development of a sink hole beneath the HS2 Proposed Scheme.

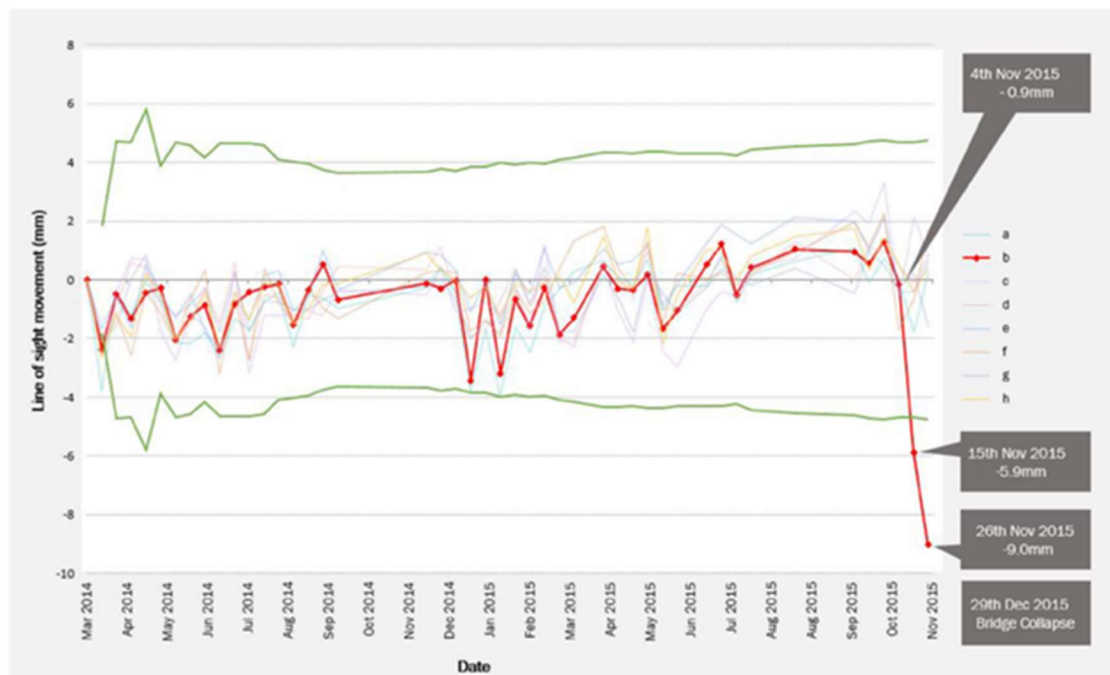


Figure 10.4: Vertical movements of masonry bridge at Tadcaster inferred from InSAR data, indicating rapidly increasing settlement several weeks before bridge failure occurred due to scour of its foundations during flooding of the River Wharfe (Selvakumaran, S et al, 2018)

Extract from ref [1]

7.5 Chapter 10 of the Task Force report also highlights a number of other new technologies for monitoring, including wireless tiltmeter systems recently trialled by Network Rail (see Figure 10.3 below, which has been extracted from the Task Force report). The tiltmeters transmit their measurements through a wireless communications network to a gateway, and thereby are loaded onto the internet. Readings can be taken every five minutes or at even higher frequencies, and alert levels set to give suitable warnings. These are an extremely promising application of innovative sensor development to the management of infrastructure such as the HS2 Proposed Scheme.

7.6 The roles of monitoring and mitigation are recognised in the Todhunter report⁴.

⁴ e.g., Section 4 paragraph 3



Figure 10.3: Wireless tiltmeters around a tunnel portal (Network Rail presentation, 9 October 2020)

Extract of ref [1]

7.7 Distributed fibre optic sensing (DFOS) provides a powerful technique for measurement of deformation and for advance warning of adverse ground movements. Controlled field experiments for early detection of sink hole development have recently been undertaken by HS2, Cambridge University and others (Xu et al, 2022). These were designed to assess the use of a newly developed geogrid for early warning of localised ground movement – see Fig.1 below. The geogrid is integrated with DFOS strain cables during the manufacturing process (referred to as a Sensorgrid). The trial results showed that the Sensorgrid configuration is highly sensitive to strain and can detect very small vertical displacement.

7.8 This innovative technology has considerable relevance to the HS2 Proposed Scheme, in which geogrids are likely to be incorporated in embankments in certain areas.

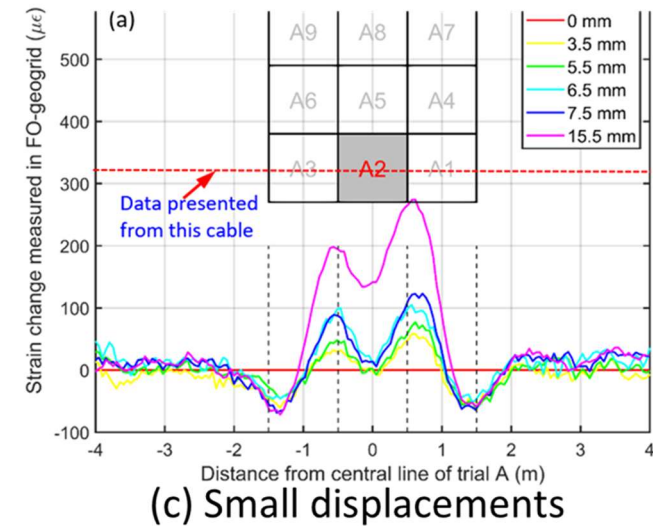
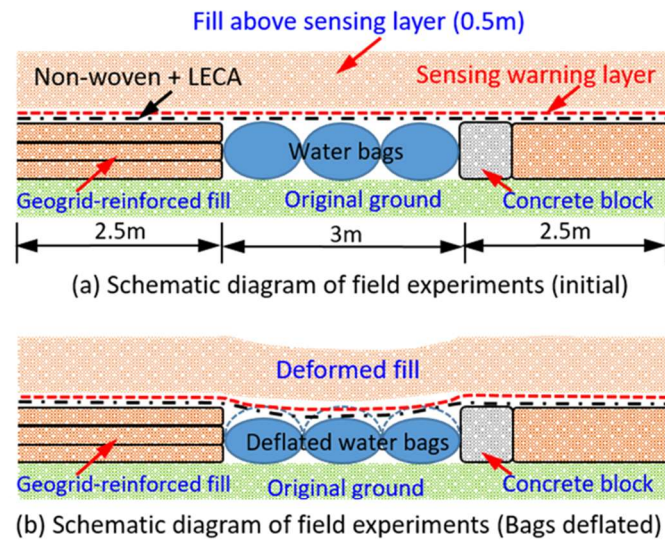


Fig.1 Field simulation of ground movement: (a) Schematic diagram of field experiments at the initial stage; (b) Schematic diagram of field experiments when bags deflated; (c) results for deflation of cell A2, small displacements results, (d) Construction of field experimental setup (after Xu et al, 2022)

8. Conclusions

- 8.1 Since the refined alignment was published in 2016 (ref [2]), additional surveys and studies have been undertaken by HS2 in the Cheshire Plain area, including desk studies of BGS boreholes, data harvesting from salt mine operators, geomorphological mapping and risk categorisation for salt solution landforms, new InSAR and LiDAR surveys, and new ground investigations comprising boreholes and CPTs.
- 8.2 Therefore, it appears, at this stage, that there is sufficient ground investigation information for HS2 to define the vertical and horizontal alignment in the Cheshire Plain area.
- 8.3 Nevertheless, further extensive ground investigation and surveys will be undertaken to fully develop the design and to inform construction planning.
- 8.4 Complex geological mechanisms apply in the Area of Interest, related to the influence of rock salt dissolution. These are well recognised in both the Todhunter report and the HS2 report and we agree that these potential geological hazards are important and applicable. These geological mechanisms will result in ongoing surface settlement that must be accommodated by the HS2 project, both during construction and in the operational life of the railway. The HS2 report discusses many engineering techniques for addressing such challenges.
- 8.5 It is common in infrastructure engineering for structures to be designed to tolerate ground movements. The techniques referenced in the HS2 report are well-established engineering methods that have been successfully used many times. We see no reason why they cannot be successfully used in the Cheshire Plain for the HS2 Proposed Scheme.
- 8.6 Indeed, for the efficient and safe operation of a high speed train, track maintenance with level corrections is a reality, regardless of any underlying time-dependent ground movements.
- 8.7 The ongoing settlements in the Cheshire Plain would be addressed by HS2 by risk categorisation and engineered solutions during design and construction, and in the operational life of the railway by monitoring, surveillance and appropriate maintenance interventions.
- 8.8 There have been significant advances in monitoring and surveillance technologies in recent years, e.g. LiDAR, InSAR, wireless tiltmeters and fibre optic sensing, most of which are being implemented by Network Rail. Adoption of such technologies will be of considerable benefit to the HS2 Proposed Scheme in ensuring safe construction and operation of the railway.
- 8.9 It is noteworthy that the West Coast Main Line railway and other railways have successfully operated in the same area for a long period.

8.10 Based on the information we have reviewed, we see no insurmountable obstacle to the successful construction and operation of the HS2 Proposed Scheme.

8.11 Climate change might promote faster salt solution mechanisms resulting in quicker rates of surface settlement. A climate change resilience assessment was undertaken by HS2 as part of its Environmental Impact Assessment. The result was that “All climate change related risks during operation have been assessed to be ‘low’ or ‘medium’ due to the range of mitigation measures”. We are satisfied that the proposed HS2 construction stage mitigations, as well as the monitoring and surveillance strategies for the operational stage jointly provide resilience to potential climate change impacts.

9.0 References

- [1] A Review of Earthworks Management, prepared by a Task Force led by Professor Lord Robert Mair for Network Rail, February 2021 <https://www.networkrail.co.uk/wp-content/uploads/2021/03/Network-Rail-Earthworks-Review-Final-Report.pdf>
- [2] High Speed Two Phase 2b, Crewe to Manchester West Midlands to Leeds, Route Refinement Consultation 2016 – Consultation document, November 2016.
- [3] Xiaomin Xu, Cedric Kechavarzi, David Wright, Graham Horgan, Hartmut Hangen, Nicholas De Battista, Dave Woods, Edgar Bertrand, Sarah Trinder, Nick Sartain (2022) “Fibre optic instrumented geogrid for ground movement detection”, 11th International Symposium on Field Monitoring in Geomechanics ,London, 4th – 8th September, 2022

Fibre optic instrumented geogrid for ground movement detection

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Abstract

The serviceability of transportation infrastructure, and other civil engineering assets, can be adversely affected by post-construction ground movements. Potential sources of these movements include loss of material from dissolution features, differential movements at earthwork/structure transitions and movements associated with mining legacy features. Post-construction ground movements are mitigated through engineering design, which may be supported through the inclusion of monitoring systems within the earthworks at locations of particular interest.

The number of available methods capable of monitoring sufficiently large areas and providing early warning of the onset/development of ground movement is limited. The incorporation of distributed fibre optic sensing (DFOS) systems into earthworks could provide important information on the commencement, location, origin and magnitude of ground movements in near real-time for critical infrastructure over areas at risk.

HS2 is the new high-speed railway connecting London, Birmingham and the north of England. This paper presents field monitoring trials on the HS2 Phase One route using a newly developed sensing solution consisting of a DFOS instrumented geogrid for ground movement detection. Controlled field tests were first performed on two simulated sinkholes using 3x3m pits in which water-filled bags were placed and covered with stabilised chalk and granular soils, respectively. By deflating the bags in varying sequences, the captured strain signature profiles from the instrumented geogrid were compared with displacement measurements from conventional instrumentation, to assess the instrumented geogrid's sensitivity to millimetre-scale settlements. Robustness and resilience were also evaluated through in-situ durability tests. Finally, as a result of these trials, this technology is being deployed over a 100 m-long, 10 m-wide stretch of the mainline alignment on the HS2 site at Tilehouse Lane Cutting to demonstrate its viability within a live construction environment. During the remaining construction period, continuous monitoring, near real-time data processing and visualisation will offer the opportunity to detect any incipient ground movement below the temporary haul road surface.

Keywords: Distributed fibre optic sensing, Ground movement, Geogrid, Sensorgrid, Early warning

1. Introduction

Nearly all of the UK's critical infrastructure is placed on, or situated in soil. Therefore, ground movement can have a significant social, economical and physical impact on infrastructure provision both at present and in future years. Such ground movements are commonly induced from shallow geohazards like sinkholes, subsidence, landslides, etc., often resulting in both long-term degradation and, ultimately, structural failure of particular assets. Climate change projections suggest that these geohazards, which are themselves often driven by antecedent weather conditions, are likely to increase in magnitude and frequency for certain areas of the UK through the 21st century. Implementing early warning systems by measuring and monitoring spatio-temporal movements may be used as part of a coordinated design and risk management approach to mitigate these increasing risks posed to critical infrastructure (Ast et al. 2001). This was also emphasised by the task force appointed by Network Rail to carry out a review of earthworks management following the fatal train derailment at Carmont, Scotland on 12th August 2020 (Network Rail, 2021).

The number of available methods that are capable of monitoring sufficiently large areas and providing early warning of the onset/development of ground movement, is limited. Conventional instrumentation, such as

borehole extensometers, are often constrained by discretely instrumented ‘measuring points’. Remote sensing technologies like interferometric synthetic aperture radar (InSAR) are commonly used to detect ground surface elevation changes and have proved effective in mapping large-scale ground motions. However, these do not allow for the capture of subsurface deformation, which is often a precursor and early warning of surface ground movement, and their effectiveness in highly vegetated infrastructure corridors is often limited. Distributed fibre optic sensing (DFOS) technology has emerged as a powerful tool for continuous, high temporal and spatial resolution mapping of subsurface ground movement. DFOS enables measurement of temperature, strain, and acoustic energy distributions along the entire length of a fibre optic sensing cable (Kechavarzi et al. 2016; Xu et al. 2021). The incorporation of DFOS cables into the ground could provide significantly improved information on the location and magnitude of subsurface ground movement and subsidence (Möller et al., 2022). To date, this technology has been trialled in some field monitoring campaigns, with DFOS cables embedded in trenches on the ground surface and back-filled by in-situ soil to monitor ground cracks, horizontal displacements and ground settlements. Many have reported that the quality of fibre optic sensing data is highly reliant on the mechanical coupling between fibre optic cables and their surrounding soils, which is dependent on both the cable construction and its installation (Iten et al., 2011; Klar et al. 2014; Zhang et al. 2016; Winters et al. 2020).

This paper reports on controlled field experiments designed to assess the use of a newly developed geogrid, integrated with DFOS strain cables during the manufacturing process (referred to as a Sensorgrid), for early warning of localised ground movement. This innovative Sensorgrid was developed in collaboration between Huesker, the Centre for Smart Infrastructure and Construction (CSIC) at the University of Cambridge and Epsimon Ltd. The performance and practical implications of the new sensing solution were explored through real-world trials simulating the type, scale and rate of ground movement that could be experienced by earthworks assets in areas of unmitigated ground movements.

2. Field-scale controlled experiments

2.1 Experimental setup

Two 3 x 3m voids constructed at the HS2 site at Tilehouse Lane Cutting (TLC) to simulate the ground movement from shallow geohazards and explore the behaviour and response of the Sensorgrid against two different types of overburden fills commonly found and used on the South Portal at TLC: stabilised chalk (trial A) and granular fill (trial B). As illustrated in Figure 1, nine heavy-duty water-filled bags were laid in the base of each, with a maximum inflation height of 0.5m. On one end of the pit, concrete modular blocks were used to form a hard edge, simulating the transition between earthwork and structure (e.g. bridge abutment). At the other end a soft edge was formed by using a geogrid and a non-woven wrap-around on compacted fill (Figures 1(a) and (c)). On one side of the pit, four modular blocks could be removed at the end of the trial to inspect the condition and profile of the Sensorgrid. When all the bags were fully inflated, a layer of non-woven geotextile was placed loosely on top of them to support a lightweight expanded clay aggregate (LECA) fill. This was then followed by the installation of the Sensorgrid, and a 500mm layer of overburden fill above the sensing layer.

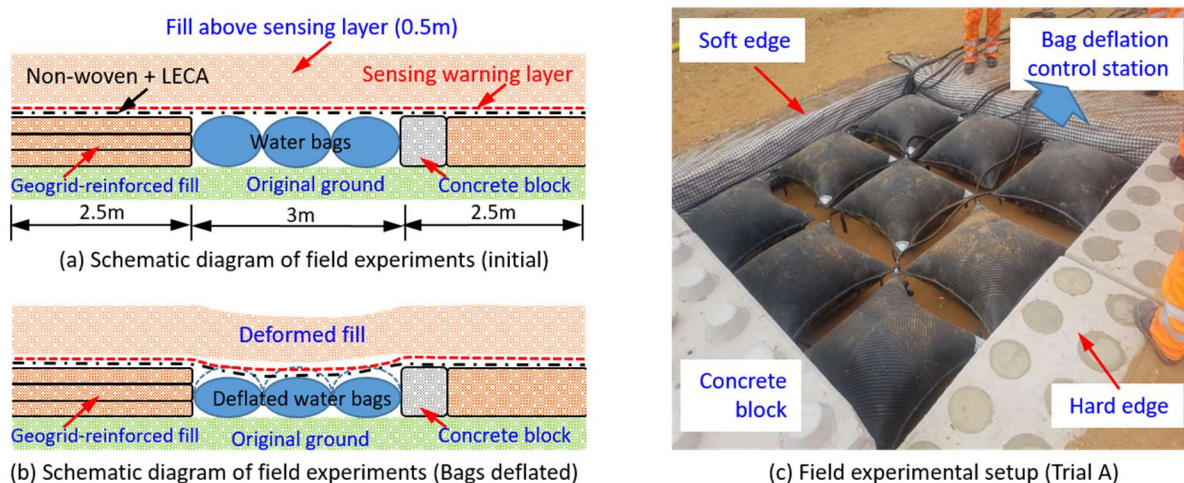


Figure 1: Field simulation of ground movement: (a) Schematic diagram of field experiments at the initial stage; (b) Schematic diagram of field experiments when bags deflated; (c) Field experimental setup (Trial A).

2.2 Field instrumentation

The strain fibre optic (FO) cable integrated into the Sensorgrid used in these two trials was 2.5 mm in diameter and consisted of single-mode optical fibre with a 0.9mm Hytrel coating embedded in an elastic 2.5 mm polyurethane outer sheath. It was knitted into a geogrid by Huesker by substituting it for yarns of similar size. The Sensorgrid used in these two trials was 0.5m wide and carried three individual FO cables, a central fibre, a redundant fibre positioned next to it and an offset fibre.

Prior to the trials, the performance of the Sensorgrid was evaluated through extensive testing at CSIC. In particular, the strain transfer function was evaluated using a bespoke universal testing machine to carry out tensile tests (Figure 2(a)). As illustrated by one of the test results presented in Figure 2(b), the strain transfer function of this very elastic cable showed good linearity, no hysteresis, good repeatability to high strains and high sensitivity (high strain coefficient or gauge factor, which is the slope of the linear relationships shown).

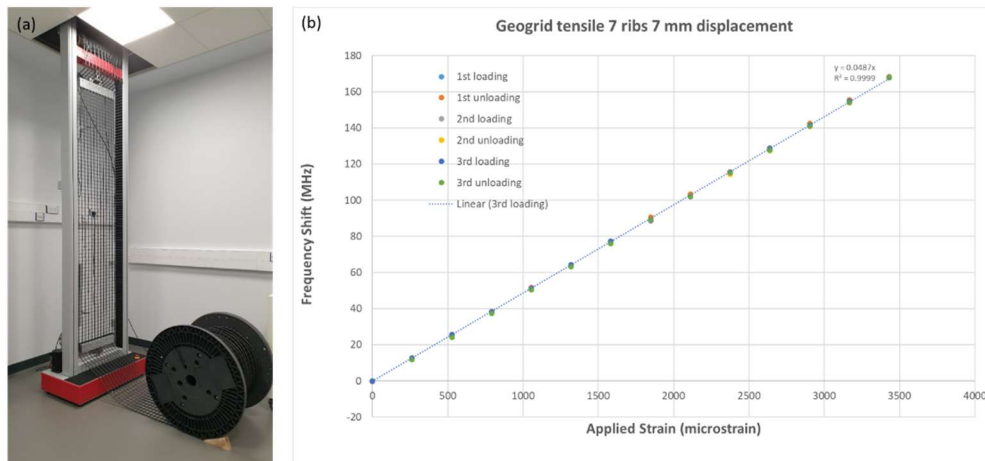


Figure 2: Laboratory tensile tests on the Sensorgrid: (a) Tensile test at CSIC; (b) Testing results.

Figure 3 shows an overview of the field instrumentation set-up. The grid was positioned on top of the bags in a way that the offset fibre was running over the middle of each bag, as illustrated in Figures 3(a) and (b). The anchored length of Sensorgrid was 2.5m on either sides of the pit.

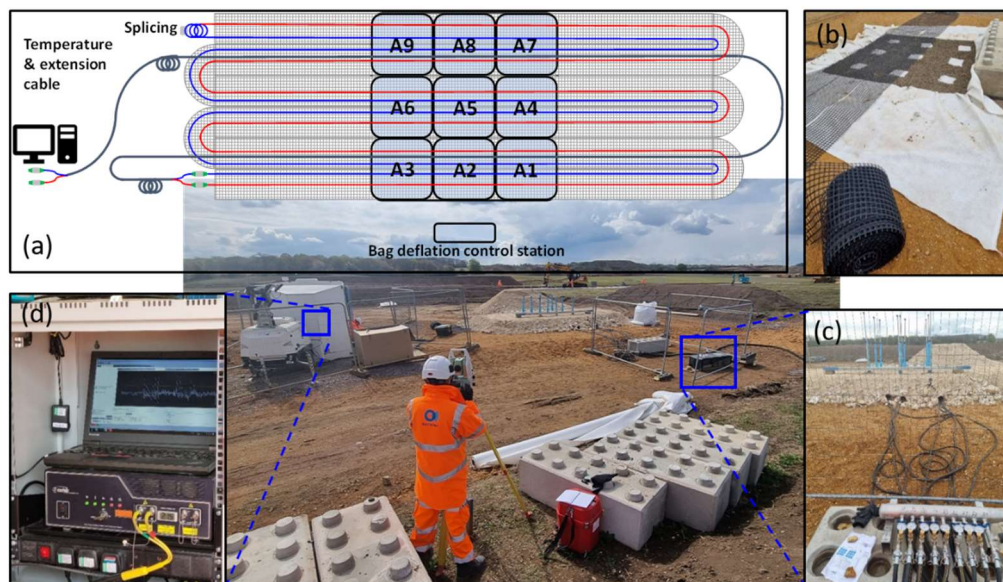


Figure 3: Field experimental setup at trial A: (a) Sensorgrid layout; (b) Sensorgrid installation; (c) Water bag control station; (d) Fibre optic sensing analyser operating in real-time.

A conventional total station monitoring system was employed to capture the displacement on the crown of each bag, created by deflation, as well as the resulting displacement experienced by the Sensorgrid. One circular metallic plate was sitting on the centre of each bag and a second plate was sitting on top of the Sensorgrid above the bags. These two plates were connected to rods and tubes that extended over the overburden fill. Prisms

were attached to the rods and tubes and monitored using a total station, as shown in Figure 3. This allowed the movement of the bags (void) and the geogrid to be recorded in real-time, with an accuracy of $\pm 1\text{mm}$.

To simulate ground movement, water was released from the bags through a control station (as pictured in Figure 2(c)), causing the fill above to move downwards and strain the mesh, which in turn caused a change in the characteristics of the spectrum of the back-scattered light pulsing through the FO sensing cable captured in real-time by a Brillouin Optical Time Domain Analysis (BOTDA) analyser (OZ Optics Ltd, Canada) (Figure 2(d)). After full completion of testing on trial A, the overburden fill, the monitoring tubes and the Sensorgrid were removed to recover the bags from the pit and reuse them for trial B.

3. Results and Observations

3.1 Early warning strain signatures

The strain signature profiles measured in the Sensorgrid at the very early stage of sinkhole formation are illustrated in Figure 4. These represent a change in strain with respect to a baseline measurement taken following the installation and prior to starting the tests. By convention, positive strain change corresponds to an increase in tension while negative strain change represents compression or loss of tension. The strain profiles shown are those obtained with the FO cable centred on the water bags in the row with red numbering, as indicated in the schematic inset in the figures. The grey shading illustrates the bags that have been (grey numbering) or are being (red numbering) deflated at the time of the measurement.

In both trials A and B, the Sensorgrid was sensitive to millimetre scale subsurface vertical settlement (not necessarily the ground surface settlement) over the relatively small spatial scale of 1m (deflated bag width). The strain generated was several times higher than the system's measurement resolution. At this early stage, the strain profile in Trial A exhibited a double-peak shape associated with the central dip across the A2 section and negative strain at the edge of the trial area. The strain profile is wider than that of the deflated water bag as the deformation across A2 generated axial strain in the grid. For Trial B, the strain profile displays a different pattern with a negative strain change in the centre line of the fibre optic trial pit B9, as shown in Figure 4 (b). This artefact is due to the different construction procedures used in Trial B where the soil over the water bags was compacted. This compaction forced the geogrid down in the dips in between the bags, creating tension in the FO cable over the centre of the curved bags. As the bags were deflated this tension was released, resulting in a negative strain change (loss of tension). This would not happen in a site installation when the geogrid is installed over a flat surface. Nevertheless, both trials demonstrate the sensitivity and effectiveness of the Sensorgrid system in detecting relatively small movements over a small spatial scale.

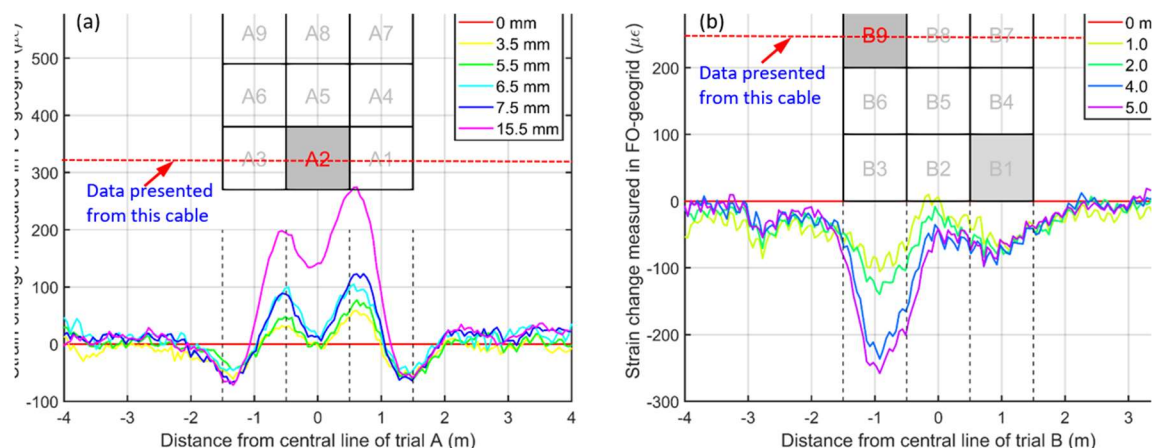


Figure 4: Early warning strain signature profiles: (a) Trial A - deflation of bag A2; (b) Trial B - deflation of bag B9 (following the deflation of B1).

3.2 Strain signatures at large ground deformations

The evolution of the measured strain profiles as sinkholes propagate was investigated by deflating bags in sequence. As displayed in Figure 5(a), the strain profile gradually became wider as the single bag A2 was deflated; i.e. the positive peaks remained around the edges of A2 but strain propagated up to about 1m into the anchorage length on both sides of the trial pit. Similar behaviour was observed in trial B, as shown in Figure 5(b). The

propagation of strain, as the bags were deflated, can also be visualised using contour plots, as highlighted in Figure 5(c) and (d). This type of two-dimensional plot on a larger scale installation is essential to allow for rapidly pinpointing the location of problem areas. Following completion of each trial, the lateral modular blocks were removed for inspection, as shown in Figure 6.

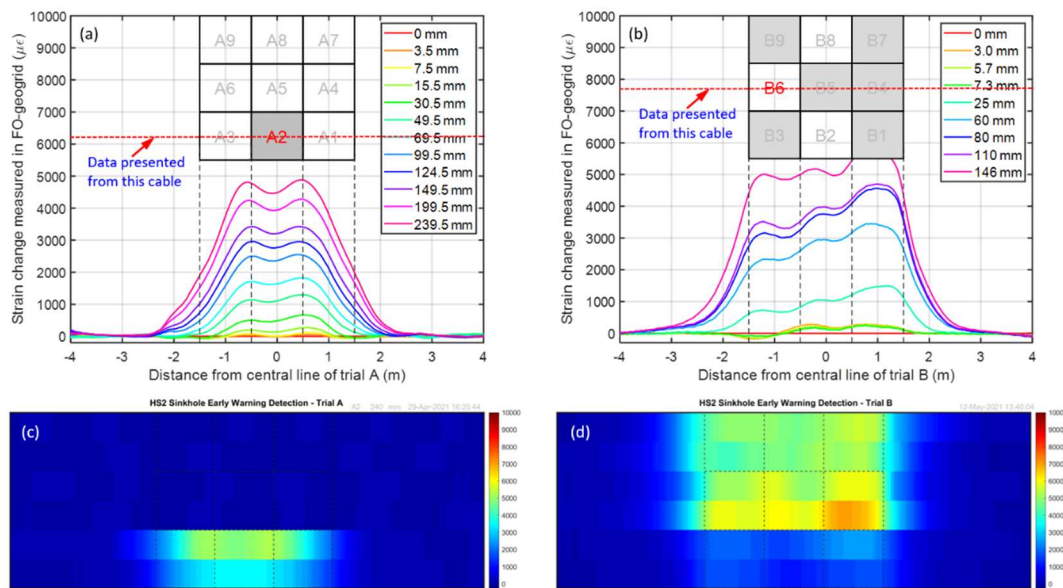


Figure 5: Strain profiles at large ground deformations: (a) Trial A – deflation of bag A2; (b) Trial B - deflation of bag B6 (following the deflation of B1, B9, B3, B7, B5, B4 and B6 in sequence); (c) Strain contour at trial A deflating A2 to 239.5mm; (d) Strain contour at trial B deflating B6 to 146mm.

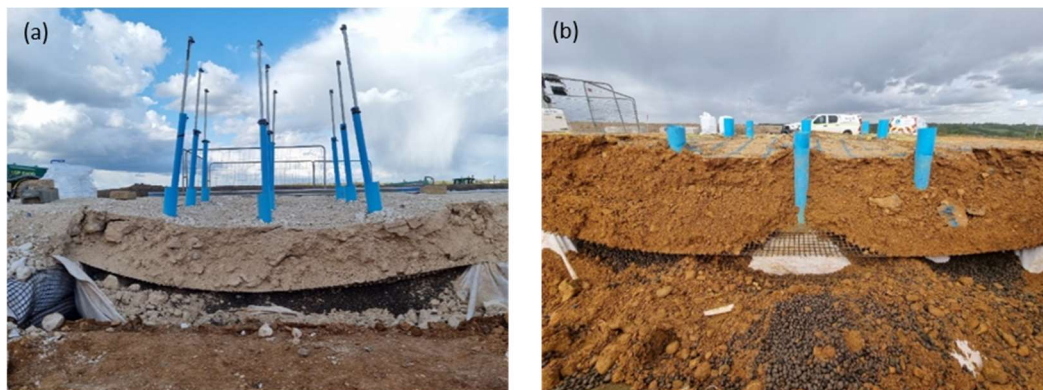


Figure 6: Deformed profiles of Sensorgrid after all bags were fully deflated: (a) Trial A; (b) Trial B.

During the trials, a FO temperature cable was installed above the Sensorgrid to assess potential temperature effects. The largest temperature changes occurred on 29 April 2021 due to sun exposure, with rapid changes and an increase of almost 25°C, which was picked up by part of the cable located outside of the soil. However, in the cable covered by the soil in the trial pit, the changes were not significant and in the order of the precision of the analyser (i.e. ± 1 °C).

4. In-situ durability assessment

Separate tests were conducted in order to assess the robustness of the Sensorgrid used in these preliminary trials, where no significant problems had occurred, under more realistic field conditions representative of the temporary haul road and final pavement construction process at TLC. Two separate Sensorgrid circuits were laid on the ground in a single loop over a length of approximately 50m in order to apply four different treatments: (1) T1 with one protection layer of non-woven geotextile (NW20) above and below the Sensorgrid, (2) T2 with two layers of NW20 above and below the Sensorgrid, (3) T3 with three layers of NW20 above and below the Sensorgrid; (4) T4 with three layers of NW20 above and two layers of NW20 below the Sensorgrid; The non-woven geotextile (NW20) used here had a weight of 235 grams/m², and was the same product used to cover the

water bags in the trial areas. After placing the Sensorgrid and NW20 protections, a series of construction activities were carried out, including placement and levelling of a stabilised chalk fill over the Sensorgrid, and compaction of that fill with eight passes of a 20-tonne vibratory roller. For all treatments, both strain and optical power were measured with a Neubrex NBX-5000 Brillouin Optical Time Domain Reflectometry (BOTDR) analyser all along the FO cables integrated in the Sensorgrid. The data showed that, whereas acceptable localised losses were generated during soil placement, soil levelling and soil compaction resulted in significant losses at several locations along the optical fibres. These were likely due to excessive localised bending in the fibres generated by sharp aggregates, but as the losses are cumulative they eventually exceeded the optical budget available (dynamic range of the analyser), leading to erroneous strain data.

Since the manufacturing of the Sensorgrid by Huesker is realised through a knitting process, different grid designs can be achieved by using FO strain cables of different sizes and stiffness and therefore robustness. As such, a stiffer Sensorgrid (Fortrac® R 220/100-30 GSGTA) was produced with a much more robust cable for the larger scale ground movement monitoring scheme deployed at TLC, as described below.

5. Large-scale trial of ground movement monitoring at Tilehouse Lane Cutting

TLC is approximately 710m long in total and up to 11m deep, and it connects the North Approach Embankment and Colne Valley Viaduct to the south-east with the West Hyde embankment and the 10.6 mile-long twin-bore Chiltern Tunnel passing under the M25 to the north-west, as indicated in Figure 7. The ground investigation (48 CPTs) and cutting excavation has revealed dissolution features ranging from 0.5 to 2m in diameter to be present along the cutting (Figure 7(a)). The condition of the infill material varies, and voids are occasionally present. Engineered mitigation has been constructed at these locations and a geogrid-reinforced mattress will also be installed over the area. This has provided the opportunity to prove the viability of the technology in a live construction environment and 5m-wide Sensorgrid with FO strain sensing cables at a 0.5m spacing is being deployed to monitor potential ground movement beneath a 100m-long, 10m-wide stretch of the mainline alignment on the HS2 site at TLC.

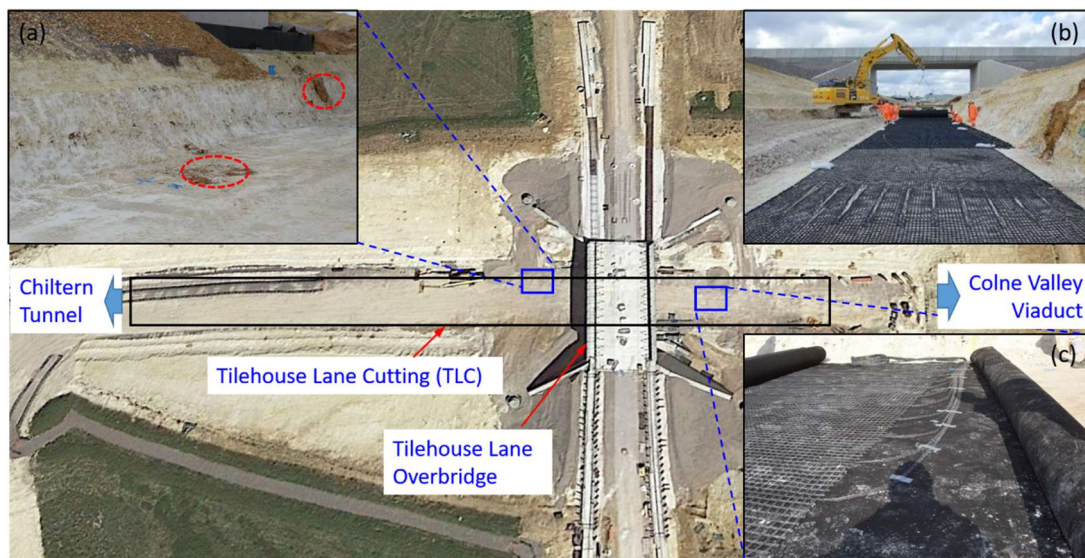


Figure 7: Large-scale monitoring of ground movement at Tilehouse Lane Cutting (TLC): (a) Solution features at TLC (as circled); (b) Field deployment of Sensorgrid; (c) Sensorgrid in-situ.

To protect against construction damage, the Sensorgrid is sandwiched between layers of Non-woven geotextile (HPS14) (Figure 7 (b) and (c)). Above this is a layer of geogrid Fortrac 600 MDT forming the base of the reinforced mattress, overlain by chalk mixed with 2% cement. Strain will be monitored continuously along the Sensorgrid for two years during the construction of HS2. This represents 10,000 monitoring points over 1000m². Temperature cables are also being embedded with the Sensorgrid to assess any (unexpected) temperature effect. The data acquired from the FO cables will be automatically processed and displayed in real-time on a web-based visualisation dashboard developed by Epsimon Ltd. This will enable the project engineers to detect any incipient ground movement, enabling them to take timely preventative action if necessary.

6. Conclusions

Controlled field experiments were performed to explore the performance of a newly developed DFOS instrumented geogrid (Sensorgrid) for ground movement detection. Water-filled bags were placed in the ground and deflated in a pre-determined sequences to replicate vertical ground movements which demonstrated the sensitivity and effectiveness of the Sensorgrid system as an early warning detection solution for local ground movements beneath earthworks. The Sensorgrid sensing system is sensitive to millimetre scale vertical settlement at depth. It is also sensitive to settlement at the sub-metre spatial scale. For large ground movements, the Sensorgrid is likely to experience large strains but, in the trials, these did not exceed the capacity of the system (both in terms of tensile strength and measurement range/limit).

As shown by the trial results, the current Sensorgrid configuration is highly sensitive to strain and can detect very small vertical displacement. Its low stiffness is likely to lead to good strain transfer in soils, which also makes it ideal for application where horizontal movement and axial strain occurs, such as for slope movements and embankment retaining walls. For applications in harsh construction environments, the Sensorgrid design is highly configurable and it can be integrated with more robust strain cables as required.

Developing a capability for early detection of ground movement which leads to appropriate preventative or precautionary measures could prove a valuable tool for the maintenance of infrastructure earthworks. These technologies may become more valuable in future because of the increasing frequency of extreme weather events and their potentially adverse impact on ground conditions and earthwork assets.

Acknowledgements

The authors are grateful to HS2 Innovation for funding and supporting this work. They are thankful to Roadbridge Ltd, SOCOTEC UK Ltd and Mr Kyriakos Kaskiris (formerly at Jacobs UK Ltd) for their support with field construction and Sensorgrid deployment. The authors would also like to thank CSIC (EPSRC (EP/N021614/1) and Innovate UK (920035)) for supporting this research.

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Ground conditions

Promoter's response

On 3rd March 2023 the Promoter published a report entitled "Crewe to Manchester - Understanding the Ground Risk across the Cheshire Plain".

The March Report can be viewed at the following link: [HS2 Phase 2b Select Committee: Crewe to Manchester - Understanding the Ground Risk across the Cheshire Plain - GOV.UK \(www.gov.uk\)](https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/114444/HS2_Phase_2b_Select_Committee_Crewe_to_Manchester_-_Understanding_the_Ground_Risk_across_the_Cheshire_Plain.pdf)

The March Report provides a review of the ground conditions, the associated risks, and the mitigation measures for the Crewe to Manchester Proposed Scheme.

HS2

Crewe to Manchester

Understanding the Ground Risk across the Cheshire Plain

3rd March 2023

Overview of the March Report

Ground conditions

The alignment of the Proposed Scheme passes across the Cheshire Plain in areas of former salt mining and other areas where salt mining is ongoing. The March Report addresses geological concerns in this area and sets out:

- HS2 Ltd's understanding and interpretation of the existing ground conditions;
- How the route alignment and developed design has taken account of those ground conditions; and
- How HS2 Ltd plans to gather further information, develop the design, construct, and operate the Proposed Scheme.

Based on interpretation of information obtained to date and the derived engineering approach, HS2 Ltd, in conjunction with its designers and technical advisors, considers that the route alignment is appropriate for the intended purpose, and that geological challenges can be both managed and mitigated during detailed design and construction so as to provide a safe operational railway.

Conclusion of the March Report

Ground conditions

The scale of the ground related challenges and their solutions are commensurate with the purpose of the Proposed Scheme as key national infrastructure, and comparable to the scale of other ground related challenges that can be encountered in the operation of other high-speed railways.

The Proposed Scheme has been designed with sufficient inbuilt resilience, along with practical measures for routine maintenance and adaptive design, which can be put in place in achievable timeframes, to mitigate against climate change during operation.

Route Alignment

Ground conditions

The Proposed Scheme was selected to minimise the risks posed by ground conditions in the Cheshire plain. In particular, the route selected:

- Avoids major areas of former high subsidence as marked by flashes, with the one exception of Billinge Flash;
- Avoids a line of Meres that broadly align southeast of Rostherne Mere;
- Avoids areas of ground subsidence such as those which the Cheshire Brine Compensation Board defines as requiring statutory consultation in relation to any new development;
- Does not pass within 2 km of any known former locations of historical wild brine well pumping sites, with one possible exception, a suspected brine well in the vicinity of Clive Green Lane;
- Avoids clusters of subsidence features as historically mapped by BGS;
- Avoids historical and controlled salt mines, whether remediated or not, with the exception of Winsford Rock Salt mine; and
- Avoids existing brining extraction and gas storage caverns, passing just west and northwest of Warmingham and Holford brinefields respectively.

It is not possible to select a route which avoids entirely all possible sources of risk posed by the ground conditions.

Design response

General risk mitigation by design

The Proposed Scheme has been designed to account for the risks posed by ground conditions in the Cheshire plain as outlined below.

Adapted precautionary mitigation measures are proposed against the risk of subsidence, which are typical for the construction of infrastructure in these types of ground condition, or for high-speed rail systems in general including:

- The viaducts will be supported by piers on piled foundations because of the potentially relatively low strength of the near-surface soils. The piles can be lengthened into more stable ground.
- Surface rainwater run-off from embankments, and viaducts to be collected by lined drainage systems and held temporarily in lined balancing ponds, before discharge to river courses. Rainwater not concentrated and not percolating through the ground to give rise to the risk of salt dissolution.
- The track forms can have built in design features to allow for corrections of vertical rail geometry in operation.
- Differential settlements arising from the ground can be addressed through the design and routine maintenance aspects of the track form.

Design response

General risk mitigation by design of vertical horizontal and vertical alignment

The selection of structural infrastructure including viaducts and bridges is driven by the need to cross over existing natural features such as rivers and existing major infrastructure. The viaducts are sufficiently high so as to provide necessary headroom. This infrastructure will be designed to account for the risks posed by ground conditions.

Where the Proposed Scheme continues north and has passed beyond the area of wet rockhead, long cuttings can be incorporated without risk of salt dissolution. At Hoo Green Lane and Rostherne the design has lowered the alignment to pass under the A556 and M56.

Design response

Site Specific Risk Mitigation Design

Solutions are proposed at Clive Green Lane and Billinge Flash. The final choice of mitigation solution will be based on interpretation of further ground investigation.

Winsford Rock Salt mine - viaduct structures and embankment are proposed. The piles of the viaduct structures will not reach the wet rockhead level, nor any of the salt layers. The mine is not materially impacted by the Proposed Scheme.

Construction Stage Response

The draft CoCP references measures to be implemented which include undertaking ground investigation, risk assessments, monitoring of ground movement, groundwater and ground gas.

Ground movement will be monitored using a master network of positional and level datums which would be tied into national level bedrock datums. INSAR and LiDAR surveys would be used during the construction stage to monitor ground movements in direct response to construction stage activities.

Operational Stage Response

Risk mitigating measures by adaptive interventions

Operation and maintenance of the railway will make use of digital information and monitoring techniques to detect:

- ground movements from the legacy effects of former salt brining activity
- salt dissolution from climate change impacts.

Due to the transient nature of ground surface settlements, the operational safety of the railway will need solutions which are able to make corrections for settlements which are outside of expectation.

Adaptive measures can include provisions for track raising, OCS raising, bridge deck raising, and interventions to the foundations, and future 'new technology' that will occur during the 120 year lifetime of the railway.

The monitoring data will allow early decisions on the application of the adaptive design elements accommodated for, or built into the infrastructure, and hence avoid unnecessary interruptions to operations.

Ground investigation works

Ground conditions

Under the process of desktop study, a significant amount of data gathering has been undertaken to inform the Proposed Scheme design with specific reference to the geology, hydrogeology and ground conditions.

HS2 Ltd has carried out detailed reviews of published data sources and a series of consultations with mining companies operational within the area so as to establish the ground conditions in the area.

Subsequently, advanced ground investigations were undertaken at targeted locations in 2020 and 2021. The data from these investigations has been used to reinforce the understanding from the desktop study, refine risk assessments, and will contribute to informing the detailed design development.

Further ground investigations will be carried out as the Proposed Scheme is taken forward.

Alternative alignment following the M6

Ground conditions

The proposed route via Crewe with a connection with the WCML near Crewe provides greater strategic benefit including connectivity to northwest England (including Chester, Liverpool and Warrington) and north Wales. This route also performs more favourably from a sustainability perspective compared with the other alternative routes including the M6 corridor, as it will require fewer demolitions and will be further away from a number of settlements across the Cheshire plain.

Routes following the M6 corridor would have similar impacts and geological challenges associated with passing over the Cheshire plain but would require a less favourable location for the junction of the HS2 WCML connection and the HS2 Manchester spur.

The decision to serve Crewe was confirmed by the Secretary of State in 2015. Neither of the alternative corridors (via the M6 or Airport) would serve Crewe.

Community relations

Information Paper G2

Explains the approach to community engagement, identifying the relevant documents, standards and controls that will apply during construction of the Proposed Scheme. Includes details of:

Community engagement strategy - how we will respect people and places as we build HS2.

Community engagement framework - how proactive and reactive engagement activity will be delivered during construction.

Residents' commissioner - The independent Residents' Commissioner oversees and monitors HS2's commitments to the public

Construction commissioner - An independent role to mediate and monitor the way in which the nominated undertaker manages and responds to construction complaints.

HS2

Phase 2b Western Leg Information Paper G2: Community relations

This paper outlines the approach to community engagement to be taken by the nominated undertaker during construction of the Proposed Scheme.

It will be of particular interest to those potentially affected by the Government's proposals for high speed rail.

This paper was prepared in relation to the promotion of the High Speed Rail (Crewe - Manchester) Bill. Content will be maintained and updated as considered appropriate during the passage of the Bill.

If you have any queries about this paper or about how it might apply to you, please contact the HS2 Helpdesk in the first instance.

The Helpdesk can be contacted:

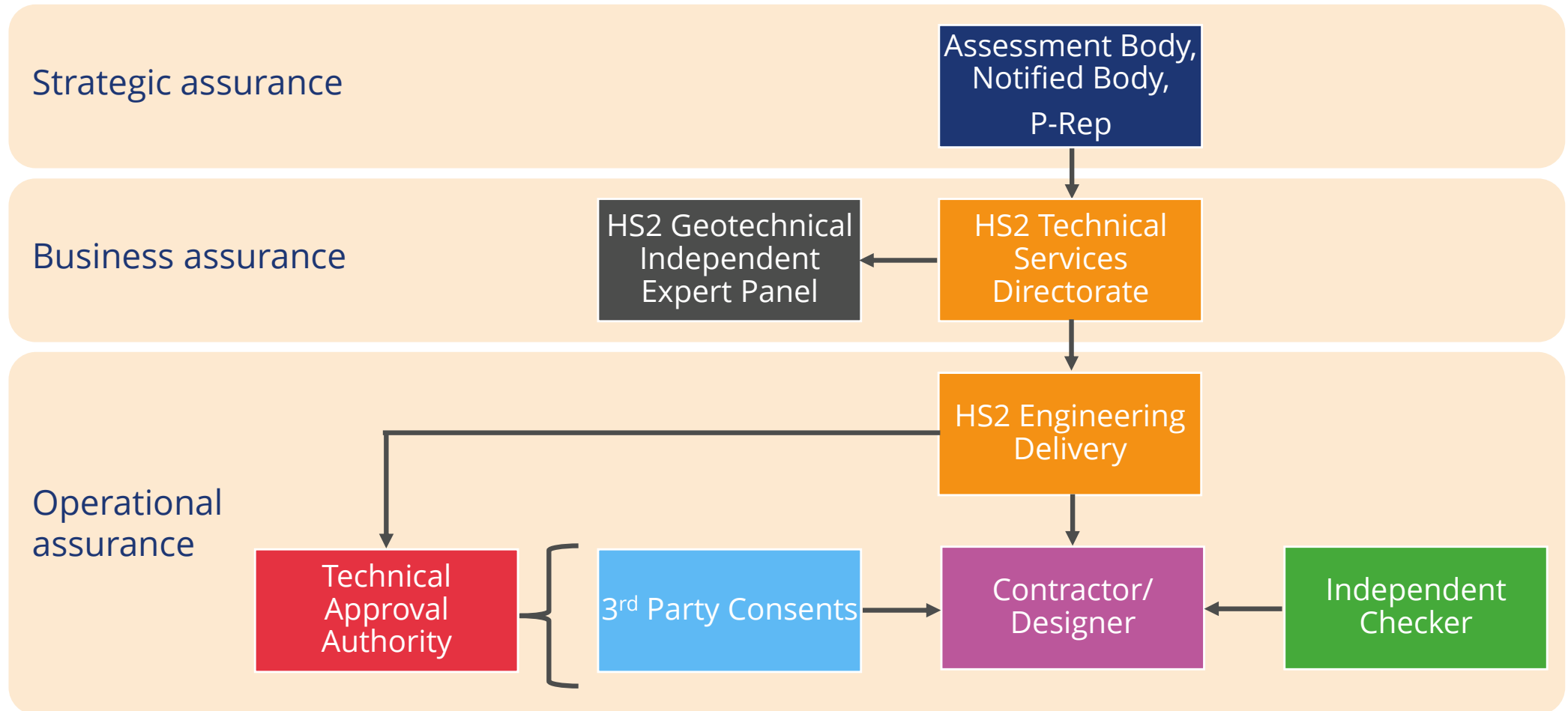
by email: HS2enquiries@hs2.org.uk

by phone (24hrs): 08081 434 434
08081 456 472 (minicom)

or by post: High Speed Two (HS2) Limited
2 Snowhill, Queensway
Birmingham
B4 6GA

Version 2
Last updated: 6 July 2022

Technical Assurance



Each colour represents a different organisation. Not all components of assurance shown, for clarity.

Flood risk and authorisation of related works

Surface water, ground water and flooding

Flood risk from multiple sources of flooding (i.e. fluvial, surface water, groundwater, artificial sources) has been considered within the Flood risk assessment appended to the main ES (Volume 5, Appendix WR-005-0MA01, WR-005-0MA02 and WR-005-0MA03) including climate change.

Protective provisions, included at Part 4 of Schedule 32 to the Bill, require approval for details of works likely to affect flood risk, water quality, or groundwater by the 60 appropriate body, prior to undertaking works.

In relation to surface water the appropriate body for approval is explained at section 10 of HS2 Phase 2b Western Leg Information Paper E15: Water Resources, Flood Risk and Authorisation of Related Works.

The appropriate body for approval in relation to groundwater in England is the Environment Agency. Therefore, no works affecting groundwater or surface water could be undertaken until the appropriate body is satisfied that the impacts from both construction and operation of the works are properly understood and that any mitigation and monitoring is adequate.

Viaducts & Embankments

Viaducts are required to cross existing features in the landscape.

An embankment could allow the proposed railway to sit at a lower elevation in the landscape compared with a viaduct.

A low embankment is easier to screen compared with a higher viaduct.

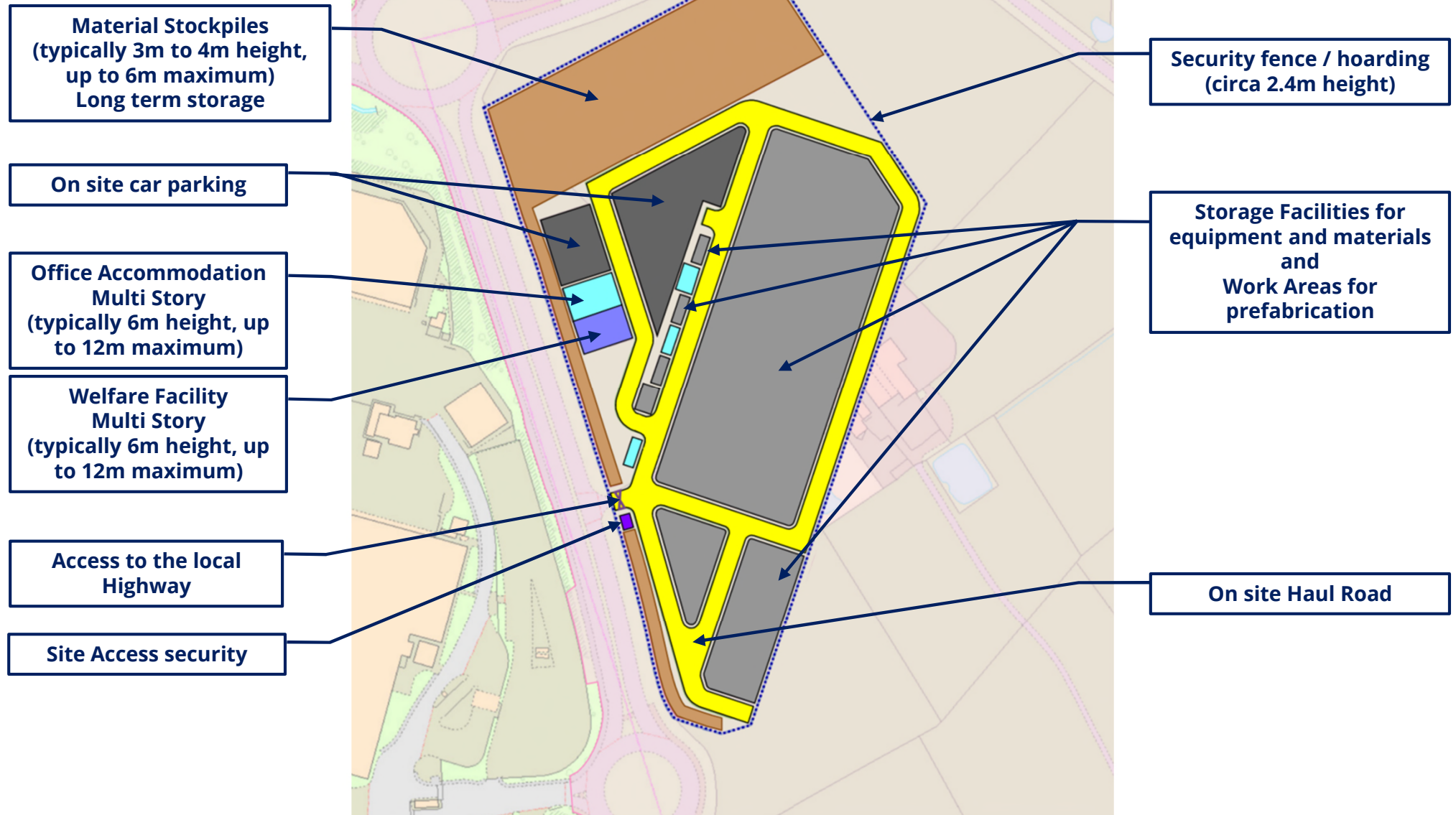
Embankments can spread the load of proposed railway more easily.

Viaducts typically have a higher capital cost than a similar embankment.

Construction of viaducts typically requires greater use of concrete, in turn increasing the Proposed Scheme's carbon footprint.

Gad Brook Viaduct North – Satellite Compound Layout

Indicative Layout



Highway works and construction traffic routes

A556 Chester Road and A559 Manchester Road temporary realignment

During construction of the Smoker Brook viaduct, it will be necessary to temporarily realign the A556 Chester Road at its junction with the A559 Manchester Road 22m north of its existing alignment over a distance of 240m to allow construction of the viaduct piers and deck.

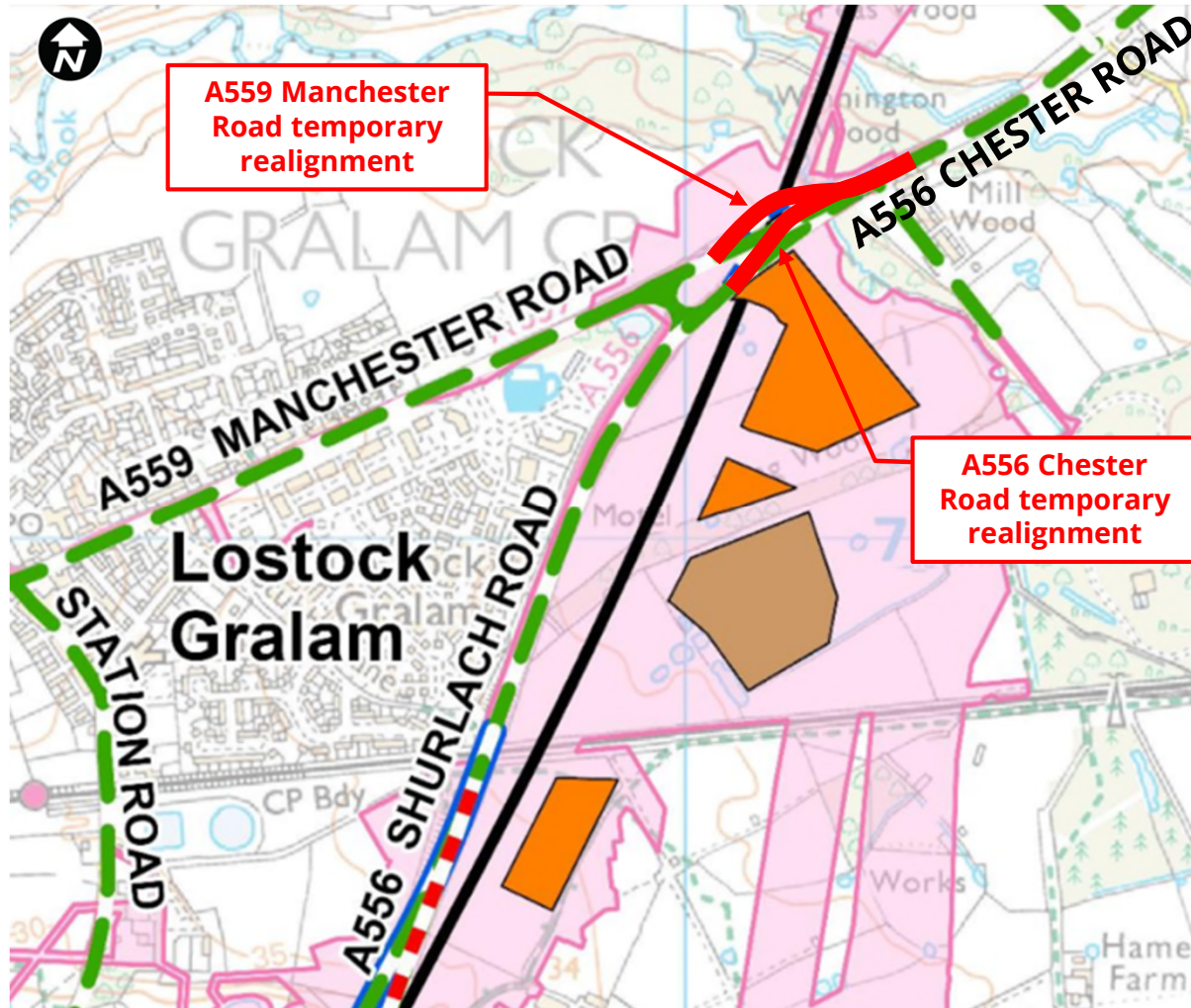
The temporary realignment will be in use from Q2 2028 to Q3 2029 and will result in a negligible change in journey length.

The temporary realignments will be constructed off-line, with the existing alignments of A556 Chester Road and A559 Manchester Road remaining open to traffic.

Once the viaduct works are complete in this area, the current road layout will be reinstated.

Highway works and construction traffic routes

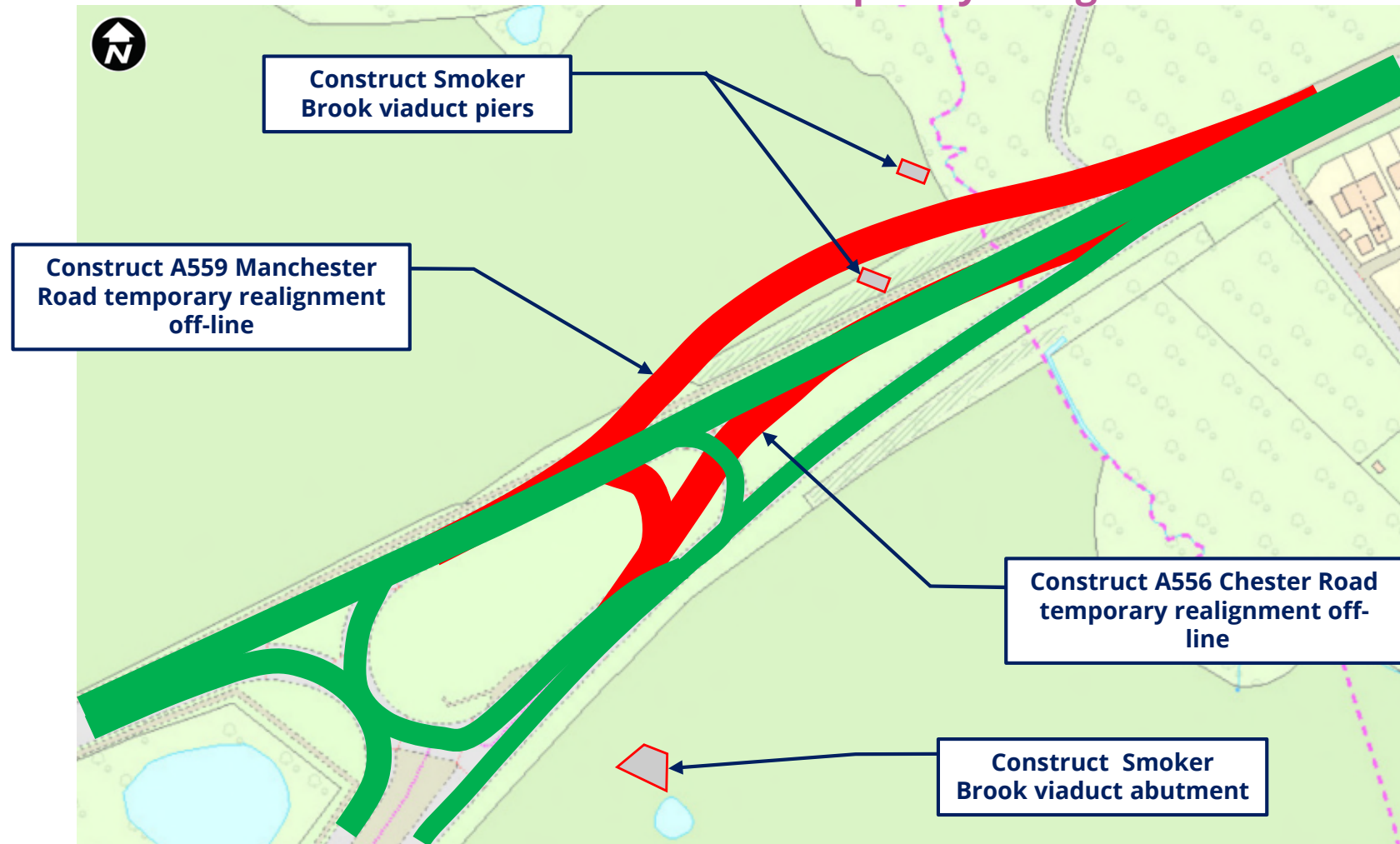
A556 Chester Road and A559 Manchester Road temporary realignment



The A556 Chester Road and A559 Manchester Road temporary realignments would be constructed 'off-line'. No long term signed traffic diversion routes would be necessary.

Highway works and construction traffic routes

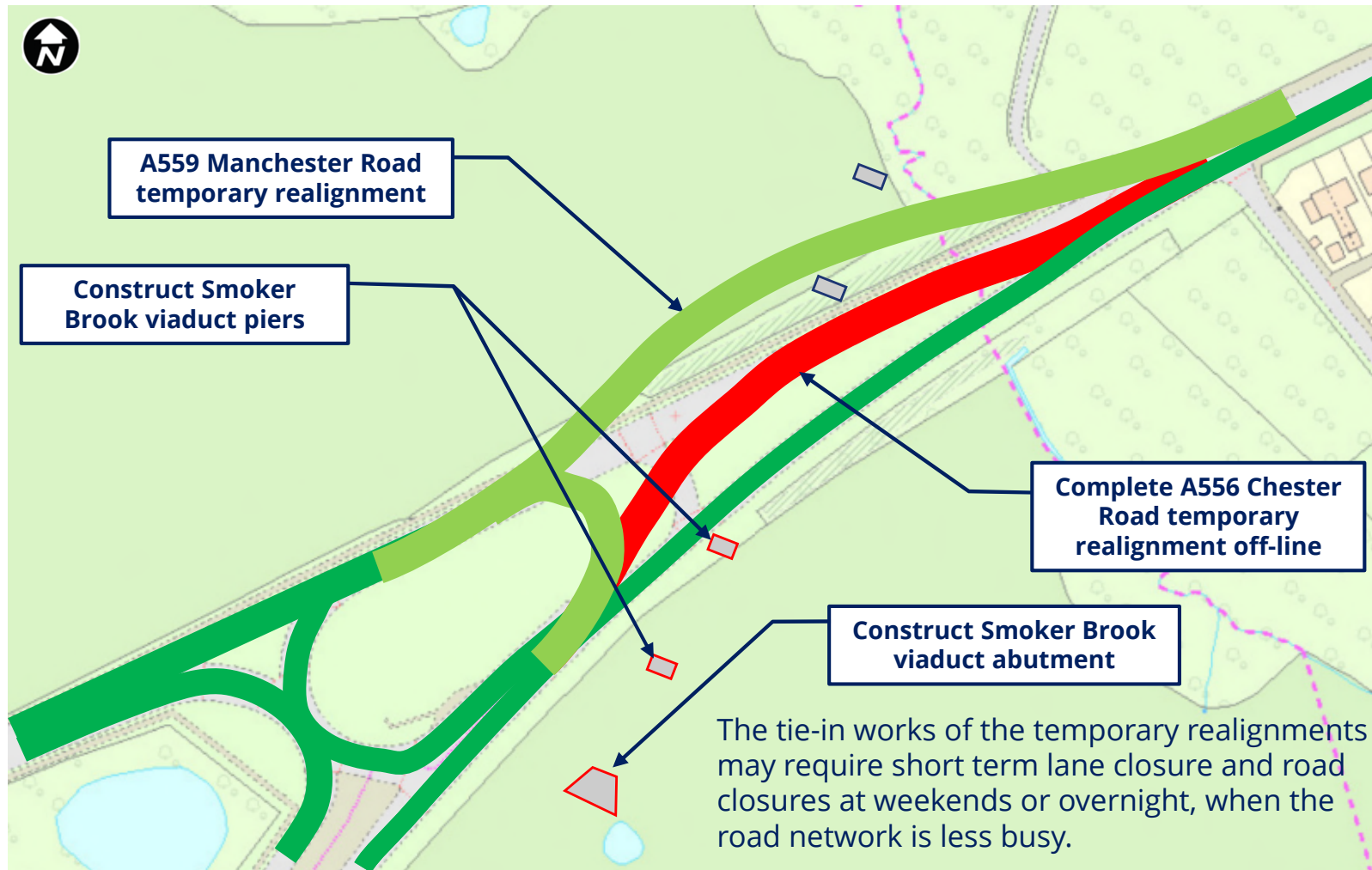
A556 Chester Road and A559 Manchester Road temporary realignment



During the A556 Chester Road and A559 Manchester Road temporary realignments off-line construction works, the existing alignment of A556 Chester Road and A559 Manchester will remain open to traffic (**April 2028 to March 2029**).

Highway works and construction traffic routes

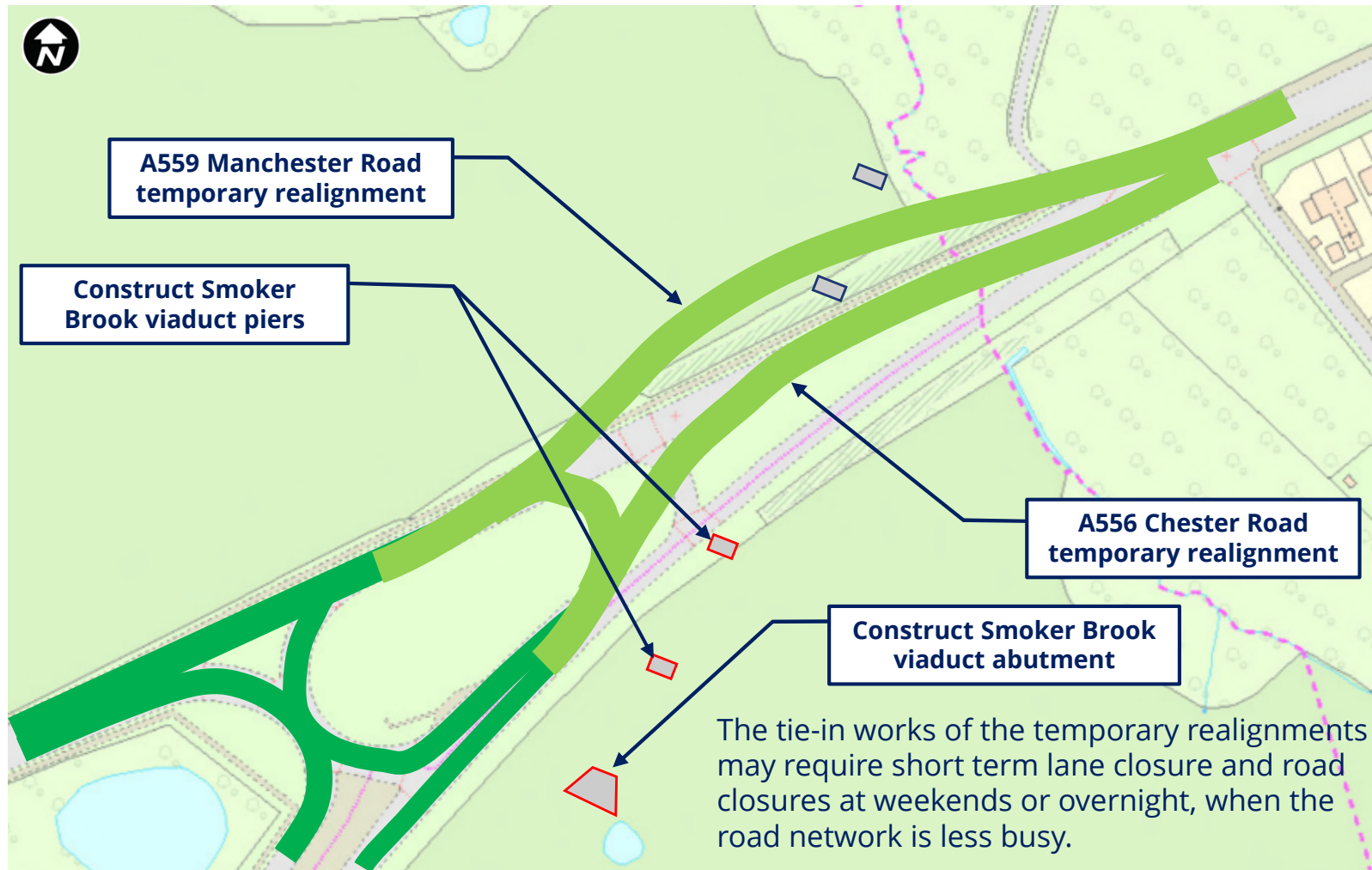
A556 Chester Road and A559 Manchester Road temporary realignment



Traffic management would be required to construct the tie-in of the A559 Manchester Road temporary realignment at its interface with the existing road network (**early April 2029**).

Highway works and construction traffic routes

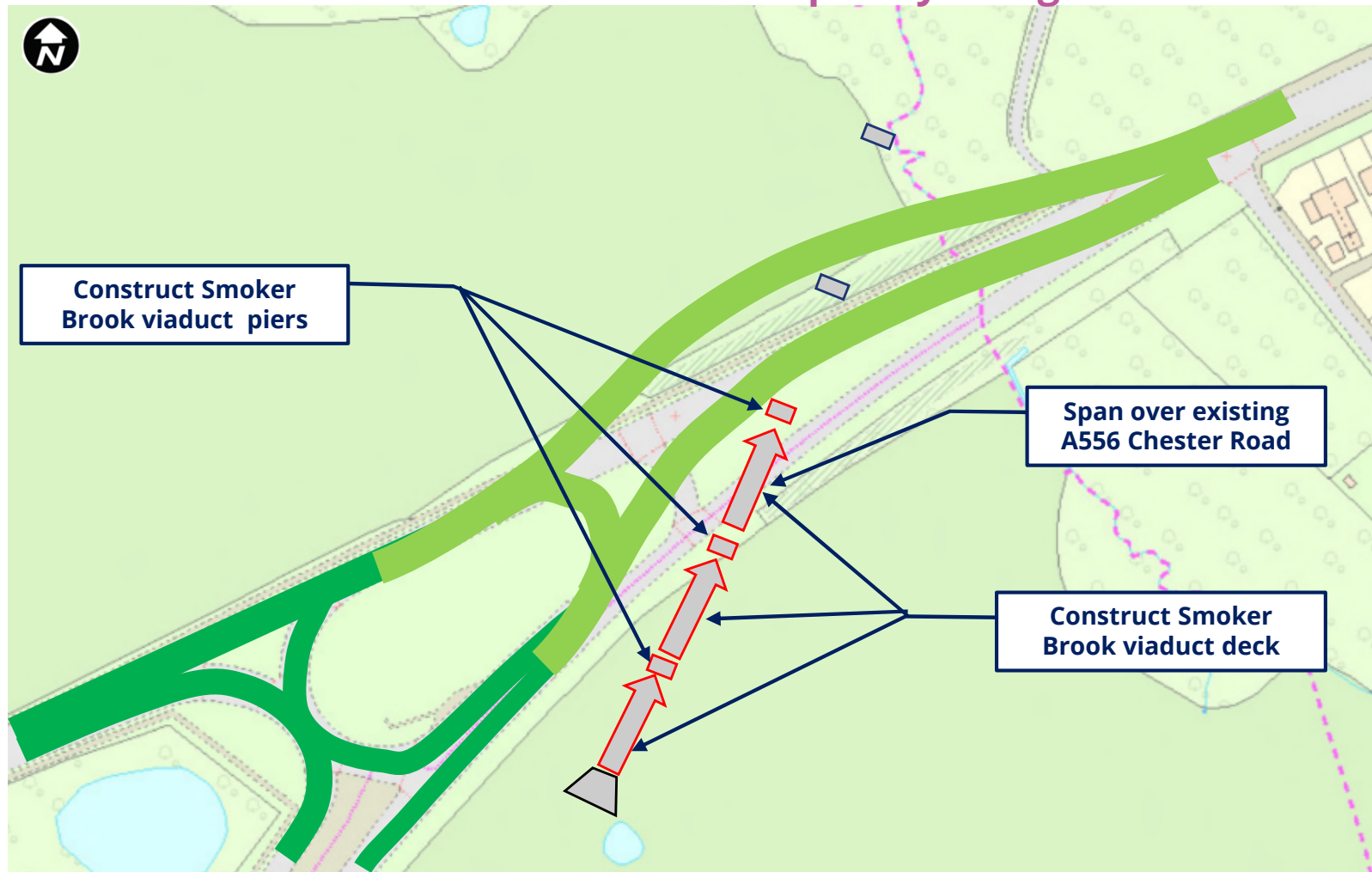
A556 Chester Road and A559 Manchester Road temporary realignment



Traffic management would be required to construct the tie-in of the A556 Chester Road temporary realignment at its interfaces with the existing road network (**late April 2029**).

Highway works and construction traffic routes

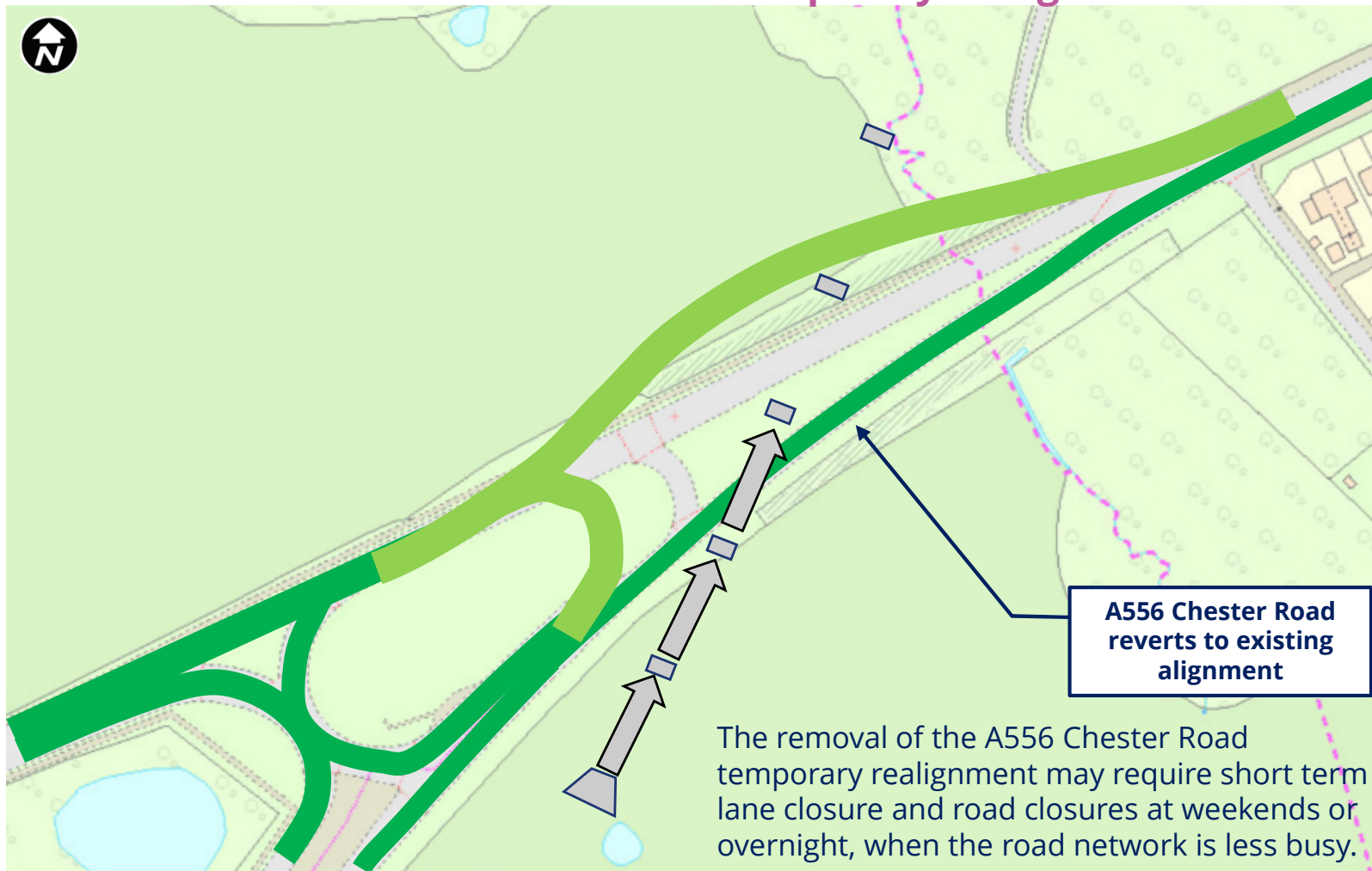
A556 Chester Road and A559 Manchester Road temporary realignment



The A556 Chester Road and A559 Manchester Road temporary realignments would be open to traffic during the construction of the Smoker Brook viaduct sections over the existing A556 Chester Road **(May 2029 to June 2029)**.

Highway works and construction traffic routes

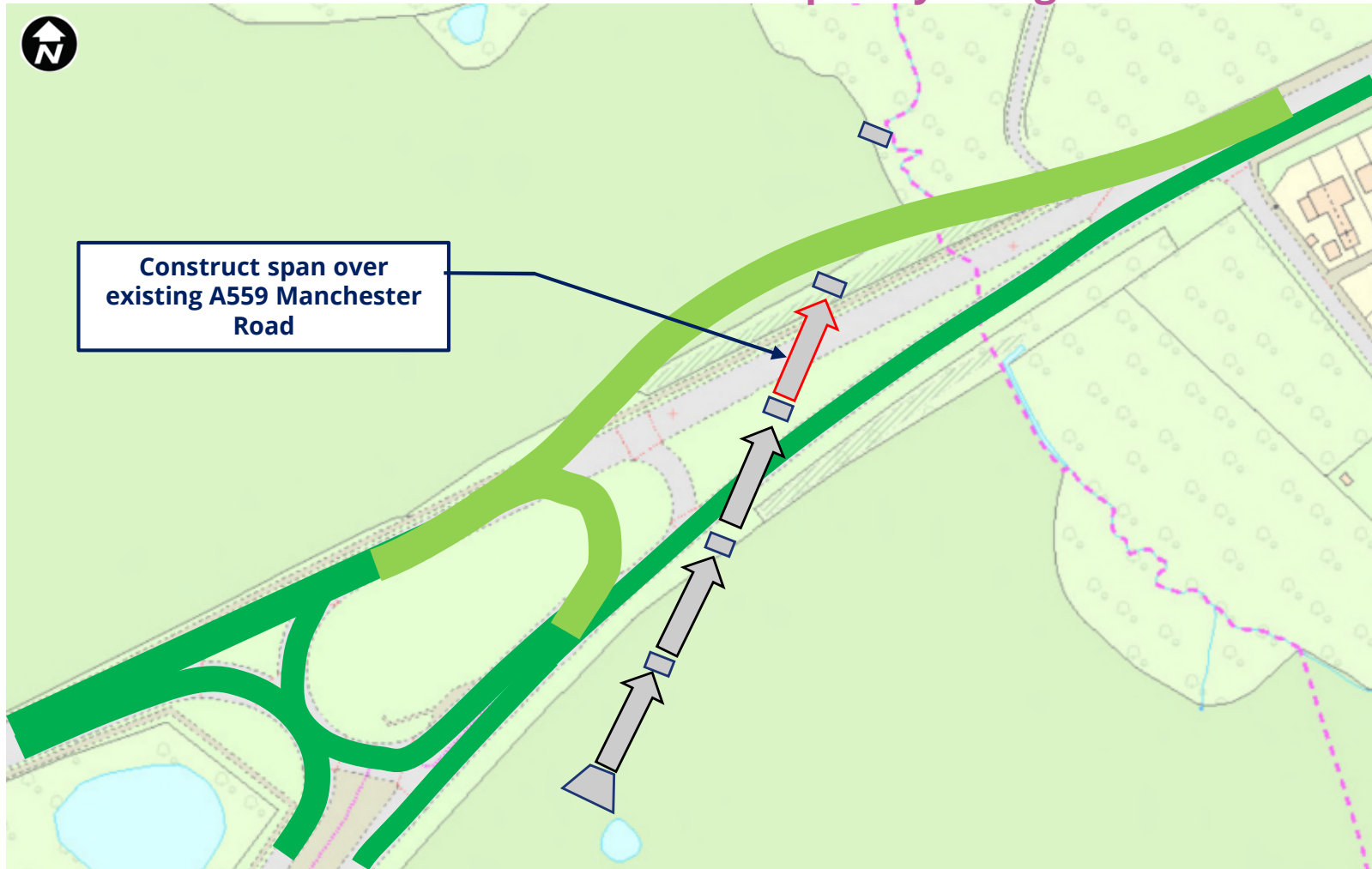
A556 Chester Road and A559 Manchester Road temporary realignment



Traffic management would be required to remove the A556 Chester Road temporary realignment at the interface with the existing road network and return traffic onto the original alignment (**early July 2029**).

Highway works and construction traffic routes

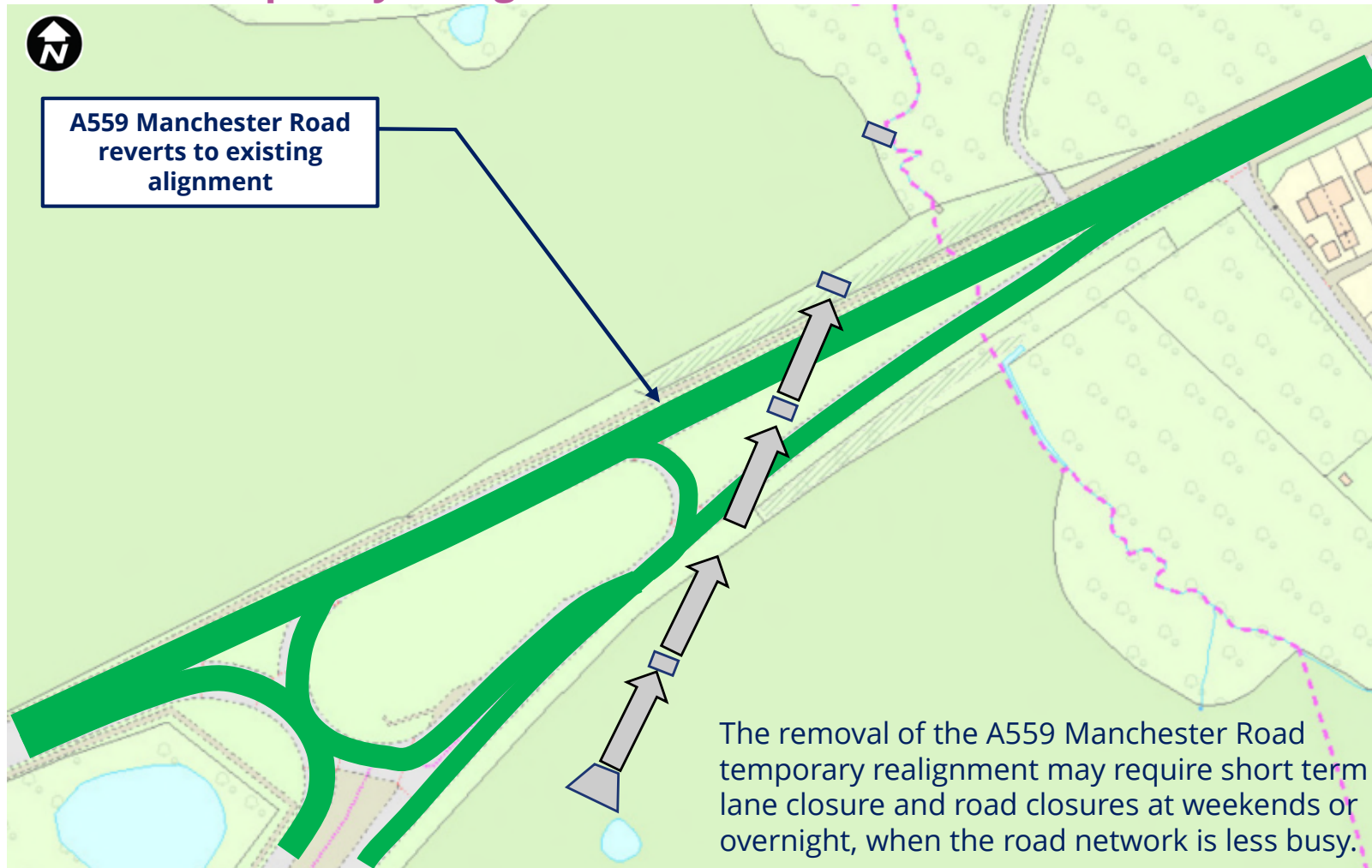
A556 Chester Road and A559 Manchester Road temporary realignment



The A556 Chester Road and A559 Manchester Road temporary realignment would be open to traffic during the construction of the Smoker Brook viaduct sections over the existing A559 Chester Road (**late July 2029**).

Highway works and construction traffic routes

A556 Chester Road temporary realignment



Traffic management would be required to remove the A559 Manchester Road temporary realignment at the interface with the existing road network and return traffic onto the original alignment (**August 2029**).

House of Commons

High Speed Rail (Crewe - Manchester) Bill

1. Petitioner information

In the box below, give the name and address of each individual, business or organisation submitting the petition.

Mrs Lyndsey Sandison
Lach Dennis Parish Council Clerk & Responsible Finance Officer
6 Houghton Close
Northwich
Cheshire
CW9 8NW

In the box below, give a description of the petitioners. For example, "We are the owners/tenants of the addresses above"; "My company has offices at the address above"; "Our organisation represents the interests of..."; "We are the parish council of...".

We are the Parish Council of Lach Dennis representing the inhabitants of Lostock Green and Lach Dennis and the scattered properties and farms.

Please note that [HS2*] is an abbreviation for Select Committee / Government /Department for Transport / HS2 Ltd

2. Objections to the Bill

In the box below, write your objections to the Bill and why your property or other interests are **directly and specially affected**. Please number each paragraph.

Only objections outlined in this petition can be presented when giving evidence to the Committee. You will not be entitled to be heard by the Committee on new matters not included in your written petition.

3. Objections to the Bill and 4. What do you want to be done in response?

LACH DENNIS PARISH COUNCIL OBJECTIONS TO THE BILL AND WHAT TO BE DONE IN RESPONSE?

Shown in blue: quotes and phrases from the High Speed Rail (Crewe to Manchester) Hybrid Bill January 2022 Environmental Statement.

Please note that [HS2*] is an abbreviation for Select Committee / Government /Department for Transport / HS2 Ltd

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3.1 GENERAL

3.2 COMMUNITY

3.3. ROADS, PUBLIC RIGHTS OF WAY, TRAFFIC, TRANSPORT

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3.5. VISUAL, NOISE IMPACTS

3.6. POOR GROUND CONDITIONS

3.7. SURFACE WATER, GROUND WATER, FLOODING

3.8. INDUSTRY

3.1. GENERAL

Lach Dennis Parish Council want HS2* to undertake regular monthly meetings with Lach Dennis Parish Council during the construction of the HS2 Phase 2b high speed rail infrastructure scheme.

3.2. COMMUNITY

3.2.1. Lach Dennis Parish Council concludes from the statements and information presented in the High-Speed Rail (Crewe to Manchester) Environmental Statement that HS2*

Please note that [HS2*] is an abbreviation for Select Committee / Government /Department for Transport / HS2 Ltd

explicitly undertake to address, record and mitigate *'the likely significant effects ...'* of the construction and operation of the HS2 Phase 2b high speed rail route on the residents of Lostock Green.

3.2.2. **[OBJECTION]** The construction and operation of the HS2 Phase 2b high speed rail infrastructure scheme leaves a lasting adverse legacy on the *'Social capital'*, wellbeing and connectivity to vital community services, social and retail venues and public transport for the communities, businesses and industries of within Lach Dennis parish boundary.

3.2.3. **[OBJECTION]** Currently the sale of properties to Government / Department for Transport / HS2 Ltd is already having an adverse effect on the community vitality and *'social capital'* of Lostock Green, both north and south of the existing A556 Shurlach Road as result of:

- loss of occupied properties
- loss of residents
- loss of friendships
- some properties left vacant for years
- some properties with short tenure and temporary residents

3.2.4. **[OBJECTION]** The Environmental Statement does not address the impact of community isolation and well-being as a direct consequence of the proposed high speed rail scheme, HS2 Phase 2b on the two villages of Lostock Green, Lach Dennis and the scattered properties and farms. Both the impact on community isolation and well-being from the temporary adverse effects during construction and permanent impact residual adverse effects from operation of the HS2 Phase 2b high speed rail infrastructure.

3.2.5. **[OBJECTION]** Lostock Green village in particular is significantly affected by the HS2 Phase 2b high speed rail infrastructure. Lostock Green is a community of c. 150 properties and over 300 residents which extends either side of the A556 Shurlach Road and the proposed route of the HS2 2b high speed rail line. Lostock Green is split into two parts by the A556 Shurlach Road - Lostock Green north-west and Lostock Green south-east.

3.2.6. Lostock Green is not separated from Lostock Gralam by the A556 Shurlach Road as described in in the Environmental Statement: *'To the south, Lostock Green has approximately 100 residential properties, separated from Lostock Gralam by the A556 Shurlach Road and the Northwich to Knutsford Line'*.

3.2.7. Lostock Green does not have *'a range of community resources'*. The only publicly available community facility in the south-eastern part of Lostock Green village is Broadfield Play Area in Birches Lane (south).

3.2.8. **[OBJECTION]** The publicly available community facility of Lostock Gralam Railway station on the Manchester Chester Mid Cheshire Rail Line is partly within Lach Dennis and Lostock Green Parish boundary. The centre of the rail line is the parish boundary thus the west bound rail carriage way, platform and Lostock Gralam Station car park are all part of Lach Dennis and

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Lostock Green Parish. But the construction and operation of the proposed HS2 high speed rail route HS2 will make access to this vital public transport link within Lach Dennis and Lostock Green Parish harder to reach.

3.2.9. **[RESPONSE]** Lostock Green community's viability and well-being relies on vital '*accessibility to other community facilities*' such as public transport, shops, pharmacies etc. only available outside Lostock Green in the nearby communities of Lostock Gram, Broken Cross and Rudheath.

3.2.10. The existing well-used and vital public right of way pedestrian and cyclist crossing of the A556 Shurlach Road junctions with Birches Lane is the shortest link from the south-eastern part of Lostock Green to the north-eastern part of Lostock Green. The crossing provides ease of access within walking distance from Lostock Green to the '*range of community resources*' in Lostock Gram, Broken Cross and Rudheath.

3.2.11. **[OBJECTION]** The HS2 Phase 2b high speed rail line route passes through Lostock Green on the line of the existing A556 Shurlach Road and severs and diverts pedestrian and cyclist crossing of the A556 Shurlach Road, thus reducing and having a negative effect on Lostock Green community's '*accessibility to other community facilities*' and a '*range of community resources*'.

3.2.12. **[RESPONSE]** More consideration and provision is needed from HS2* on '*improving or altering the remaining portion of the community facility*' i.e. the existing pedestrian and cyclist crossing of the A556 Shurlach Road.

3.2.13. **[RESPONSE]** HS2* should undertake to:

- Maintain the shortest connection between Lostock Green south-east and Lostock Green north-west
- Improve '*accessibility to other community facilities*'
- Engage with Lach Dennis and Lostock Green Parish Council, and Cheshire West and Chester Council Local Authority to reach an acceptable mitigation design for a replacement pedestrian and bicycle crossing both the proposed HS2 Phase2b high speed rail scheme and the rerouted A556 Shurlach Road dual carriage in a location that does not adversely increase the distance to walk/cycle.

3.3. ROADS, PUBLIC RIGHTS OF WAY, TRAFFIC, TRANSPORT

3.3.1. **[OBJECTION]** Lach Dennis Parish Council concludes from the statements and information presented in the High-Speed Rail (Crewe to Manchester) Environmental Statement that, the construction (from 2025) and operation (to 2145) of the HS2 Phase 2b high speed rail infrastructure scheme, leaves a lasting adverse legacy of '*Major adverse.... Traffic flow*' '*...resulting in significant effects on traffic-related severance for non-motorised users....*' thus creating community severance and isolation of Lostock Green, Lach Dennis and the scattered properties and farms within Lach Dennis and Lostock Green Parish Boundary.

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3.3.2. [RESPONSE] The proposed HS2 *'revising works to roads and public rights of way, including realigning some roads'* do not meet the needs of Lostock Green community. It is vital that transport links for non-vehicle and vehicle users are maintained to prevent community severance and isolation of Lostock Green.

3.3.3. [OBJECTION] The proposed HS2 *'revising works to roads and public rights of way, including realigning some roads'*:

- Decrease the ease of access to local services in comparison to the existing base line increasing community severance
- Increase the potential safety hazards for users. E.G: longer routes, unlit public rights of way, lack of road side pavements

3.3.4. [OBJECTION] The adverse impact of the proposed HS2 *'revising works to roads and public rights of way, including realigning some roads'* is succinctly expressed by a resident of Lostock Green:

'Our objections to their closing public footpaths in this area which will isolate those of us who rely on the paths to walk to local, vital amenities e.g. the chemist in Lostock Gralam, the shops at both Lostock Triangle and Rudheath. We don't all have access to cars. And by closing the footpaths, they are robbing us of our freedom to choose to walk rather than face the nightmare of the A556'

3.3.5. [RESPONSE] HS2* should undertake to discuss and come to an agreement with Lach Dennis Parish Council and Cheshire West and Chester Council re revising, realigning and changing the design of:

- Birches Lane Diversion (refer to section 3.3.6)
- Retention and placement of existing baseline locality pedestrian and cycle crossing of A556 Shurlach Road from Birches Lane (south) to Birches Lane (north) (refer to section 3.3.7)
- New PROW access from Birches Lane (south) to Birches Lane (north) under the proposed route of HS2 Phase 2b and re-routed A556 Shurlach Road (refer to section 3.3.8)
- Replacement of A556 Shurlach Road pedestrian and cycle crossing with the new PROW and provision A556 Shurlach Road Culvert as a joint PROW underbridge (refer to section 3.3.9)
- Diversion of the A556 Shurlach Road (refer to section 3.3.10)

3.3.6. Birches Lane Diversion

3.3.6.1. [OBJECTION] Lach Dennis Parish Council have significant safety concerns re the siting and proposed diversion to Birches Lane (south) at the junction with the realigned A556 Shurlach Road (Chainage ML 269+100).

3.3.6.2. **[RESPONSE]** Lach Dennis Parish Council request that HS2* undertake discussions with and come to a satisfactory solution with Lach Dennis Parish Council and Cheshire West and Chester Council re revising, realigning and changing the design of the proposed diverted Birches Lane (south) junction with the realigned A556 Shurlach Road.

3.3.6.3. **[OBJECTION]** Significant safety concern re traffic on the 70mph speed limit dual carriageway trunk road A556 Shurlach Road travelling at speed on a descending slope from the Lostock Gralam Viaduct (chainage ML 269+700) and meet slow moving traffic on an ascending slope joining from Birches Lane (south) (Chainage ML 269+100).

3.3.6.4. **[OBJECTION]** Significant safety concern re the visibility for traffic from Birches Lane (south) is restricted to a c.350m line of sight to the north-east when joining realigned A556 Shurlach Road as concluded by Lach Dennis and Lostock Green Parish Council from the statements and information presented in the High Speed Rail (Crewe to Manchester) Environmental Statement.

3.3.6.5. **[OBJECTION]** Significant safety concern re traffic on the 70mph speed limit dual carriageway trunk road A556 Shurlach Road travelling at speed on a descending slope from the Lostock Gralam Viaduct (chainage ML 269+700) and building up behind slow moving traffic on the A556 Shurlach Road building up slowing to turn off into Birches Lane (south) (Chainage ML 269+100).

3.3.7. Retention and placement of existing baseline locality pedestrian and cycle crossing of A556 Shurlach Road from Birches Lane (south) to Birches Lane (north) (Chainage ML 268+800)

3.3.7.1. **[OBJECTION]** Lach Dennis Parish Council's view is that the replacement of the existing baseline crossing point (Chainage ML 268+800) with a road diversion of Birches Lane and new proposed Public Right Of Way is not satisfactory.

3.3.7.2. **[RESPONSE]** Lach Dennis Parish Council's view is that the pedestrian and cycle crossing point existing baseline locality (Chainage ML 268+800) is a vital transport link for non-vehicle users, HS2* should undertake to maintain the existing baseline location pedestrian and cycle crossing point to prevent community severance and isolation of Lostock Green.

3.3.7.3. **[OBJECTION]** The proposal of a new Public Right of Way (PROW) from Birches Lane (south) to Birches Lane (north) results in a longer journey for residents of Lostock Green to walk to the nearest shop, Spar Garage, located south-west of Lostock Green in Broken Cross. The proposed new Public Right of Way (PROW) diverts pedestrians initially opposite direction, to the north-east of Lostock Green, then doubles back; thereby increasing the return walking distance by c.80% from the current baseline journey of c.2.7km (1.7 miles) to c. 5km (3miles).

3.3.7.4. **[RESPONSE]** HS2* should undertake to re-address the proposed removal of existing baseline location pedestrian and cycle crossing point of the A556 Shurlach Road dual carriage from Birches Lane (south) to Birches Lane (north) (Chainage ML 268+800).

2.3.7.5. **[RESPONSE]** HS2* should undertake to engage with Lach Dennis Parish Council and Cheshire West and Chester Council Local Authority to reach an acceptable design for a pedestrian and bicycle crossing point the existing crossing baseline locality re provision of:

- A pedestrian and bicycle under bridge the proposed high speed rail scheme, HS2 Phase2b

And either:

- A pedestrian and bicycle crossing point of the re-routed A556 Shurlach Road dual carriage by staggered gap pedestrian bicycle crossing in central reservation (as per existing baseline Birches Lane/A556 crossing)

Or:

- A crossing the re-routed A556 Shurlach Road dual carriage by overbridge

3.3.8. New PROW access from Birches Lane (south) to Birches Lane (north) under the proposed route of HS2 Phase 2b and re-routed A556 Shurlach Road Refer to route as shown in HS2 2b Hybrid Bill Env. State.Doc. 25 Map No MA02 CT-06-315 C6, D5, D6, E5, E6.

3.3.8.1. **[RESPONSE]** Lach Dennis Parish Council's view is that the replacement of the existing baseline pedestrian and cycle crossing point (Chainage ML 268+800) from Birches Lane (south) across A556 Shurlach Road to Birches Lane (north) with a c.400m road diversion of Birches Lane (south) and a new c.700m PROW is not satisfactory for pedestrian and cycle access from Birches Lane (south) to Birches Lane (north). The replacement Public Right Of Way one way route for pedestrians and cyclists to nearest community services is lengthened by 1100m from Lostock Green.

3.3.8.2. **[OBJECTION]** The road diversion of Birches Lane (south) and new Public Right Of Way lessens the opportunity for enhancing the health and wellbeing of the publicly accessible areas and local community services and facilities for the Lostock Green community and does not, has not meet the approach '*avoid or reduce effects on the visual amenity of residential communities, receptors and users of the landscape*' Environmental Statement Document Non-technical Summary Doc M13 Pages 65 to 67 section 7.12 and Figure 17.

3.3.8.3. **[OBJECTION]** The replacement of the existing Birches Lane A556 Shurlach Road non-vehicular crossing point with a road diversion of Birches Lane (south) and new Public Right Of Way route for pedestrians and cyclists lessens the health and wellbeing of pedestrians, cyclists, particularly single pedestrians both during day time and the hours of darkness. The whole route of the realigned Birches Lane (south) and new Public Right Of Way route is flanked by trees and vegetated mounds restricting the visibility of users to others.

3.3.8.4. **[RESPONSE]** The Environmental Statement's proposed road diversion of Birches Lane (south) and new Public Right Of Way should maintain the features of the existing crossing and route along Birches Lane (south and north) that give the pedestrians visibility to others, thereby lessening potential vulnerabilities of walking on a public right of way that is isolated and hidden from view.

3.3.8.5. **[RESPONSE]** Features that enhance security of the realigned Birches Lane (south) and new Public Right Of Way are:

- Adjacent to a public highway
- Public lighting
- Hard surface suitable for pedestrians, pushchairs, wheel chairs, cyclists
- Pavement along road diversion of Birches Lane (south)
- Where possible sited adjacent to housing

3.3.8.6. **[RESPONSE]** HS2* should undertake to engage with Lach Dennis Parish Council and Cheshire West and Chester Council Local Authority to re assess and agree on an acceptable design with Lach Dennis Parish Council and Chester and Cheshire West Council Local Authority for the proposed replacement of the existing baseline pedestrian and cycle crossing point (Chainage ML 268+800) from Birches Lane (south) across A556 Shurlach Road to Birches Lane (north).

3.3.9. Replacement of A556 Shurlach Road pedestrian and cycle crossing with the provision A556 Shurlach Road Culvert as a joint PROW underbridge

3.3.9.1. **[RESPONSE]** Lach Dennis Parish Council's view is that the provision pedestrian and cycle access for non-vehicle users from Lostock Green Village and Penny's Lane, Lach Dennis is a vital transport link to prevent community severance and isolation of Lostock Green.

3.3.9.2. **[RESPONSE]** Lach Dennis Parish Council residents have raised the provision of using the proposed A556 Shurlach Road Culvert underbridge (Chainage ML 268+075) as a joint new PROW underbridge with Lach Dennis and Lostock Green Parish Councillors. Esther McVey MP Tatton, Cheshire West and Chester Councillors and HS2 Ltd.

3.3.9.3. **[RESPONSE]** HS2* have an opportunity to improve and enhance community accessibility and prevent mitigate community severance and isolation of Lostock Green as a consequence of the construction of the HS2 2b high speed infrastructure by the provision of:

- a new PROW from the south west termination of Village Close through the tree planted HS2 Phase 2b rail line landscape mitigation zone on east side of proposed HS2 2b route.
- a pedestrian and cyclists accessible underbridge in conjunction the proposed A556 Shurlach Road Culvert underbridge beneath the Rudheath embankment (Chainage ML 268+075).

3.3.9.4. **[OBJECTION]** For the 300 and more residents of Lostock Green the poor-quality pedestrian access provision and the adverse impact from reduced community connectivity, proposed by the Government / Department for Transport / HS2 Ltd in the Environmental Statement is in stark contrast to the Government / Department for Transport / HS2 Ltd's provision for underbridge crossing points of the HS2 2b high speed route for 2 footpaths across the Royal Cheshire Show Ground, a non-residential area.

- Footpath Tabley Inferior 1/1 Accommodation Underbridge FP1/1 (Env. State. Doc 26 Map No CT-05-317 A6/7, B6/7)

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- Footpath Pickmere P9/1 Underbridge
(Env. State. Doc 26 Map No CT-05-317 H7)

3.3.9.5. The provision for underbridges for two rarely used footpaths, probably 3 to 5 days a year, when the Royal Cheshire Show is taking place contrasts with the Government / Department for Transport / HS2 Ltd's failure and omission to maintain essential, frequently used on a daily basis from Lostock Green to access the nearest local services and amenities.

3.3.9.6. The dimensions of the proposed A556 Shurlach Road Culvert accommodation underbridge under Rudheath Embankment are:

- 4.6m height Rudheath Embankment
- 900 m from east termination of Rudheath Embankment
- 1000 m from west termination of Rudheath Embankment

3.3.9.7. The dimensions proposed A556 Shurlach Road Culvert joint new PROW underbridge closely match the dimension for embankment viaduct height and horizontal distances for Footpath Tabley Inferior 1/1 Accommodation Underbridge Pickmere Embankment

- 1000m from west termination of Pickmere Embankment
- c.5m Pickmere Embankment height

3.3.9.8. **[RESPONSE]** HS2* should undertake to engage with Lach Dennis Parish Council and Cheshire West and Chester Council Local Authority on the provision of a new PROW and provision the A556 Shurlach Road Culvert as a joint PROW underbridge.

3.3.10. Diversion of the A556 Shurlach Road

3.3.10.1. **[OBJECTION]** The construction of the Rudheath Embankment and the diversion of the A556 Shurlach Road/Chester Road will result in the loss of the pedestrian, bicycle and virtually traffic free access from Birches Lane Lostock Green (north-east) via the A556 footpath, Lostock Green Picnic Area and Cookes Lane, to the nearest shop and other community facilities in Broken Cross and Rudheath.

3.3.10.2. **[RESPONSE]** HS2* should undertake to discuss and come to an agreement with Lach Dennis Parish Council and Cheshire West and Chester Council re revising, realigning and changing the design of access by foot and cycle from the junction of Birches Lane (north-west) with the A556 Shurlach Road to Cookes Lane, Broken Cross.

3.4. CONSTRUCTION

3.4.1. Construction traffic routes

3.4.1.1. **[RESPONSE]** HS2* should undertake to engage with Lach Dennis Parish Council, other affected Parish Councils and Cheshire West and Chester Council Local Authority to reach an acceptable mitigation design to reduce and eliminated the negative environmental community impacts during construction from construction traffic routes using '*principal highways in the*

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area include the A556 Chester Road/Shurlach Road, the A530 King Street, the A530 Nantwich Road, the A559 Manchester Road' within and immediately adjacent to Lach Dennis and Lostock Green Parish.

3.4.1.2. **[OBJECTION]** Lach Dennis Parish Council's view is that there will be a worsening of the existing baseline traffic hazards and traffic congestion on the major arterial routes and highways south and east of Northwich as a direct consequence of the additional traffic generated by the proposed construction of HS2 2b high speed route dates 2025 to 2031.

3.4.1.3. **[OBJECTION]** The concern is traffic hazards and traffic congestion is expressed by the Resident's comment:

'I live just off the King St/A556 junction which suffers massive congestion at peak times. The proposed closure and realignment of this major trunk road and the plan to 'squeeze' it next to the TATA chemicals lagoons to accommodate the new railway will cause unbelievable, long term disruption. This is exasperated by the approved building of the giant industrial waste incinerator on Griffiths Road to handle 600,000 tonnes of waste per annum. This was fought against by both residents and local and county councils but, despite this, was approved by the Secretary of State. It is estimated that hundreds of HGVs per day will now pass my property to gain access. The highways are already inadequate and the resulting increased congestion, noise and pollution just beggar belief.'

3.4.1.4. **[RESPONSE]** Lach Dennis Parish Council want HS2* to undertake to discuss with and satisfy Lach Dennis Parish Council on how the Department for Transport / HS2 Ltd will address the existing traffic and additional HS2 2b construction traffic movements and diversions::

- A530 King Street Northwich to Middlewich: including temporary highway diversion/realignment at Morrisons Roundabout
- A556 Shurlach Road / Chester Road dual carriage way trunk road: from west of A530/A556 Broken Cross roundabout to A559 Manchester Road/A556 Chester Junction to M6 including temporary Highway diversion/realignment at Lostock Triangle
- Manchester Road A559: from Griffiths Road to A559 Manchester Road/A556 Chester Junction including temporary Highway diversion/realignment at Lostock Triangle
- Birches Lane Station Road A556 to A559: 'Unsuitable for heavy goods vehicles' designated by CWAC Highways and signed at junction A556 eastbound with Birches Lane NW.
- Lostock Hollow: Narrow stone road bridge on bend over Wade Brook frequently damaged by large vehicles.
- Griffiths Road A530 from A559 Manchester Road junction to Griffiths Road A556 roundabout: Height restriction at Mid Cheshire Rail Line overbridge.
- Height restriction at overbridge carrying high temperature liquid chemical slurry in open conduit.
- Crowder's Lane and Penny's Lane:
- 35° angle road junction Crowder's Lane to/from Penny's Lane.
- Road junction on blind bend at road to Boundary Farm south off Crowder's Lane

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- Blind Z bends on Crowder's Lane

3.4.2. Construction Compounds

3.4.2.1. **[OBJECTION]** Lach Dennis Parish Council have significant concerns re the siting, within Lach Dennis and Lostock Green Parish Boundary and neighbouring Parishes, of high numbers and density of engineering satellite compounds, temporary material stock piles and very large area of land required during construction. The amount of land required for construction of the HS2 2b high speed rail scheme will have significant effects on the '*social capital*' of communities of Lostock Green, Lach Dennis and the scattered properties and farms from the proposed construction dates 2025 to 2031.

3.4.2.2. The communities of Broken Cross, Rudheath, Lostock Green, Lostock Gralam and Ascol Drive (Chainage ML 267+000 to ML 270+700) are located in the area with the highest number of residential properties and people on the proposed HS2 Phase 2b rail line route from the Crewe Tunnel North Portal to Manchester Airport, and Golborne.

3.4.2.3. **[OBJECTION]** In the area within Lach Dennis and Lostock Green Parish, between A530 King Street roundabout (Chainage ML 267+000) and the A559 Manchester Road/A556 Chester Junction (Chainage ML 270+500) there are located:

- 7 to 9 civil engineering satellite construction compounds
- 7 large temporary material stock piles
- 13 smaller temporary material stock piles
- Land required during construction (shaded pink) equivalent to c.120 football pitches

3.4.2.4. **[RESPONSE]** Lach Dennis Parish Council want HS2* to undertake to engage with and satisfy Lach Dennis Parish Council and other affected Parishes on how the Department for Transport / HS2 Ltd will address, record, mitigate, reduce and avoid the likely significant negative environmental and community impacts of such a high number and density of engineering satellite compounds, temporary material stock piles and extensive area of land required during construction re:

- Noise
- Vibration
- Lighting
- Night time construction activities
- Airborne dust
- Works material spread on public roads
- Integrity of road verges and road side utilities
- Construction traffic movement and volume
- Road diversions
- Public rights of way access from and to communities
- Other construction activities that create negative environmental and social capital impact

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3.4.2.5. **[RESPONSE]** Lach Dennis Parish Council want HS2* to undertake to engage with and satisfy Lach Dennis Parish Council and other affected Parishes re:

- Locating the engineering satellite construction compounds, temporary material stock piles further away from the communities of Broken Cross Rudheath, Penny's Lane Lach Dennis, Lostock Green, Lostock Gralam, and Ascol Drive to mitigate and avoid the negative impact on communities during construction; in particular:
- Moving the large Gadbrook Viaduct North Satellite Compound, with 80 to 205 workers/staff present for the long time of 6 years and 6 months from 2025, south and to the site of the Rudheath Embankment Satellite Compound. The Gadbrook Viaduct North Satellite Compound would be closer to the Gadbrook Viaduct and away from the residential area of Broken Cross to the area of the Rudheath Embankment Satellite Compound.
- Moving the smaller Rudheath Embankment Satellite Compound present for the shorter time of 3 years 3 months from 2027 to north to the site of Gadbrook Viaduct North Satellite Compound south to mitigate negative impact on the Broken Cross residential area.
- No variation to extend work hours to be permitted. For the interest of community well-being.

3.4.3. Temporary worker accommodation

3.4.3.1. **[OBJECTION]** Lach Dennis Parish Council have significant concerns re the siting of temporary worker accommodation at the Gadbrook Viaduct North Satellite Compound:

- Will have adverse effect on the *'Social capital'* of communities of Lostock Green, Lach Dennis and the scattered properties and farms within Lach Dennis and Lostock Green Parish Boundary
- Will intensify the exiting traffic problems at the A530 King Street / A556 Shurlach Road roundabout and increase the traffic volume during the HS2 2b high speed rail scheme construction period thereby creating a negative impact on local residents' traffic movement. *'The presence of construction workers is likely to be noticeable, with construction vehicles using assigned local roads to access compounds, and workers using facilities in local settlements'*

3.4.3.2. **[RESPONSE]** Lach Dennis Parish Council want HS2* to undertake to engage with and satisfy Lach Dennis Parish Council and other affected Parishes to review the location and the access to and from the temporary worker accommodation at the Gadbrook Viaduct North Satellite Compound.

3.5. VISUAL, NOISE IMPACTS

3.5.1. **[OBJECTION]** Lach Dennis Parish Council have significant concerns re the visual and noise impacts on the communities within the parish boundary from the construction and operation of the HS2 Phase 2b high speed rail infrastructure. Further noise fences are required *'to provide acoustic screening for the communities of ..., Lostock Green',* and Penny's Lane, Lach Dennis.

3.5.2. **[OBJECTION]** The communities of Lostock Green and Penny's Lane, Lach Dennis will *'experience a combination of noise, visual and traffic effects from construction of the Proposed Scheme'* and *'They are likely to experience this as changing the quality of their neighbourhood and to regard that change as adverse, both in diminishing the amenity of the village and in reducing the sense of its rural character'*

3.5.3. **[RESPONSE]** Lach Dennis Parish Council note that the High-Speed Rail (Crewe to Manchester) Hybrid Bill January 2022 Environmental Statement fails to include Lostock Green and Penny's Lane Lach Dennis as a communities where:

'The combination of construction noise, visual and traffic impacts will change the character of neighbourhoods and may impact on residents' quality of life' and *'perceptions of reduced neighbourhood quality.'*

3.5.4. As noted in paragraph 3.2.2. above:

The communities of Broken Cross, Rudheath, Lostock Green, Lostock Gram and Ascol Drive (Chainage ML 267+000 to ML 270+700) are located in the area with the highest number of residential properties and people on the proposed HS2 Phase 2b rail line route from the Crewe Tunnel North Portal to Manchester Airport, and Golborne.

3.5.5. **[RESPONSE]** Lach Dennis Parish Council consider that the residential properties of Lostock Green and Penny's Lane, Lach Dennis should be specified as communities where *'Noise and visual impacts from passing trains will result in permanent operational impacts on neighbourhood quality'* and *'The presence of railway infrastructure within the local landscape will change the character of surrounding neighbourhoods'*

3.5.6. Lostock Green noise fence additional requirements: Chainage ML 269+200 to ML 270+450

3.5.6.1. **[RESPONSE]** Lach Dennis Parish Council consider that noise fence barriers up to 5m in height are required on the east sides of the HS2 rail track line between Wade Brook Viaduct and Lostock Gram South Embankment.

3.5.6.2. **[OBJECTION]** The proposed height above ordnance datum of the Lostock Gram North Embankment is 44 to 43m. The height of the rail track is therefore 10m higher in elevation than the existing c.33-34m AOD base line ground surface level of Lostock Green. Properties and residents on the NE side of the village of Lostock Green already experience traffic noise nuisance from existing A556 Shurlach Road and the Mid Cheshire Rail Line which are on the same existing c.33-34m AOD base line ground surface level as Lostock Green.

3.5.7. Penny's Lane, Lach Dennis noise fence additional requirements: Chainage ML 266+500 to ML 267+900

3.5.7.1. **[RESPONSE]** Lach Dennis Parish Council consider that a noise fence up to 4m is required on the east side of the high speed rail line from Gadbrook Viaduct and Rudheath Embankment.

3.5.7.2. **[OBJECTION]** The proposed height above ground level of the rail track on Gadbrook Viaduct and Rudheath Embankment is 18.5 to 4.8m above the existing base line ground surface level ground of 30m AOD. The topography is flat and open pasture land. Therefore noise, from both the construction and the operation of the proposed high speed rail infrastructure on the Gadbrook Viaduct and Rudheath Embankment, will create an adverse effect on the properties in Penny's Lane Lach Dennis.

3.5.7.3. **[RESPONSE]** Lach Dennis Parish Council want HS2* to undertake to engage with Lach Dennis Parish Council, to mitigate the adverse residual noise impact of the proposed high speed rail scheme by filling in the gaps in the noise fences from chainage ML 266+600 to ML 270+450

3.6. POOR GROUND CONDITIONS

3.6.1. **[OBJECTION]** Lach Dennis Parish Council have significant concerns re safety due adverse environmental effects and geohazards of the known poor ground conditions, and climate change resilience of the HS2 2b high speed rail infrastructure that have not been addressed in the High-Speed Rail (Crewe to Manchester) Hybrid Bill January 2022 Environmental Statement.

3.6.2. **[OBJECTION]** Lach Dennis Parish Council have significant concerns re the lack of engagement from the Department of Transport and their agents and advisers (HS2 Ltd) with Lach Dennis Parish Council, Cheshire West and Chester Council, and others including stakeholders and residents re the ground investigation survey and information that has been, and is planned to be, gathered, assessed, undertaken and out.

3.6.3. **[RESPONSE]** Lach Dennis Parish Council urge the Select Committee / Government / Department for Transport to undertake an independent assessment to be carried out of the impact of the potentially hazardous ground conditions of HS2 phase 2b high speed rail route north of Crewe, which includes the adverse environmental effects and geohazards of the known poor ground conditions within Lach Dennis and Lostock Green Parish.

3.6.4. **[OBJECTION]** The existing baseline poor ground condition geohazards have safety implications for those, constructing, operating, and using the high-speed rail infrastructure and those living adjacent to the infrastructure

3.6.5. **[OBJECTION]** The existing baseline poor ground condition geohazards are likely to increase in intensity, occurrence, volume increases in precipitation, surface water, ground water, water table rise, surface water flooding and ground water flooding a consequence of climate change driven changes to the hydrological cycle such as sea level rise.

3.6.6. **[RESPONSE]** The High-Speed Rail (Crewe to Manchester) Hybrid Bill Environmental Statement addresses the impact of the high-speed rail infrastructure on the environment but not addressed are:

- The impact of the existing environment and poor ground condition geohazards on the HS2 2b high speed rail infrastructure.
- The proposed measures to avoid, reduce, mitigate and offset the likely significant and adverse environmental effects of the known poor ground conditions, with respect to surface water, ground water and ground stability, on the HS2 2b high speed rail infrastructure project.
- The impact of ongoing and future climate driven changes to the environment, ground conditions and geohazards on HS2 high speed rail infrastructure
- The proposed measures to avoid, reduce, mitigate and offset the likely significant and adverse environmental effects of the ongoing and future climate driven changes to the environment, ground condition geohazards on the HS2 2b high speed rail infrastructure project.

3.6.7. **[RESPONSE]** Lach Dennis Parish Council want HS2* to undertake to engage with and satisfy Lach Dennis Parish Council and Cheshire West and Chester Council that the measures and infrastructure design of the proposed high speed rail scheme presented in the High Speed Rail (Crewe to Manchester) Hybrid Bill will mitigate and prevent the likely adverse of flooding, ground stability and geohazards within Lach Dennis and Lostock Green Parish Boundary effects during construction and operation of the high speed rail infrastructure.

3.6.8. **[RESPONSE]** The likely significant climate driven changes, for the 120 year anticipated life of the proposed high speed rail infrastructure, in surface water and groundwater conditions to mitigate and prevent an increase in:

- Surface flooding
- Road flooding
- Drainage ditch overflow
- Road drains overflow
- Sewer overflow

3.6.9. **[OBJECTION]** The risk of ground surface subsidence due to settlement and underground flow of saturated sand in confined artesian aquifer and sagging of overlying impermeable clay and where the clay layer is breached each after intense long period of drought allowing artesian water to reach the surface and surface water to flow into the aquifer.

3.6.10. Slope instability in soft weak ground conditions due to outflow of artesian water and saturated sand from aquifer at spring lines where valley slopes intersect the upper interface of the saturated sand in confined artesian aquifer with overlying impermeable clay layer.

3.6.11. **[RESPONSE]** Lach Dennis Parish Council want HS2* to undertake to address and satisfy Lach Dennis Parish Council and Cheshire West and Chester Council Local Authority that:

- The information on the ground conditions, surface water, ground water and flooding in the Lach Dennis Parish Council response to the Environmental Statement January 2022 is assessed by HS2 Ltd's Geotechnical and other appropriate HS2 Ltd personnel

And

- Incorporated in Government / Department for Transport / HS2 Ltd's climate change resilience measures in the design, construction and operation of the high speed rail scheme that mitigate and monitor the infrastructure for the 120 year expected life time.

3.6.9. Wade Brook Valley Springs, Sinks and Running Sand

3.6.9.1. **[OBJECTION]** Lach Dennis Parish Council have significant concerns re safety and adverse environmental effects from the existing baseline and geohazards of the known poor ground conditions of the Wade Brook Valley, in the area crossed by the route of the proposed HS2 2b high speed rail infrastructure and land required for the construction of the proposed scheme: Wade Brook Viaduct, Wade Brook Overbridge, Rudheath Embankment, Lostock Grlam South Embankment, Birches Lane Satellite Compound and Lostock Hollow Construction Traffic Route. (Chainage ML 268+800 to ML 269+500)

3.6.9.2. The existing baseline of the Wade Brook Valley, is known to be poorly drained, with surface water accumulation, springs from confined artesian aquifer, running sand, ground slope instability.

3.6.9.3. **[OBJECTION]** Lach Dennis Parish Council have significant concerns that the High-Speed Rail (Crewe to Manchester) Hybrid Bill January 2022 Environmental Statement:

- does not include a description of the '*good design*' measures that Government / Department for Transport / HS2 Ltd will '*build in resilience to the effects of climate change*' to resolve engineering issues re ground in stability in the area of the Wade Brook Viaduct, Wade Brook Overbridge, Rudheath Embankment, and Lostock Grlam South Embankment,
- does not include the '*specific monitoring*' arrangements, for the 120-year life of the Proposed HS2 2b Scheme, for '*the particular significant adverse effects*' on the proposed scheme of existing on-going current ground instability ground movement and potential future ground instability in the area of the Wade Brook Viaduct, Wade Brook Overbridge, Rudheath Embankment and Lostock Grlam South Embankment.

3.6.9.4. **[RESPONSE]** Lach Dennis Parish Council reiterates the importance to the Select Committee / Government / Department for Transport / HS2 Ltd that the information on the ground conditions in Lach Dennis Parish Council response to the Environmental Statement January 2022 January 2022 is assessed by HS2 Ltd's Geotechnical and other appropriate HS2 Ltd personnel re the climate change resilience measures in the design, construction, operation and safety of the high speed rail scheme for the 120 year expected life time that mitigate and monitor:

- base line existing slope instability
- slope instability during construction

Please note that [HS2*] is an abbreviation for Select Committee / Government /Department for Transport / HS2 Ltd

- potential escalation of slope instability slope stability from climate change driven increases in volume intensity and pressure of precipitation, surface water and ground water.
- increase in precipitation intensity, volume, frequency
- increase in surface water run off
- increase in surface water ponding flooding
- increase in ground water volume,
- increase in ground water aquifer pressure
- increase in water table height

3.7. SURFACE WATER, GROUND WATER, FLOODING

3.7.1. Flooding and sub surface drainage: Penny's Lane to A556 Shurlach Road junction (existing baseline) Rudheath Embankment

3.7.1.1. **[OBJECTION]** Lach Dennis Parish Council have significant concerns re safety and adverse environmental effects re surface water flooding and drainage in enclosures west of existing baseline route of Penny's Lane to A556 Shurlach Road junction either side of proposed Rudheath Embankment. (Chainage ML 267+600)

3.7.1.2. An existing site of surface flooding exists in the enclosures and roadside ditches south of the current baseline route of Penny's Lane to A556 Shurlach Road junction, east and west of proposed Rudheath Embankment and opposite the properties on the north side of Penny's Lane.

3.7.1.3. **[OBJECTION]** Properties on the north side of Penny's Lane have septic tanks which depend on filtered overflow drainage to the groundwater. Any rise in volume of ground water, height of water table and ground water, land surface flooding will be detrimental to the foul water drainage system of these properties with the potential for foul water surface flooding.

3.7.1.4. **[RESPONSE]** The extent, impact, risk from and susceptibility to surface water flooding and ground water flooding for the area, Penny's Lane current baseline route A556 Shurlach Road junction Rudheath Embankment, are clearly shown in Env. Stat. Doc. M325 WR-005-0MA02 Water resources and flood risk MA02: Wimboldsley to Lostock Gralam Flood risk assessment.

3.7.1.5. **[RESPONSE]** Lach Dennis Parish Council want HS2* to undertake to address and satisfy Lach Dennis Parish Council that the measures and infrastructure design of the proposed high speed rail scheme presented in the Environment Statement are fit for purpose to mitigate and prevent an increase in surface flooding, road flooding, drainage ditch overflow, road drains overflow, ground water flooding, disturbance to and surface flooding from foul water drainage from properties with septic tanks.

3.7.2. Flooding: A556 Shurlach Road Culvert (Chainage ML 268+075)

Please note that [HS2*] is an abbreviation for Select Committee / Government /Department for Transport / HS2 Ltd

3.7.2.1. **[OBJECTION]** Lach Dennis Parish Council have significant concerns re the likely significant and adverse environmental effects from the extent, impact, risk from, susceptibility to surface water flooding and ground water flooding for the area draining into the A556 Shurlach Road Culvert.

3.7.2.2. **[OBJECTION]** The extent, impact, risk from and susceptibility to surface water flooding and ground water flooding for the area draining into the A556 Shurlach Road culvert, are clearly shown in Env. Stat. Doc. M325WR-005-0MA02 Water resources and flood risk MA02: Wimboldsley to Lostock Gralam Flood risk assessment Doc M325:

3.7.2.3. A556 Shurlach Road Culvert sited in an area:

- designated as high flood risk,
- of known high ground water table
- with ditches filled to brim i.e. high water table
- of known impermeable clay subsoil
- of known surface flooding
- flat area with little/no run off leading water ponding
- of flooding from rain water
- of flooding from the INOVYN Holford Brine Field operations; such as brines spills and bursts which are highly likely to flow into and contaminate the proposed balancing pond (chainage ML 268+050)

3.7.2.4. The surface drainage area of the INOVYN Holford Brine Field infrastructure in the area bounded by Birches Lane, Lostock Green to Penny's Lane, Lach Dennis and the A556 Shurlach Road, is within the catchment area of the A556 Shurlach Road culvert. Any brine escapes at the surface and near surface therefore flows as surface floods, in field ditches, underground field drains and as groundwater to the A556 Shurlach Road culvert.

3.7.2.5. **[RESPONSE]** Lach Dennis Parish Council want an undertaking from HS2* to address and satisfy Lach Dennis Parish Council on the design of the measures and mitigation that avoid, reduce, mitigate and offset the likely significant and adverse environmental effects surface water flooding and ground water flooding for the area draining into the A556 Shurlach Road Culvert.

3.8. INDUSTRY

3.8.1. Environmental Damage from breaches and leaks from Holford Brine Field impacts from high pressure brine, high pressure water and high pressure gas infrastructure.

3.8.1.1. **[OBJECTION]** Lach Dennis Parish Council have very significant concerns re safety and adverse environmental effects re damage from leaks from Holford Brine Field impacts from high pressure brine, high pressure water and high-pressure gas infrastructure as a result of the construction, maintenance and operation of the proposed HS2 2b high speed rail infrastructure.

3.8.1.2. The majority of Lach Dennis and Lostock Green Parish is within the boundary of the Holford Brine Field and environmental and community damage e.g. to road verges drainage, properties is of major concern to the Parish Council.

3.8.1.3. For decades, since at least the 1970s, there have been instances of brine surface runoff and environmental damage from failures in brine infrastructure; at brine well heads, brine storage tanks and connecting high pressure brine pipelines.

3.8.1.4. Lach Dennis Parish Council report and receive reports of instances of brine damage, as member of the INOVYN Holford Brine Field Liaison Group. Examples of two of major brine infrastructures failure leading to extensive surface brine flow that have occurred within the area required for the construction, operation and maintenance of the HS2 high speed infrastructure are:

- 19 June 2022 major surface brine flood from the Holford Brine Field infrastructure adjacent to Lostock Gram Station Birches Lane (north) into Lostock Hollows and Wade Brook within area required for the construction of the HS2 high speed infrastructure
- 12 April 2020 major surface brine flood from the Holford Brine Field adjacent to Birches Lane (south) Hangman's Lane junction to A556 Shurlach Road Culvert from the Holford Brine Field Environment Agency Reference number 1797734.

3.8.1.5.**[OBJECTION]** Lach Dennis Parish Council has very significant concerns re safety and adverse environmental effects and damage from leaks from INOVYN Holford Brine Field infrastructure - supported by those submitted by INOVYN Enterprises Ltd in their Response HS2 2b Environmental Statement Consultation 2022 000140_1-INOBYN Enterprises Limited - Stakeholder - Email Response <https://www.hs2billes.co.uk/Responses.aspx?id=102>

As set out in the extract from this document in

'INOBYN Chlorvinyl Ltd use the purified brine to produce Chlorine which is used to purify 98% of the UK's drinking water and is the building block for numerous other chemicals.

A failure to supply brine to the ICV business would result in the purification of water in the UK ceasing within two days.

The current route of HS2b and the diversion of the A556 will have a significant impact on the company's current and future operations and business

2.5. As already highlighted, the majority of INOVYN pipelines that pass beneath the existing A556 are made of ductile or cast iron both of which are particularly vulnerable to vibration, increased loads and ground movement, all of which are likely to occur as a result of the proposed HS2 works.

2.6. Potential settlement impact on vulnerable/ aged services.

Ground movement from the removal of the existing A556 embankment and the construction of the diverted A556 and new HS2 embankments is highly likely to have a long-term impact on INOVYN's existing vulnerable apparatus e.g. cast/ductile iron pipeline'

3.8.1.6. **[RESPONSE]** Lach Dennis Parish Council want an undertaking from HS2* undertake to address and satisfy Lach Dennis Parish Council, Cheshire West and Chester Council, the Environmental agency INOVYN Enterprises and other organisations owning or having responsibility for high pressure brine, high pressure water and high pressure gas similar infrastructure within the area required for the construction, operation and maintenance of the HS2 high speed infrastructure, on the design of the measures and mitigation that are to be put in place and taken to avoid, reduce, mitigate and offset the likely significant and adverse environmental effects to land, environment and residents within the parish of Lostock Green and Lach Dennis.

3.8.2. Risk to salt industry infrastructure. Risk to supply of sodium chloride vital to chemical industry

3.8.2.1. **[OBJECTION]** Lach Dennis Parish Council is concerned on the negative impact that the proposed route of the HS2 Phase 2b high speed rail infrastructure has on the salt industries of Cheshire beneath and adjacent to the HS2 2b route north of Crewe. Specifically:

- Risk to salt industry infrastructure
- Risk to supply availability/reliability of sodium chloride vital to chemical industry
- Sterilisation of salt reserves

3.8.2.2. The HS2 2b route across the Cheshire Salt District north of Crewe between Northwich, Winsford and Middlewich is to be built over the UK's biggest rock salt deposits, the Cheshire Salt District; a large part of the salt reserves being exploited and salt reserves available for exploitation are within Lach Dennis and Lostock Green Parish. The feedstock for the North West Chemical Industries is supplied by brine from the salt reserves beneath Lach Dennis and Lostock Green Parish or piped from adjacent parishes through Lach Dennis and Lostock Green Parish.

3.8.2.3. **[RESPONSE]** Lach Dennis Parish Council considers it has a duty to raise on behalf of the many of the salt industries located within Lach Dennis and Lostock Green Parish and the many Lach Dennis and Lostock Green Parish residents, land owners, tenant farmers with direct connections with the salt industries, concerns on the potential negative and costly impact of HS2 on the:

- Exploitation of the salt reserves
- The supply of feedstock for the North West Chemical Industries
- Nationally strategic secure gas storage in salt cavities

3.8.2.4. **[OBJECTION]** Any failures or reductions in on the availability and reliability of the supply of the sodium chloride brine feedstock and the gases stored in the salt caverns beneath Lach Dennis and Lostock Green and adjacent parishes, as a consequence of the construction and

operation of the high-speed infrastructure, are highly likely to result of negative effects on the North West Chemical Industries and Strategic Natural Gas Storage operations and businesses.

Refer to section 3.8.1.5 from the Supporting Statement from INOVYN Enterprises Ltd Response HS2 2b Environmental Statement Consultation 2022

- *'A failure to supply brine to the ICV business would result in the purification of water in the UK ceasing within two days.'*
- *'The current route of HS2b and the diversion of the A556 will have a significant impact on the company's current and future operations and business'*

3.8.3. Sterilisation of salt reserves

3.8.3.1. **[RESPONSE]** Lach Dennis Parish Council urges HS2* to consider the implications and the cost to the nation and the industries of not exploiting the UK's salt reserves sterilized by the HS2 Phase 2b high speed rail route within the Lach Dennis and Lostock Green Parish boundary. For example:

3.8.3.2. INOVYN Enterprises Ltd *'...would be unable to mine the minerals that are within INOVYN's consented Springbank Farm Site (Planning Permission date 21 May 1998) which will extend beneath HS2 and the diverted A56'*

Refer to comments in Section 2.2. from INOVYN Enterprises Ltd in their Response HS2 2b Environmental Statement Consultation 2022 000140_1-INOVYN Enterprises Limited - Stakeholder - Email Response <https://www.hs2billes.co.uk/Responses.aspx?id=102>

3.8.3.3. King Street Energy (Planning Permission date 08 December 2009) for 10 gas storage caverns. The January 2013 HS2 route announcement over the planned salt caverns prevented King Street Energy from proceeding with the gas storage cavern development. If the King Street Energy had gone ahead in 2013 the additional 10 gas storage caverns would have increased the gas storage capacity by 30% and would be available for gas storage now.

3. What do you want to be done in response?

In the box below, tell us what you think should be done in response to your objections to the Bill. You do not have to complete this box if you do not want to.

You can include this information in your response to section 3 'Objections to the Bill' if you prefer. Please number each paragraph.

See comments under 3

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March 2023

**HIGH SPEED RAIL (CREWE -
MANCHESTER) BILL**

**HOUSE OF COMMONS
SELECT COMMITTEE**

**Petition No. HS2-P2B-011:
Lach Dennis Parish Council**

Promoter's Response Document

INTRODUCTION

This Promoter's Response Document (PRD) forms the Promoter's response to Petition No. HS2-P2B-011, from Lach Dennis Parish Council.

In this PRD, 'the Promoter' means the Secretary of State and HS2 Ltd acting on their behalf.

The purpose of the PRD is to advise you and the Select Committee of the Promoter's position in relation to the petitioning points raised. It is intended that the PRD will alleviate many of the concerns raised in the petition.

The Table of Contents overleaf lists the page number, petitioning points in the order they appear in the petition, and a summary statement of the issue(s) contained in the petition for quick reference. Other supporting material (e.g., reports, drawings, and photographs) referred to in the response are attached where applicable.

Copies of the HS2 Phase 2b Information Papers referred to in the response can be found at

[HS2 Phase 2b \(Crewe – Manchester\) Information Papers - GOV.UK \(www.gov.uk\)](https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/614442/HS2_Phase_2b_Crewe_-_Manchester_Information_Papers.pdf).

Department for Transport
High Speed Two (HS2) Limited

BACKGROUND

Lach Dennis Parish Council represents the inhabitants of Lostock Green and Lach Dennis within the administrative area of Cheshire West and Chester.

PETITION NO. HS2-P2B-011

LACH DENNIS PARISH COUNCIL

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HOUSE OF COMMONS SELECT COMMITTEE

HIGH SPEED RAIL (CREWE - MANCHESTER) BILL

PROMOTER'S RESPONSE TO PETITION OF: Lach Dennis Parish Council

PETITION NO: HS2-P2B-011

PARAGRAPH NO: 3.1

ISSUE RAISED: General

PETITION PARAGRAPH: 3.1 Lach Dennis Parish Council want HS2* to undertake regular monthly meetings with Lach Dennis Parish Council during the construction of the HS2 Phase 2b high speed rail infrastructure scheme.

Please note that [HS2] is an abbreviation for Select Committee / Government /Department for Transport / HS2 Ltd

PROMOTER'S RESPONSE:

Engagement during the development of the Crewe – Manchester Proposed Scheme

1. The Promoter has carried out extensive stakeholder and public consultation in advance of the submission of the Bill. HS2 Phase 2b Western Leg Information Paper G1: Consultation and Engagement provides the details of the consultation and engagement carried out during the development of both the strategy for high speed rail in the UK and the route between London and the West Midlands of HS2 (Phase One).
2. The Crewe – Manchester Environmental Statement published in January 2022 (main ES) in section 3.2, Volume 1 and table 3 provide key engagement and consultation to date for the Phase 2b Proposed Scheme.
3. Consultation and engagement has been carried out in compliance with relevant guidance and legislation, including:
 - the second provision of the Aarhus Convention (June 1998);
 - Cabinet Office guidance on Consultation, published in July 2012;
 - prior to July 2012, the Cabinet Office's Code of Practice on Consultation issued in July 2008; and

- the Gunning Principles, which are a set of criteria for assessing the fairness of a public consultation.

4. Consultation has been a major influence on the development of the Proposed Scheme, particularly in helping to identify and mitigate local impacts. Initial consultation on high speed rail was undertaken from February 2011 to July 2011, and the subsequent announcement of the decision to pursue the Y network in two phases was announced in January 2012.

5. The Promoter has engaged with the Petitioner to discuss the Proposed Scheme through engagement and formal public consultations during the development of the Proposed Scheme to understand their areas of interest and concern. A summary of some of the engagement activities the Promoter has undertaken for the Proposed Scheme in the Wimboldsley to Lostock Gralam area can be found in Section 3, Volume 2 Community Area report for MA02 of the main ES. Engagement has also taken place since 2018 via the Implementation Advisory Group, an HS2 advisory group set up to collectively raise awareness and provide clear advice/guidance relating to the construction and operation of HS2 to communities, and to ensure appropriate engagement with community representatives on the design and mitigation of HS2. The Promoter also met the Petitioner on 2 December 2022 to discuss the petition.

Engagement during construction

6. The Promoter has made a commitment in the draft Code of Construction Practice (CoCP) to engage further with local communities on construction matters. Paragraph 5.1.1 of the draft CoCP requires the nominated undertaker and its contractors to produce and implement a community engagement framework and provide appropriately experienced community relations personnel to implement the framework, to provide appropriate information and to be the first point of contact to resolve community issues.

7. The Community Engagement Framework will set out how local people would be informed in advance of works taking place in their area. The notifications would detail the estimated duration of the works, the working hours and the nature of the works. In the case of works required in response to an emergency, the local authority, parish council, local residents, businesses and community resources would be advised as soon as reasonably practicable. All notifications would include the community helpline number.

8. The nominated undertaker would provide information on noise, dust and air quality monitoring to local communities via channels established under the Community Engagement Framework. The community helpline would be staffed 24 hours, 7 days a week to handle enquiries from the general public and local businesses regarding construction activities. Following Royal Assent for the Bill, the nominated undertaker would establish a small claims procedure to provide a mechanism for minor, construction-related, residential, business or agricultural claims. The Proposed

Scheme is designed to give a prompt response at minimum cost and inconvenience to claimants and does not affect statutory rights to redress.

9. As described in the draft CoCP, the nominated undertaker would take reasonable steps to engage with the community, particularly focusing on those who may be affected by construction impacts, including local residents, businesses, land owners and community resources, and the specific needs of protected groups (as defined in the Equalities Act 2010).

10. Regular meetings would be held in relevant community locations between the lead contractor, the nominated undertaker, the local authority and representatives of the local community or other stakeholders to discuss construction issues and the forthcoming programme of works. Experienced support for local businesses, landowners and voluntary and community organisations that may be affected by the works would be provided by the nominated undertaker.

11. As explained in paragraph 5.1.8 of the draft CoCP, an independent Construction Commissioner would be appointed by the Secretary of State. The Commissioner would investigate any grievance where it is alleged that the nominated undertaker has not satisfactorily addressed a matter raised by a complainant and would mediate in unresolved disputes between the project and individuals or bodies. More information can be found in HS2 Phase 2b Western Leg Information Paper D4: Construction commissioner.

12. The Promoter's policy on community engagement is set out in HS2 Phase 2b Western Leg Information Paper G2: Community relations, which explains the nominated undertaker's approach to community engagement and identifies the documents, standards and controls that would apply during construction of the Proposed Scheme. The draft CoCP requires the nominated undertaker and its contractors to maintain a 24-hour helpline during construction to handle enquiries from the general public and local businesses regarding construction activities. In addition, HS2 Phase 2b Western Leg Information Paper G2: Small claims scheme sets out the proposals for establishing a small claims scheme by the nominated undertaker to be operated during the construction of the Proposed Scheme. An independent Construction Commissioner would be appointed to investigate construction related complaints against the nominated undertaker. Further information can be found in HS2 Phase 2b Western Leg Information Paper D4: Construction commissioner.

HOUSE OF COMMONS SELECT COMMITTEE

HIGH SPEED RAIL (CREWE - MANCHESTER) BILL

PROMOTER'S RESPONSE TO PETITION OF:	Lach Dennis Parish Council
PETITION NO:	HS2-P2B-011
PARAGRAPH NO:	3.2.1 – 3.2.13 & 3.3.1 – 3.3.10.2
ISSUE RAISED:	Community, roads, public rights of way, traffic, transport
PETITION PARAGRAPH:	3.2.1. Lach Dennis Parish Council concludes from the statements and information presented in the High-Speed Rail (Crewe to Manchester) Environmental Statement that HS2* explicitly undertake to address, record and mitigate 'the likely significant effects..' of the construction and operation of the HS2 Phase 2b high speed rail route on the residents of Lostock Green. 3.2.2. [OBJECTION] The construction and operation of the HS2 Phase 2b high speed rail infrastructure scheme leaves a lasting adverse legacy on the 'Social capital', wellbeing and connectivity to vital community services, social and retail venues and public transport for the communities, businesses and industries of within Lach Dennis parish boundary. 3.2.3. [OBJECTION] Currently the sale of properties to Government / Department for Transport / HS2 Ltd is already having an adverse effect on the community vitality and 'social capital' of Lostock Green, both north and south of the existing A556 Shurlach Road as result of: · loss of occupied properties loss of residents · loss of friendships · some properties left vacant for years · some properties with short tenure and temporary residents 3.2.4. [OBJECTION]The Environmental Statement does not address the impact of community isolation and well-being as a direct consequence of the proposed high speed rail scheme, HS2 Phase2b on the two villages of Lostock Green, Lach Dennis and the scattered properties and farms. Both the impact on community isolation and well-being from the temporary adverse effects during construction and permanent

impact residual adverse effects from operation of the HS2 Phase 2b high speed rail infrastructure.

3.2.5. [OBJECTION] Lostock Green village in particular is significantly affected by the HS2 Phase 2b high speed rail infrastructure. Lostock Green is a community of c. 150 properties and over 300 residents which extends either side of the A556 Shurlach Road and the proposed route of the HS2 2b high speed rail line. Lostock Green is split into two parts by the A556 Shurlach Road - Lostock Green north-west and Lostock Green south-east.

3.2.6. Lostock Green is not separated from Lostock Gralam by the A556 Shurlach Road as described in in the Environmental Statement: 'To the south, Lostock Green has approximately 100 residential properties, separated from Lostock Gralam by the A556 Shurlach Road and the Northwich to Knutsford Line'.

3.2.7. Lostock Green does not have 'a range of community resources'. The only publicly available community facility in the south-eastern part of Lostock Green village is Broadfield Play Area in Birches Lane (south).

3.2.8. [OBJECTION] The publicly available community facility of Lostock Gralam Railway station on the Manchester Chester Mid Cheshire Rail Line is partly within Lach Dennis and Lostock Green Parish boundary. The centre of the rail line is the parish boundary thus the west bound rail carriage way, platform and Lostock Gralam Station car park are all part of Lach Dennis and Lostock Green Parish. But the construction and operation of the proposed HS2 high speed rail route HS2 will make access to this vital public transport link within Lach Dennis and Lostock Green Parish harder to reach.

3.2.9. [RESPONSE] Lostock Green community's viability and well-being relies on vital 'accessibility to other community facilities' such as public transport, shops, pharmacies etc. only available outside Lostock Green in the nearby communities of Lostock Gralam, Broken Cross and Rudheath.

3.2.10. The existing well-used and vital public right of way pedestrian and cyclist crossing of the A556 Shurlach Road junctions with Birches Lane is the shortest link from the south-eastern part of Lostock Green to the north-eastern part of Lostock Green. The crossing provides ease of access within walking distance from Lostock Green to the 'range of

community resources' in Lostock Gralam, Broken Cross and Rudheath.

3.2.11.[OBJECTION] The HS2 Phase 2b high speed rail line route passes through Lostock Green on the line of the existing A556 Shurlach Road and severs and diverts pedestrian and cyclist crossing of the A556 Shurlach Road, thus reducing and having a negative effect on Lostock Green community's 'accessibility to other community facilities' and a 'range of community resources'.

3.2.12.[RESPONSE] More consideration and provision is needed from HS2* on 'improving or altering the remaining portion of the community facility' i.e. the existing pedestrian and cyclist crossing of the A556 Shurlach Road.

3.2.13. [RESPONSE] HS2* should undertake to:

- Maintain the shortest connection between Lostock Green south-east and Lostock Green north-west
- Improve accessibility to other community facilities'
- Engage with Lach Dennis and Lostock Green Parish Council, and Cheshire West and Chester Council Local Authority to reach an acceptable mitigation design for a replacement pedestrian and bicycle crossing both the proposed HS2 Phase2b high speed rail scheme and the rerouted A556 Shurlach Road dual carriage in a location that does not adversely increase the distance to walk/cycle.

3.3.1. [OBJECTION] Lach Dennis Parish Council concludes from the statements and information presented in the High-Speed Rail (Crewe to Manchester) Environmental Statement that, the construction (from 2025) and operation (to 2145) of the HS2 Phase 2b high speed rail infrastructure scheme, leaves a lasting adverse legacy of 'Major adverse.... Traffic flow'.....'...resulting in significant effects on traffic-related severance for non-motorised users....'thus creating community severance and isolation of Lostock Green, Lach Dennis and the scattered properties and farms within Lach Dennis and Lostock Green Parish Boundary.

3.3.2.[RESPONSE] The proposed HS2 'revising works to roads and public rights of way, including realigning some roads 'do not meet the needs of Lostock Green community. It is vital that transport links for non-vehicle and vehicle users are

maintained to prevent community severance and isolation of Lostock Green.

3.3.3.[OBJECTION] The proposed HS2 'revising works to roads and public rights of way, including realigning some roads':

- Decrease the ease of access to local services in comparison to the existing base line increasing community severance
- Increase the potential safety hazards for users. E.G: longer routes, unlit public rights of way, lack of road side pavements

3.3.4.[OBJECTION] The adverse impact of the proposed HS2 'revising works to roads and public rights of way, including realigning some roads' is succinctly expressed by a resident of Lostock Green: 'Our objections to their closing public footpaths in this area which will isolate those of us who rely on the paths to walk to local, vital amenities e.g. the chemist in Lostock Gralam, the shops at both Lostock Triangle and Rudheath. We don't all have access to cars. And by closing the footpaths, they are robbing us of our freedom to choose to walk rather than face the nightmare of the A556 '

3.3.5. [RESPONSE] HS2* should undertake to discuss and come to an agreement with Lach Dennis Parish Council and Cheshire West and Chester Council re revising, realigning and changing the design of:

- Birches Lane Diversion (refer to section 3.3.6)
- Retention and placement of existing baseline locality pedestrian and cycle crossing of A556 Shurlach Road from Birches Lane (south) to Birches Lane (north) (refer to section 3.3.7)
- New PROW access from Birches Lane (south) to Birches Lane (north) under the proposed route of HS2 Phase 2b and re-routed A556 Shurlach Road (refer to section 3.3.8)
- Replacement of A556 Shurlach Road pedestrian and cycle crossing with the new PROW and provision A556 Shurlach Road Culvert as a joint PROW underbridge (refer to section 3.3.9)
- Diversion of the A556 Shurlach Road (refer to section 3.3.10)

3.3.6. Birches Lane Diversion

3.3.6.1. [OBJECTION] Lach Dennis Parish Council have significant safety concerns re the siting and proposed diversion to Birches Lane (south) at the junction with the realigned A556 Shurlach Road (Chainage ML 269+100).

3.3.6.2. [RESPONSE] Lach Dennis Parish Council request that HS2* undertake discussions with and come to a satisfactory solution with Lach Dennis Parish Council and Cheshire West and Chester Council re revising, realigning and changing the design of the proposed diverted Birches Lane (south) junction with the realigned A556 Shurlach Road.

3.3.6.3. [OBJECTION] Significant safety concern re traffic on the 70mph speed limit dual carriageway trunk road A556 Shurlach Road travelling at speed on a descending slope from the Lostock Gralam Viaduct (chainage ML 269+700) and meet slow moving traffic on an ascending slope joining from Birches Lane (south) (Chainage ML 269+100).

3.3.6.4. [OBJECTION] Significant safety concern re the visibility for traffic from Birches Lane (south) is restricted to a c.350m line of sight to the north-east when joining realigned A556 Shurlach Road as concluded by Lach Dennis and Lostock Green Parish Council from the statements and information presented in the High Speed Rail (Crewe to Manchester) Environmental Statement.

3.3.6.5. [OBJECTION] Significant safety concern re traffic on the 70mph speed limit dual carriageway trunk road A556 Shurlach Road travelling at speed on a descending slope from the Lostock Gralam Viaduct (chainage ML 269+700) and building up behind slow moving traffic on the A556 Shurlach Road building up slowing to turn off into Birches Lane (south) (Chainage ML 269+100).

3.3.7. Retention and placement of existing baseline locality pedestrian and cycle crossing of A556 Shurlach Road from Birches Lane (south) to Birches Lane (north) (Chainage ML 268+800)

3.3.7.1. [OBJECTION] Lach Dennis Parish Council's view is that the replacement of the existing baseline crossing point (Chainage ML 268+800) with a road diversion of Birches Lane and new proposed Public Right Of Way is not satisfactory.

3.3.7.2. [RESPONSE] Lach Dennis Parish Council's view is that the pedestrian and cycle crossing point existing baseline locality (Chainage ML 268+800) is a vital transport link for non-vehicle users, HS2* should undertake to maintain the existing baseline location pedestrian and cycle crossing point to prevent community severance and isolation of Lostock Green.

3.3.7.3.[OBJECTION] The proposal of a new Public Right of Way (PROW) from Birches Lane (south) to Birches Lane (north) results in a longer journey for residents of Lostock Green to walk to the nearest shop, Spar Garage, located south-west of Lostock Green in Broken Cross. The proposed new Public Right of Way (PROW) diverts pedestrians initially opposite direction, to the north-east of Lostock Green, then doubles back; thereby increasing the return walking distance by c.80% from the current baseline journey of c.2.7km (1.7 miles) to c. 5km (3miles).

3.3.7.4. [RESPONSE] HS2* should undertake to re-address the proposed removal of existing baseline location pedestrian and cycle crossing point of the A556 Shurlach Road dual carriage from Birches Lane (south) to Birches Lane (north) (Chainage ML 268+800).

3.3.7.5.[RESPONSE] HS2* should undertake to engage with Lach Dennis Parish Council and Cheshire West and Chester Council Local Authority to reach an acceptable design for a pedestrian and bicycle crossing point the existing crossing baseline locality re provision of:

- A pedestrian and bicycle under bridge the proposed high speed rail scheme, HS2 Phase2b And either:
- A pedestrian and bicycle crossing point of the re-routed A556 Shurlach Road dual carriage by staggered gap pedestrian bicycle crossing in central reservation (as per existing baseline Birches Lane/A556 crossing) Or:
- A crossing the re-routed A556 Shurlach Road dual carriage by overbridge

3.3.8. New PROW access from Birches Lane (south) to Birches Lane (north) under the proposed route of HS2 Phase 2b and re-routed A556 Shurlach Road Refer to route as shown in HS2 2b Hybrid Bill Env. State.Doc. 25 Map No MA02 CT-06-315 C6, D5, D6, E5, E6.

3.3.8.1. [RESPONSE] Lach Dennis Parish Council's view is that the replacement of the existing baseline pedestrian and cycle crossing point (Chainage ML 268+800) from Birches Lane (south) across A556 Shurlach Road to Birches Lane (north) with a c.400m road diversion of Birches Lane (south) and a new c.700m PROW is not satisfactory for pedestrian and cycle access from Birches Lane (south) to Birches Lane (north). The replacement Public Right Of Way one way route for

pedestrians and cyclists to nearest community services is lengthened by 1100m from Lostock Green.

3.3.8.2. [OBJECTION] The road diversion of Birches Lane (south) and new Public Right Of Way lessens the opportunity for enhancing the health and wellbeing of the publicly accessible areas and local community services and facilities for the Lostock Green community and does not, has not meet the approach 'avoid or reduce effects on the visual amenity of residential communities, receptors and users of the landscape' Environmental Statement Document Non-technical Summary Doc M13 Pages 65 to 67 section 7.12 and Figure 17.

3.3.8.3. [OBJECTION] The replacement of the existing Birches Lane A556 Shurlach Road non-vehicular crossing point with a road diversion of Birches Lane (south) and new Public Right Of Way route for pedestrians and cyclists lessens the health and wellbeing of pedestrians, cyclists, particularly single pedestrians both during day time and the hours of darkness. The whole route of the realigned Birches Lane (south) and new Public Right Of Way route is flanked by trees and vegetated mounds restricting the visibility of users to others.

3.3.8.4. [RESPONSE] The Environmental Statement's proposed road diversion of Birches Lane (south) and new Public Right Of Way should maintain the features of the existing crossing and route along Birches Lane (south and north) that give the pedestrians visibility to others, thereby lessening potential vulnerabilities of walking on a public right of way that is isolated and hidden from view.

3.3.8.5.[RESPONSE] Features that enhance security of the realigned Birches Lane (south) and new Public Right Of Way are:

- Adjacent to a public highway
- Public lighting
- Hard surface suitable for pedestrians, pushchairs, wheel chairs, cyclists
- Pavement along road diversion of Birches Lane (south)
- Where possible sited adjacent to housing

3.3.8.6. [RESPONSE] HS2* should undertake to engage with Lach Dennis Parish Council and Cheshire West and Chester Council Local Authority to re assess and agree on an acceptable design with Lach Dennis Parish Council and Chester and Cheshire West Council Local Authority for the proposed

replacement of the existing baseline pedestrian and cycle crossing point (Chainage ML 268+800) from Birches Lane (south) across A556 Shurlach Road to Birches Lane (north).

3.3.9. Replacement of A556 Shurlach Road pedestrian and cycle crossing with the provision A556 Shurlach Road Culvert as a joint PROW underbridge

3.3.9.1. [RESPONSE] Lach Dennis Parish Council's view is that the provision pedestrian and cycle access for non-vehicle users from Lostock Green Village and Penny's Lane, Lach Dennis is a vital transport link to prevent community severance and isolation of Lostock Green.

3.3.9.2.[RESPONSE] Lach Dennis Parish Council residents have raised the provision of using the proposed A556 Shurlach Road Culvert underbridge (Chainage ML 268+075) as a joint new PROW underbridge with Lach Dennis and Lostock Green Parish Councillors. Esther McVey MP Tatton, Cheshire West and Chester Councillors and HS2 Ltd.

3.3.9.3. [RESPONSE] HS2* have an opportunity to improve and enhance community accessibility and prevent mitigate community severance and isolation of Lostock Green as a consequence of the construction of the HS2 2b high speed infrastructure by the provision of:

- a new PROW from the south west termination of Village Close through the tree planted HS2 Phase 2b rail line landscape mitigation zone on east side of proposed HS2 2b route.
- a pedestrian and cyclists accessible underbridge in conjunction the proposed A556 Shurlach Road Culvert underbridge beneath the Rudheath embankment (Chainage ML 268+075).

3.3.9.4. [OBJECTION] For the 300 and more residents of Lostock Green the poor-quality pedestrian access provision and the adverse impact from reduced community connectivity, proposed by the Government / Department for Transport / HS2 Ltd in the Environmental Statement is in stark contrast to the Government / Department for Transport / HS2 Ltd's provision for underbridge crossing points of the HS2 2b high speed route for 2 footpaths across the Royal Cheshire Show Ground, a non-residential area.

- Footpath Tabley Inferior 1/1 Accommodation Underbridge FP1/1(Env. State. Doc 26 Map No CT-05-317 A6/7, B6/7)

- Footpath Pickmere P9/1 Underbridge(Env. State. Doc 26 Map No CT-05-317 H7)

3.3.9.5. The provision for underbridges for two rarely used footpaths, probably 3 to 5 days a year, when the Royal Cheshire Show is taking place contrasts with the Government / Department for Transport / HS2 Ltd's failure and omission to maintain essential, frequently used on a daily basis from Lostock Green to access the nearest local services and amenities.

3.3.9.6. The dimensions of the proposed A556 Shurlach Road Culvert accommodation underbridge under Rudheath Embankment are:

- 4.6m height Rudheath Embankment
- 900 m from east termination of Rudheath Embankment
- 1000 m from west termination of Rudheath Embankment

3.3.9.7. The dimensions proposed A556 Shurlach Road Culvert joint new PROW underbridge closely match the dimension for embankment viaduct height and horizontal distances for Footpath Tabley Inferior 1/1 Accommodation Underbridge Pickmere Embankment

- 1000m from west termination of Pickmere Embankment
- c.5m Pickmere Embankment height

3.3.9.8.[RESPONSE] HS2* should undertake to engage with Lach Dennis Parish Council and Cheshire West and Chester Council Local Authority on the provision of a new PROW and provision the A556 Shurlach Road Culvert as a joint PROW underbridge.

3.3.10. Diversion of the A556 Shurlach Road

3.3.10.1. [OBJECTION] The construction of the Rudheath Embankment and the diversion of the A556 Shurlach Road/Chester Road will result in the loss of the pedestrian, bicycle and virtually traffic free access from Birches Lane Lostock Green (north-east) via the A556 footpath, Lostock Green Picnic Area and Cookes Lane, to the nearest shop and other community facilities in Broken Cross and Rudheath.

3.3.10.2.[RESPONSE] HS2* should undertake to discuss and come to an agreement with Lach Dennis Parish Council and Cheshire West and Chester Council re revising, realigning and changing the design of access by foot and cycle from the

junction of Birches Lane (north-west) with the A556 Shurlach Road to Cookes Lane, Broken Cross.

PROMOTER'S RESPONSE:

1. The Petitioner raises concerns about local connectivity changes as a result of the Proposed Scheme, including changes to Public Rights of Way (PRoW) and local roads, as well as social capital, community and wellbeing impacts. The Promoter's response below covers these points except for connectivity during construction, which is covered separately in the following sections of this document.

Public rights of way

2. As set out in paragraph 14.5.17 in Volume 2, Community Area report: Wimboldsley to Lostock Gralam (MA02) of the main ES, the permanent realignment, diversion or extension of PRoW and roads within the Lach Dennis and Lostock Green Parish Boundary would result in severance effects, which are significant, on non-motorised users as a result of changes in journey length and/or hindrances.

3. The Proposed Scheme would require the permanent closure of Footpath Rudheath 3/4, Footpath Rudheath 3/3, Footpath Lach Dennis 3X/2 and Footpath Lach Dennis 3X/1. Users would be diverted along a proposed maintenance access to the B5082 Penny's Lane realignment, increasing the length of the journey for some users by up to 1.7km, resulting in a moderate adverse effect.

4. The Proposed Scheme requires the permanent realignment of a section of the A556 Shurlach Road up to 90m to the north-west of its current alignment for approximately 2.3km. The Proposed Scheme would also require the permanent realignment of a section of footway that runs along the eastern side of Birches Lane. The realigned footway would follow the realigned Birches Lane beneath Wade Brook viaduct, then turn north to pass beneath Wade Brook offline overbridge, before turning south as a new PRoW to re-join Birches Lane to the west of the original scheme and the realigned A556 Shurlach Road.

5. As a result, pedestrian users of Birches Lane would be subject to a moderate adverse effect on non-traffic related severance, which is significant, because of an increase in journey length of up to 881m. This would include non-motorised users travelling between Lostock Green and Lach Dennis, and Lostock Gralam Railway Station.

6. Following the main ES, the Promoter deposited Supplementary Environmental Statement (SES1) and Additional Provision 1 (AP1) for the High Speed Rail (Crewe – Manchester) Bill in Parliament in July 2022. As set out in Section 5.10 of Volume 2, Community Area report: Wimboldsley to Lostock Gralam (MA02) of the SES1 and AP1

ES, the AP1 revised scheme includes modifications to alignment of the new PRoW at Lostock Green.

7. In the AP1 revised scheme, the new PRoW would connect Birches Lane on the western side of the A556 Shurlach Road realignment and Restricted Byway Lostock Gralam 1/1 on the eastern side of the A556 Shurlach Road realignment. This would enable the segregation of cyclists from other vehicular traffic, which would provide safety benefits and reduce the risk of collisions between motorised vehicles and cyclists. These modifications would reduce the journey length for cyclists by up to 2.6km compared to the original scheme, resulting in a moderate beneficial effect on non-traffic related severance, which is significant.

8. The stated change in journey length represents the introduction of a dedicated grade separated cycle crossing facility under the A556 Shurlach Road, which at present only comprises an informal uncontrolled at grade crossing facility over the A556. The AP1 revised scheme would remove the need to travel along a section of the realigned high speed A556 Shurlach Road dual carriageway, when travelling between Birches Lane (east) to Birches Lane (west) or vice versa. Non-motorised users travelling from Lach Dennis and Lostock Green to Lostock Gralam, Lostock Gralam railway station, Broken Cross and Rudheath and vice versa would be affected.

9. The Scheme that was detailed in the main ES would require the closure of the north-eastern section of Cookes Lane. This resulted in a moderate adverse effect on non-traffic related severance for non-motorised users of Cookes Lane, which would be significant, because of an increase in journey length of up to 588m.

10. The AP1 revised scheme includes an amendment to provide a new connection for non-motorised users at the southern end of Cookes Lane, allowing access between Cookes Lane and a new shared use cycle path alongside the A556 Shurlach Road. The amendment would reduce the increase in journey length for some non-motorised users of Cookes Lane from 588m, as reported in the main ES, to 35m as reported in the AP1 SES. This would remove the moderate adverse effect on non-traffic related severance reported in the main ES.

11. The Promoter considers that the proposed arrangements in the AP1 revised scheme would provide safety benefits. The AP1 revised scheme includes an amendment to the realigned A556 Shurlach Road to improve the safety of the proposed highway realignment; the central reserve would be widened along the bend to improve visibility on the A556 southbound to the A556/A530 roundabout. In addition, a dedicated grade separated crossing facility for non-motorised users is proposed under the A556 Shurlach Road that would reduce the risk of collisions between non-motorised users and vehicles. Given the low levels of non-motorised users crossing at this location (less than 20 pedestrians per day were recorded to cross the A556 Shurlach Road on the surveyed days), the Promoter does not consider that an additional crossing facility is required, but the Promoter is in an ongoing dialogue with the Petitioner and the relevant approving highways authority, Cheshire West and Chester, in relation to this topic.

Social capital, wellbeing and community

12. The Promoter is satisfied that there has been sufficient assessment in relation to social capital and community isolation. Potential effects on social capital have been considered as part of the health assessment in Section 8, Volume 2 of the ES for MA02 and community effects, including isolation, have been assessed in the Community assessment as set out in Section 6, Volume 2 of the main ES for MA02.

13. Section 8 sets out that health determinants of relevance within the area during construction (temporary and permanent impacts) are:

- neighbourhood quality;
- access to green space, recreation and physical activity;
- education; and
- social capital.

14. The health assessment methodology is based on a review of published evidence showing how impacts on health determinants are linked to health effects in a large population.

15. As set out in paragraphs 8.4.20 to 23, the term 'social capital' refers to the connections between individuals within communities, and the increased likelihood that arises through these networks for individuals to feel valued, to feel a sense of belonging, to have companionship and to support each other. The Office for National Statistics¹ defines social capital as follows:

"In general terms, social capital represents social connections and all the benefits they generate. Social capital is also associated with civic participation, civic-minded attitudes and values which are important for people to cooperate, such as tolerance or trust."

16. There is moderate evidence for a link between social capital and mental and physical health outcomes. A change in social capital has the potential to influence the mental health effects that are gained through social contact and support, social participation, reciprocity, and trust.

17. As set out in paragraph 6.2.5, of the Community assessment, Volume 2 of the ES for MA02, isolation effects may arise from either physical islanding of properties or an increase in journey times and/or distance between residential areas and the community resources that residents use on a regular basis.

¹ Office for National Statistics (2014), Measuring social capital. Available online at: https://webarchive.nationalarchives.gov.uk/20160107115718/http://www.ons.gov.uk/ons/dcp171766_371693.pdf.

18. The Promoter wishes to clarify that the ES does not state that Lostock Green has a range of community resources, but paragraph 6.3.18 does state that Lostock Gralam has several community facilities.

19. The Promoter is aware of the importance of maintaining community cohesion within communities and has therefore put in place a bespoke engagement team to listen and respond to concerns of communities along the line of the Phase 2b route.

20. In line with the Public Services (Social Value) Act 2012, the nominated undertaker is expecting its contractors to provide a service that benefits and improves the local areas they work in - going beyond their immediate construction role.

21. This equates to the contractors having a strong commitment to Corporate Social Responsibility (CSR) by investing their time, skills, people and equipment in the local community. In addition, there is the potential for contractors to support local projects and activities, provided there's no conflict with the Promoter's route-wide community funds.

22. Each contractor is required to identify, plan and manage this local CSR activity through a Local Community Investment Programme (LCIPs). The LCIPs should prioritise opportunities that have the greatest impact on the local community. However, the activities should also be proportionate to the extent of the impact as a result of the Proposed Scheme on a particular community.

HOUSE OF COMMONS SELECT COMMITTEE

HIGH SPEED RAIL (CREWE - MANCHESTER) BILL

PROMOTER'S RESPONSE TO PETITION OF: Lach Dennis Parish Council

PETITION NO: HS2-P2B-011

PARAGRAPH NO: 3.4.1 – 3.4.3.2

ISSUE RAISED: Construction

PETITION PARAGRAPH: 3.4.1. Construction traffic routes

3.4.1.1. [RESPONSE] HS2* should undertake to engage with Lach Dennis Parish Council, other affected Parish Councils and Cheshire West and Chester Council Local Authority to reach an acceptable mitigation design to reduce and eliminated the negative environmental community impacts during construction from construction traffic routes using 'principal highways in the area include the A556 Chester Road/Shurlach Road, the A530 King Street, the A530 Nantwich Road, the A559 Manchester Road' within and immediately adjacent to Lach Dennis and Lostock Green Parish.

3.4.1.2.[OBJECTION] Lach Dennis Parish Council's view is that there will be a worsening of the existing baseline traffic hazards and traffic congestion on the major arterial routes and highways south and east of Northwich as a direct consequence of the additional traffic generated by the proposed construction of HS2 2b high speed route dates 2025 to 2031.

3.4.1.3. [OBJECTION] The concern is traffic hazards and traffic congestion is expressed by the Resident's comment: 'I live just off the King St/A556 junction which suffers massive congestion at peak times. The proposed closure and realignment of this major trunk road and the plan to 'squeeze' it next to the TATA chemicals lagoons to accommodate the new railway will cause unbelievable, long term disruption. This is exasperated by the approved building of the giant industrial waste incinerator on Griffiths Road to handle 600,000 tonnes of waste per annum. This was fought against by both residents and local and county councils but, despite this, was approved by the Secretary of State. It is estimated that hundreds of HGVs per day will now pass my property to gain access. The highways are already

inadequate and the resulting increased congestion, noise and pollution just beggar belief.'

3.4.1.4. [RESPONSE] Lach Dennis Parish Council want HS2* to undertake to discuss with and satisfy Lach Dennis Parish Council on how the Department for Transport / HS2 Ltd will address the existing traffic and additional HS2 2b construction traffic movements and diversions:

- A530 King Street Northwich to Middlewich: including temporary highway diversion/realignment at Morrisons Roundabout
- A556 Shurlach Road / Chester Road dual carriage way trunk road: from west of A530/A556 Broken Cross roundabout to A559 Manchester Road/A556 Chester Junction to M6 including temporary Highway diversion/realignment at Lostock Triangle
- Manchester Road A559: from Griffiths Road to A559 Manchester Road/A556 Chester Junction including temporary Highway diversion/realignment at Lostock Triangle
- Birches Lane Station Road A556 to A559: 'Unsuitable for heavy goods vehicles' designated by CWAC Highways and signed at junction A556 eastbound with Birches Lane NW.
- Lostock Hollow: Narrow stone road bridge on bend over Wade Brook frequently damaged by large vehicles.
- Griffiths Road A530 from A559 Manchester Road junction to Griffiths Road A556 roundabout: Height restriction at Mid Cheshire Rail Line overbridge.
- Height restriction at overbridge carrying high temperature liquid chemical slurry in open conduit.
- Crowder's Lane and Penny's Lane:
- 35° angle road junction Crowder's Lane to/from Penny's Lane.
- Road junction on blind bend at road to Boundary Farm south off Crowder's Lane
- Blind Z bends on Crowder's Lane

3.4.2. Construction Compounds

3.4.2.1. [OBJECTION] Lach Dennis Parish Council have significant concerns re the siting, within Lach Dennis and Lostock Green Parish Boundary and neighbouring Parishes, of high numbers and density of engineering satellite compounds, temporary material stock piles and very large area of land required during construction. The amount of land required for construction of the HS2 2b high speed rail scheme will have significant effects on the 'social capital' of communities of

Lostock Green, Lach Dennis and the scattered properties and farms from the proposed construction dates 2025 to 2031.

3.4.2.2. The communities of Broken Cross, Rudheath, Lostock Green, Lostock Gralam and Ascol Drive (Chainage ML 267+000 to ML 270+700) are located in the area with the highest number of residential properties and people on the proposed HS2 Phase 2b rail line route from the Crewe Tunnel North Portal to Manchester Airport, and Golborne.

3.4.2.3. [OBJECTION] In the area within Lach Dennis and Lostock Green Parish, between A530 King Street roundabout (Chainage ML 267+000) and the A559 Manchester Road/A556 Chester Junction (Chainage ML 270+500) there are located:

- 7 to 9 civil engineering satellite construction compounds
- 7 large temporary material stock piles
- 13 smaller temporary material stock piles
- Land required during construction (shaded pink) equivalent to c.120 football pitches

3.4.2.4.[RESPONSE] Lach Dennis Parish Council want HS2* to undertake to engage with and satisfy Lach Dennis Parish Council and other affected Parishes on how the Department for Transport / HS2 Ltd will address, record, mitigate, reduce and avoid the likely significant negative environmental and community impacts of such a high number and density of engineering satellite compounds, temporary material stock piles and extensive area of land required during construction re:

- Noise
- Vibration
- Lighting
- Night time construction activities
- Airborne dust
- Works material spread on public roads
- Integrity of road verges and road side utilities
- Construction traffic movement and volume
- Road diversions
- Public rights of way access from and to communities
- Other construction activities that create negative environmental and social capital impact

3.4.2.5.[RESPONSE] Lach Dennis Parish Council want HS2*to undertake to engage with and satisfy Lach Dennis Parish Council and other affected Parishes re:

- Locating the engineering satellite construction compounds, temporary material stock piles further away from the communities of Broken Cross Rudheath, Penny's Lane Lach Dennis, Lostock Green, Lostock Gralam, and Ascol Drive to mitigate and avoid the negative impact on communities during construction; in particular:
 - Moving the large Gadbrook Viaduct North Satellite Compound, with 80 to 205 workers/staff present for the long time of 6 years and 6 months from 2025, south and to the site of the Rudheath Embankment Satellite Compound. The Gadbrook Viaduct North Satellite Compound would be closer to the Gadbrook Viaduct and away from the residential area of Broken Cross to the area of the Rudheath Embankment Satellite Compound.
 - Moving the smaller Rudheath Embankment Satellite Compound present for the shorter time of 3 years 3 months from 2027 to north to the site of Gadbrook Viaduct North Satellite Compound south to mitigate negative impact on the Broken Cross residential area.
 - No variation to extend work hours to be permitted. For the interest of community well-being.

3.4.3. Temporary worker accommodation

3.4.3.1. [OBJECTION] Lach Dennis Parish Council have significant concerns re the siting of temporary worker accommodation at the Gadbrook Viaduct North Satellite Compound:

- Will have adverse effect on the 'Social capital' of communities of Lostock Green, Lach Dennis and the scattered properties and farms within Lach Dennis and Lostock Green Parish Boundary
- Will intensify the exiting traffic problems at the A530 King Street / A556 Shurlach Road roundabout and increase the traffic volume during the HS2 2b high speed rail scheme construction period thereby creating a negative impact on local residents' traffic movement. 'The presence of construction workers is likely to be noticeable, with construction vehicles using assigned local roads to access compounds, and workers using facilities in local settlements'

3.4.3.2. [RESPONSE] Lach Dennis Parish Council want HS2* to undertake to engage with and satisfy Lach Dennis Parish Council and other affected Parishes to review the location and the access to and from the temporary worker accommodation at the Gadbrook Viaduct North Satellite Compound

PROMOTER'S RESPONSE:

1. The following responses cover the points raised in the petition relating to construction traffic routes (3.4.1), construction compounds (3.4.2) and temporary worker accommodation (3.4.3). These outline proposed changes to the local road network during construction, construction traffic impacts and how they will be managed, the rationale for siting of construction compounds and information on temporary worker accommodation. Engagement would continue on these matters, principally with the Local Highway Authority and Local Planning Authority, taking into account relevant considerations raised by the Petitioner.

Proposed road network changes during construction

2. The Proposed Scheme would require a temporary diversion of a section of the A530 King Street, 50m east of its existing alignment, which would be in use for approximately seven months, resulting in a negligible change in journey length. On completion of construction, the A530 King Street would be reinstated along its existing alignment.

3. A section of the A556 Shurlach Road would be realigned for up to 90m to the north-west of its current alignment for 2.3km, resulting in a negligible change in journey length.

4. Figure 14 in Volume 2, Community Area report: Wimboldsley to Lostock Gralam (MA02) of the main ES indicates the permanent realignment of the A556 Shurlach Road, including the Wade Brook viaduct would take three years and three months to complete. The realigned carriageway would be constructed offline, with two traffic lanes retained in each direction on the existing alignment of the A556 Shurlach Road while these offline works are taking place.

5. Temporary traffic management measures would be required to construct the tie-ins of the A556 Shurlach Road realignment at its interface with the existing road alignment, which may require short term lane closures, or road closures at weekends or overnight, when the road network is less busy.

6. The Proposed Scheme also requires a temporary realignment of the A556 Shurlach Road/Chester Road at its junction with the A559 Manchester Road over a distance of approximately 240m, and up to 22m to the north of its existing alignment. This temporary highway realignment would be in use for up to two years and six months, resulting in a negligible change in journey length.

7. The A559 Manchester Road would also be temporarily realigned over a distance of approximately 335m, and up to 25m north of its existing alignment, which would be in use for up to two years and six months, resulting in a negligible change in journey length.

8. The current configuration of both the A556 Shurlach Road/Chester Road and the A559 Manchester Road would be reinstated upon completion of the construction of the Smoker Brook viaduct.

Construction traffic routes – general

9. The Promoter recognises the local nature of some of the roads identified as construction site access routes, and where reasonably practicable, may limit their use in accordance with the draft CoCP – paragraph 14.2.7 of which states that:

“site specific traffic management measures will include (...) as appropriate, use of internal haul routes for construction vehicles to minimise the need to use public roads.”

10. The roads that are proposed to be used for HS2 construction HGV movements are shown on the TR-03 and TR-08 map series, included in the hybrid Bill Traffic and Transport Map Book and SES1 and AP1 Volume 5 Transport Assessment Map Book.

11. The draft CoCP provides a consistent approach to the management of construction traffic. HS2 Phase 2b Western Leg Information Paper E3: Management of Traffic During Construction sets out that the nominated undertaker would be required to prepare a Route-wide Traffic Management Plan and Local Traffic Management Plans, with local highway and traffic authorities as well as emergency services. As set out in the draft CoCP at 14.2.2 to 14.2.6, these would include, as appropriate:

- a list of roads which may be used by construction traffic in the vicinity of the site including any restrictions to construction traffic on these routes, and including any commitments set out in the register of Undertakings and Assurances;
- temporary and permanent closures or stopping up and diversions of highways and other PRow;
- lorry route signing strategy;
- means of monitoring lorry use and any routes prohibited from use;
- dealing with large goods vehicles and abnormal loads; and
- clear identification for construction heavy goods vehicles under the lead contractors' control.

12. As part of these controls, the nominated undertaker would require contractors to reduce the impacts on local communities from construction traffic, and for public vehicle access to be maintained, where reasonably practicable.

13. Under the planning regime established under Schedule 17 to the Bill the nominated undertaker would be required to seek approval from the relevant

qualifying authority (that is the relevant planning authority for the area, the unitary authority or in a non-unitary area, the County Council) for the use by large goods vehicles of any routes to and from a working or storage site, a site where material will be re-used, or a waste disposal site (this does not apply to routes that only provide access to a site that generates less than 24 large goods vehicle movements per day, nor to motorways and trunk roads or any part of the route beyond a motorway or trunk road). This is explained further in HS2 Phase 2b Western Leg Information Paper B2: The Main Provisions of the Planning Regime.

Traffic congestion on the major arterial routes south and east of Northwich

14. The Promoter notes the Petitioner's comments regarding traffic congestion on major arterial routes south and east of Northwich. This section of the A556 Shurlach Road, which is a dual carriageway road, runs between the A530 King Street and the A559 Manchester Road. These are addressed in turn below.

A556 Shurlach Road

15. The A556 Shurlach Road is designated as an HS2 construction route. Table 14-5 in the Transport Assessment Part 3 Addendum for Wimboldsley to Lostock Gralam (MA02) in Volume 5, Appendix: TR-003-00002 of the SES1 and AP1 ES summarises the peak daily construction traffic flows associated the AP1 revised scheme. This indicates that the A556 Shurlach Road between the A530 King Street and the A559 Manchester Road would carry a peak daily two-way combined flow of 828 HGVs over an assumed 10-hour working day, which equates to just over one HGV every minute on average. The busy period is expected to be eight months in duration.

16. There was forecast to be major adverse effects on traffic-related severance due to changes in total traffic and total HGVs on the section of the A556 Shurlach Road between Birches Lane and the A559 Manchester Road during construction, as set out in Table 50 and Table 51 in Volume 2, Community Area report: Wimboldsley to Lostock Gralam (MA02) of the main ES respectively. There was also forecast to be a moderate adverse effect on traffic-related severance due to changes in total HGVs on the section of the A556 Shurlach Road between the A530 King Street and Birches Lane, as set out in Table 51 in Volume 2, Community Area report: Wimboldsley to Lostock Gralam (MA02) of the main ES.

17. The assessment of the A556 Shurlach Road has been updated for the AP1 revised scheme and is reported in Table 22 and Table 23 of Volume 2, Community Area report: Wimboldsley to Lostock Gralam (MA02) of the SES1 and AP1. The major adverse effects on traffic-related severance due to changes in total traffic and total HGVs on the section of the A556 Shurlach Road between Birches Lane and the A559 Manchester Road during construction as reported in the main ES remain unchanged in the SES1 and AP1 ES.

18. The AP1 revised scheme sub-divides the section of the A556 Shurlach Road previously reported between the A530 King Street and Birches Lane into two sections:

the A556 Shurlach Road between the A530 King Street and Penny's Lane and the A556 Shurlach Road between Penny's Lane and Birches Lane. Table 23 of the SES1 and AP1 ES reports a moderate adverse effect on traffic-related severance due to changes in total HGVs on the section of the A556 Shurlach Road between the A530 King Street and Penny's Lane and a major adverse effect on the A556 Shurlach Road between Penny's Lane and Birches Lane.

19. The changes in traffic along these sections of road during construction of the AP1 revised scheme are reported in Table 14-7 and 14-8 in the Transport Assessment Part 3 Addendum for Wimboldsley to Lostock Gralam (MA02) in Volume 5, Appendix: TR-003-00002 of the SES1 and AP1 ES.

20. This indicates that the section the A556 Shurlach Road between the A530 King Street and the B5082 Penny's Lane would carry 3,267 vehicles per hour in the AM peak hour and 3,356 vehicles per hour in the PM peak hour during the 2030 future baseline (without HS2 construction activity).

21. During construction of the AP1 revised scheme, traffic flows on the section of the A556 Shurlach Road between the A530 King Street and the B5082 Penny's Lane are forecast to increase to a maximum of 3,519 vehicles per hour in the AM peak hour, an increase of 252 vehicles (8%) compared with the 2030 future baseline. In the PM peak hour, traffic flows would increase to a maximum of 3,515 vehicles per hour, an increase of 159 vehicles (5%) compared with the 2030 future baseline.

22. The section of the A556 Shurlach Road between B5082 Penny's Lane and Birches Lane would carry 2,643 vehicles per hour in the AM peak hour and 2,887 vehicles per hour in the PM peak hour during the 2030 future baseline.

23. During construction of the AP1 revised scheme, traffic flows on the section of the A556 Shurlach Road between B5082 Penny's Lane and Birches Lane are forecast to increase to a maximum of 3,259 vehicles per hour in the AM peak hour, an increase of 616 vehicles (23%) compared with the 2030 future baseline. In the PM peak hour, traffic flows would increase to a maximum of 3,039 vehicles per hour, an increase of 152 vehicles (5%) compared with the 2030 future baseline.

24. The section the A556 Shurlach Road between Birches Lane and the A559 Manchester Road would carry 2,572 vehicles per hour in the AM peak hour and 2,659 vehicles per hour in the PM peak hour during the 2030 future baseline.

25. During construction of the AP1 revised scheme, traffic flows on the section of the A556 Shurlach Road between Birches Lane and the A559 Manchester Road are forecast to increase to a maximum of 3,232 vehicles per hour in the AM peak hour, an increase of 660 vehicles (26%) compared with the 2030 future baseline. In the PM peak hour, traffic flows would increase to a maximum of 2,738 vehicles per hour, an increase of 79 vehicles (3%) compared with the 2030 future baseline.

26. The Promoter considers that the A556 Shurlach Road, a dual-carriageway A-road, could accommodate the forecast traffic flows during construction of the AP1 revised

scheme. The Promoter therefore does not consider that the additional construction traffic associated with the AP1 revised scheme would materially impact the operation of the A556 Shurlach Road.

A530 King Street/Griffiths Road

27. The Promoter notes the Petitioner's comments in relation traffic congestion to the south and east of Northwich. The A530 King Street/Griffiths Road runs in an approximate north-south direction between the A530 Croxton Lane and the A559 Manchester Road.

28. The A530 King Street/Griffiths Road is designated as an HS2 construction route. Table 14-5 in in the Transport Assessment Part 3 Addendum for Wimboldsley to Lostock Gralam (MA02) in Volume 5, Appendix: TR-003-00002 of the SES1 and AP1 ES summarises the peak daily construction traffic flows associated the AP1 revised scheme. This indicates that:

- the section of A530 King Street between the A530 Croxton Lane and Whatcroft Hall Lane would carry a peak daily two-way combined flow of 514 HGVs over an assumed 10-hour working day, which equates to less than one HGV every minute on average. The busy period is expected to be four months in duration;
- the section of A530 King Street between Whatcroft Hall Lane and Davenham Road would carry a peak daily two-way combined flow of 472 HGVs over an assumed 10-hour working day, which equates to less than one HGV every minute on average. The busy period is expected to be three months in duration;
- the section of the A530 King Street between Crowders Lane and the B5082 Penny's Lane diversion would carry a peak daily two-way combined flow of 71 HGVs over an assumed 10-hour working day, which equates to approximately one HGV every 10 minutes on average. The busy period is expected to be 14 months in duration.
- the section of the A530 King Street between B5082 Penny's Lane diversion and the A556 Shurlach Road would carry a peak daily two-way combined flow of 473 HGVs over an assumed 10-hour working day, which equates to approximately one HGV every minute on average. The busy period is expected to be nine months in duration;
- the section of A530 King Street between the A556 Shurlach Road and the B5082 Middlewich Road would carry a peak daily two-way combined flow of 20 HGVs over an assumed 10-hour working day, which equates to approximately one HGV every 30 minutes on average; and
- the section of A530 Griffiths Road between the A559 Manchester Road and B5082 Middlewich Road would carry a peak daily two-way combined flow of 20

HGVs over an assumed 10-hour working day, which equates to approximately one HGV every 30 minutes on average.

29. Table 51 in Volume 2, Community Area report: Wimboldsley to Lostock Gralam (MA02) of the main ES forecast a major adverse effect on traffic-related severance due to changes in total HGVs on the section of the A530 King Street between Whatcroft Hall Lane and Davenham Road, a moderate adverse effect on traffic-related severance due to changes in total HGVs on the section of the A530 King Street between Davenham Road and the Gadbrook Distribution Centre access, a major adverse effect on traffic-related severance due to changes in total HGVs on the section of the A530 King Street between the Gadbrook Distribution Centre access and A556 Shurlach Road, and a major adverse effect on traffic-related severance due to changes in total HGVs on the section of the A530 Griffiths Road between A559 Manchester Road and B5082 Middlewich Road. No effects were reported for the section of A530 King Street between the A556 Shurlach Road and the B5082 Middlewich Road, and the section of A530 King Street between the A530 Croxton Lane and Whatcroft Hall Lane.

30. The assessment has been updated for the AP1 revised scheme and is reported in Table 22 and Table 23 of Volume 2, Community Area report: Wimboldsley to Lostock Gralam (MA02) of the SES1 and AP1. The major adverse effect on traffic-related severance on the section of the A530 King Street between Whatcroft Hall Lane and Davenham Road as reported in the main ES remains unchanged in the SES1 and AP1 ES. The moderate adverse effect on traffic-related severance due to changes in total HGVs on the section of the A530 King Street between Davenham Road and Gadbrook Distribution Centre access as reported in the main ES has been removed in the SES1 and AP1 ES. The major adverse effect on traffic-related severance due to changes in total HGVs on the section of the A530 King Street between Gadbrook Distribution Centre access and A556 Shurlach Road as reported in the main ES remains unchanged in the SES1 and AP1 ES. No effects are reported for the section of A530 King Street between the A556 Shurlach Road and the B5082 Middlewich Road and the section of A530 King Street between the A530 Croxton Lane and Whatcroft Hall Lane. The major adverse effect on traffic-related severance on the section of the A530 Griffiths Road Street between A559 Manchester Road and B5082 Middlewich Road as reported in the main ES is removed in the SES1 and AP1 ES.

31. The changes to the performance of these sections of road during construction of the AP1 revised scheme are reported in Table 14-7 and 14-8 in the Transport Assessment Part 3 Addendum for Wimboldsley to Lostock Gralam (MA02) in Volume 5, Appendix: TR-003-00002 of the SES1 and AP1 ES.

32. This indicates that the section of the A530 King Street between the B5082 Penny's Lane diversion and the A556 Shurlach Road would carry 1,491 vehicles per hour in the AM peak hour and 1,579 vehicles per hour in the PM peak hour during the 2030 future baseline.

33. During construction of the AP1 revised scheme, traffic flows on the section of the A530 King Street between the B5082 Penny's Lane diversion and the A556 Shurlach

Road are forecast to increase to a maximum of 2,673 vehicles per hour in the AM peak hour, an increase of 1,182 vehicles (79%) compared with the 2030 future baseline. In the PM peak hour, traffic flows would increase to a maximum of 2,298 vehicles per hour, an increase of 719 vehicles (45%) compared with the 2030 future baseline.

34. The section of the A530 King Street between Whatcroft Hall Lane and Davenham Road would carry 1,715 vehicles per hour in the AM peak hour and 1,879 vehicles per hour in the PM peak hour during the 2030 future baseline.

35. During construction of the AP1 revised scheme, traffic flows on the section of the A530 King Street between Whatcroft Hall Lane and Davenham Road are forecast to increase to a maximum of 1,964 vehicles per hour in the AM peak hour, an increase of 249 vehicles (15%) compared with the 2030 future baseline. In the PM peak hour, traffic flows would increase to a maximum of 1,883 vehicles per hour, an increase of 4 vehicles (<1%) compared with the 2030 future baseline.

36. The section the A530 King Street between Davenham Road and the Gadbrook Distribution Centre access would carry 1,466 vehicles per hour in the AM peak hour and 1,580 vehicles per hour in the PM peak hour during the 2030 future baseline.

37. During construction of the AP1 revised scheme, traffic flows on the section of the A530 King Street between Davenham Road and the Gadbrook Distribution Centre access are forecast to increase to a maximum of 1,950 vehicles per hour in the AM peak hour, an increase of 484 vehicles (33%) compared with the 2030 future baseline. In the PM peak hour, traffic flows would increase to a maximum of 1,592 vehicles per hour, an increase of 12 vehicles (1%) compared with the 2030 future baseline.

38. The changes to the performance of the section of the A530 Griffiths Road between A559 Manchester Road and B5082 Middlewich Road of road during construction of the AP1 revised scheme are not reported in Table 14-7 or 14-8 in the Transport Assessment Part 3 Addendum for Wimboldsley to Lostock Gralam (MA02) in Volume 5, Appendix: TR-003-00002 of the SES1 and AP1 ES as they are either unaffected from the future baseline or there are only small changes in traffic flows (HGV or all vehicles of less than 10%) compared to the future baseline daily flow.

39. The A530 King Street / Griffiths Road is a single carriageway road with a section of dual-carriageway between the Gadbrook Distribution Centre / Penny's Lane diversion and the A556 Shurlach Road, and this dual-carriageway section is where increases in traffic are forecast to be highest during construction of the AP1 revised scheme. The Promoter considers that the A530 King Street/Griffiths Road could accommodate the forecast traffic flows during construction and as such, the Promoter does not consider that the additional construction traffic associated with the Proposed Scheme would materially impact the operation of A530 King Street/Griffiths Road.

A559 Manchester Road

40. The A559 Manchester Road is a single carriageway road to the east of Northwich. The A559 Manchester Road between A530 Griffiths Road and A556 Shurlach Road is

designated as a HS2 construction route. Table 14-5 in the Transport Assessment Part 3 Addendum for Wimboldsley to Lostock Gralam (MA02) in Volume 5, Appendix: TR-003-00002 of the SES1 and AP1 ES summarises the peak daily construction traffic flows associated the AP1 revised scheme. This indicates that the A559 Manchester Road between the A530 Griffiths Road and the A556 Shurlach Road would carry a peak daily two-way combined flow of 20 HGVs over an assumed 10-hour working day, which equates to one HGV every 30 minutes on average.

41. Table 51 in Volume 2, Community Area report: Wimboldsley to Lostock Gralam (MA02) of the main ES forecast moderate adverse effects on traffic-related severance during construction due to changes in total HGVs on the sections of the A559 Manchester Road between the A530 Griffiths Road and the A559 Hall Lane, the A559 Hall Lane and Stubbs Lane, Stubbs Lane and Fryer Road, and Fryer Road and A556 Shurlach Road.

42. The assessment of this section of road has been updated for the AP1 revised scheme and is reported in Table 23 of Volume 2, Community Area report: Wimboldsley to Lostock Gralam (MA02) of the SES1 and AP1 ES. The major adverse effects on traffic-related severance on the sections of the A559 Manchester Road between the A530 Griffiths Road and the A559 Hall Lane, the A559 Hall Lane and Stubbs Lane, Stubbs Lane and Fryer Road, and Fryer Road and A556 Shurlach Road as reported in the main ES have been removed in the SES1 and AP1 ES.

43. The changes to the performance of these sections of road during construction of the Proposed Scheme are reported in Table 14-7 and 14-8 in the Transport Assessment Part 3 Addendum for Wimboldsley to Lostock Gralam (MA02) in Volume 5, Appendix: TR-003-00002 of the SES1 and AP1 ES.

44. This indicates that the section of the A559 Manchester Road between A530 Griffiths Road and the A559 Hall Lane would carry 1,445 vehicles per hour in the AM peak hour and 1,586 vehicles per hour in the PM peak hour during the 2030 future baseline.

45. During construction of the AP1 revised scheme, traffic flows on the section of the A559 Manchester Road between the A530 Griffiths Road and the A559 Hall Lane is forecast to decrease to a maximum of 1,380 vehicles per hour in the AM peak hour, a decrease of 65 vehicles (-4%) compared with the 2030 future baseline. In the PM peak hour, traffic flows would remain the same as the 2030 future baseline.

46. The section of the A559 Manchester Road between the A559 Hall Lane and Stubbs Lane would carry 1,026 vehicles per hour in the AM peak hour and 1,046 vehicles per hour in the PM peak hour during the 2030 future baseline.

47. During construction of the AP1 revised scheme, traffic flows on the section of the A559 Manchester Road between the A559 Hall Lane and Stubbs Lane is forecast to decrease to a maximum of 1,020 vehicles per hour in the AM peak hour, a decrease of six vehicles (-1%) compared with the 2030 future baseline. In the PM peak hour, traffic

flows would increase to a maximum of 1,047 vehicles per hour, an increase of one vehicle (<1%) compared with the 2030 future baseline.

48. The Promoter considers that the A559 Manchester Road could accommodate the forecast traffic flows during construction of the AP1 revised scheme. The Promoter therefore does not consider that the additional construction traffic associated with the Proposed Scheme will materially impact the operation of A559 Manchester Road.

A556 Shurlach Road/A530 King Street junction

49. This junction is a four-arm priority controlled (give way) roundabout in Community Area MA02. The A556 Shurlach Road and the A530 King Street are designated as HS2 construction routes. Table 14-5 in the Transport Assessment Part 3 Addendum for Wimboldsley to Lostock Gralam (MA02) in Volume 5, Appendix: TR-003-00002 of the SES1 and AP1 ES summarises the peak daily construction traffic flows associated the AP1 revised scheme. This indicates that:

- the A530 King Street (north) would carry a peak daily two-way combined flow of 20 HGVs over an assumed 10-hour working day, which equates to an HGV every 30 minutes on average;
- the A556 Shurlach Road (east) would carry a peak daily two-way combined flow of 829 HGVs over an assumed 10-hour working day, which equates to over one HGV every minute on average. The busy period is expected to be eight months in duration;
- the A530 King Street (south) would carry a peak daily two-way combined flow of 473 HGVs over an assumed 10-hour working day, which equates to less than one HGV every minute on average. The busy period is expected to be nine months in duration; and
- the A556 Shurlach Road (west) would carry a peak daily two-way combined flow of less than 20 HGVs over an assumed 10-hour working day, which equates to one HGV every 30 minutes on average.

50. Paragraph 14.4.26 in Volume 2, Community Area report: Wimboldsley to Lostock Gralam (MA02) of the main ES forecast a major adverse effect on traffic congestion and delay at this junction during construction.

51. The changes to the performance of the junction during construction of the Proposed Scheme were reported in Table 14-43 in the Transport Assessment Part 3 for Wimboldsley to Lostock Gralam (MA02) in Volume 5, Appendix: TR-003-00002 of the main ES.

52. This indicated that the junction would operate over capacity in both the AM and PM peak hour during the 2030 future baseline. As a result, vehicles could experience queues and delays in both peak hours.

53. During construction of the Proposed Scheme, traffic flows through the junction were forecast to increase by up to 313 vehicles in the AM peak hour compared with the 2030 future baseline (an increase of 6%) and by up to 44 vehicles in the PM peak hour (an increase of 1%). As a result, there was forecast to be an increase in queues and delays compared with the 2030 future baseline, however, the junction would continue to operate over capacity in both the AM and PM peak hours. The greatest impacts on congestion were on the A556 Shurlach Road (east) approach in the AM and PM peak hour. In the AM peak hour, the congestion indicator (VoC) on the A556 Shurlach Road (east) approach would increase from 83% in the 2030 future baseline to a maximum of 105% during construction, with a corresponding increase in queue length from one to 10 vehicles. In the PM peak hour, the VoC on the A556 Shurlach Road (east) approach would increase from 105% in the 2030 future baseline to a maximum of 109% during construction, with the queue length remaining at 11 vehicles.

54. The assessment of this junction has been updated for the AP1 revised scheme. As set out in Table 22 in Volume 2, Community Area report: Wimboldsley to Lostock Gralam (MA02) of the SES1 and AP1 ES, the major adverse effect on traffic congestion and delay at this junction during construction reported in the main ES remains with the AP1 revised scheme.

55. The changes to the performance of the junction during construction of the AP1 revised scheme are reported in Table 14-43 in the Transport Assessment Part 3 Wimboldsley to Lostock Gralam (MA02) in Volume 5, Appendix: TR-003-00002 of the SES1 and AP1 ES.

56. The updated assessment indicates that the junction would operate close to capacity in the AM peak hour and over capacity in the PM peak hour during the 2030 future baseline. As a result, vehicles could experience queues and delays in both peak hours.

57. During construction of the AP1 revised scheme, traffic flows through the junction are forecast to increase by up to 626 vehicles in the AM peak hour compared with the 2030 future baseline (an increase of 13%) and decrease by six vehicles in the PM peak hour, (an increase of <1%). As a result, there is forecast to be a change in queues and delays compared with the 2030 future baseline, and the junction would operate close to capacity in both the AM and PM peak hours.

58. The greatest impacts on congestion are on the A530 King Street (south) approach in the AM and PM peak hour. In the AM peak hour, the VoC on the A530 King Street (south) approach would increase from 85% in the 2030 future baseline to up to 100% during construction, with a corresponding increase in queue length from two to 10 vehicles. In the PM peak hour, the VoC on the A530 King Street (south) approach would increase from 106% in the 2030 future baseline to a maximum of 112% during construction, with the queue length remaining at nine vehicles.

59. The Promoter has reviewed the need for mitigation at this junction and is in an ongoing dialogue with the local highway authority in relation to this matter.

60. The Promoter has used the Northwich Strategic Model to assess the likely impacts during construction and operation of the Proposed Scheme in community area MA02. The Northwich model was developed by Cheshire West and Chester Council, who released a version of this strategic traffic model to the Promoter in January 2019. The model provided to the Promoter includes developments and transport infrastructure schemes that are included in the future baseline. The proposed TATA incinerator is included in the future baseline traffic model received from Cheshire West and Chester Council from 2030 onwards and, therefore, has been taken into account in the assessment of the Proposed Scheme during both construction and operation.

Birches Lane, Station Road and Lostock Hollow

61. Station Road is identified as a construction traffic route in both the main ES and SES1 and AP1 ES. In the transport assessment accompanying the main ES, up to 55 HS2 construction HGVs per day were assigned to and from the Birches Lane Satellite Compound via Station Road. However, the AP1 Revised Scheme incorporates changes to the routeing of HS2 construction HGV traffic from the Birches Lane satellite compound, which reduced the number of HS2 construction HGVs that are assigned to and from the Birches Lane Satellite Compound via the Station Road route to a maximum of 20 vehicles per day. This reduced level of use reflects that the route via Station Road is only expected to be used occasionally by HS2 construction HGVs when direct access to/from the Birches Lane Satellite Compound via the A556 Shurlach Road is not possible.

A530 Griffiths Road

62. Changes to the potential impacts and likely significant effects arising from the AP1 Revised Scheme are reported in the Phase 2b (SES1) and AP1 ES Volume 2 Community Area Reports, and SES1 and AP1 Volume 5 Transport Assessments. AP1, as introduced in July 2022, incorporates changes to the routeing of HS2 construction HGV traffic from the Birches Lane satellite compound, which would reduce the number of HS2 construction HGVs that would use the A530 Griffiths Road to access the Birches Lane Satellite Compound to a maximum of 20 vehicles per day. This reduced level of use reflects that the route via the A530 Griffiths Road is only expected to be used occasionally by HS2 construction HGVs, should direct access to/from the Birches Lane Satellite Compound via the A556 Shurlach Road not be possible. The contractor appointed by the nominated undertaker would take into account the height restriction at the mid-Cheshire Line overbridge in routing construction vehicles along the A530 Griffiths Road.

Crowder's Lane and Penny's Lane

63. As set out in paragraph 14.5.6 in Volume 2, Community Area report: Wimboldsley to Lostock Gralam of the main ES, the existing B5082 Penny's Lane would be stopped

up where it is crossed by the route of the Proposed Scheme. It would be retained as an access on both sides of the route of the Proposed Scheme, with turning heads provided to facilitate vehicle access on the retained sections of the road. A section of the B5082 Penny's Lane would be diverted approximately 420m south of its current alignment, connecting with the A530 King Street as a new fourth arm of the existing A530 King Street/Gadbrook Distribution Centre roundabout junction, increasing journey length for some users by up to 468m. The diversion is less than 1km in length and would therefore not result in any significant effects with regard to changes in journey times for vehicle occupants. There would however be a moderate adverse severance effect, which is significant, on non-motorised users of the B5082 Penny's Lane due to an increase in journey length of 908m for some users.

64. A proposed construction traffic route from the A530 King Street to B5082 Penny's Lane is illustrated in maps CT-05-313, CT-05-313-R1 and CT-05-414-R1. These maps illustrate, in areas shaded in pink, land that may be required on a temporary basis for temporary highway works around bends and junctions along Crowder's Lane between the A530 King Street and B5082 Penny's Lane.

Compounds, temporary material stockpiles and land required during construction

65. As set out in HS2 Phase 2b Western Leg Information Paper D2: Construction compounds, construction compounds would be required at various locations along the proposed route and would generally be sited alongside or adjacent to the relevant proposed works.

66. Main construction compounds would act as strategic hubs for core project management activities (i.e. engineering, planning and construction delivery) and for office based construction personnel. They would include offices, storage for materials (such as aggregates, structural steel, steel reinforcement) and laydown areas, and maintenance and parking facilities (for site plant, lorries, and staff cars), together with the main welfare facilities for construction personnel. Workers' accommodation may be provided at some of these construction compounds and the ES Volume 2 Community Area Reports indicate where they would be located. Where construction compounds are used for construction worker accommodation, the arrangements would be subject to approval under Schedule 17 (Conditions of deemed planning permission) of the Bill.

67. The siting of construction compounds has been influenced by a number of factors, including:

- proximity to major road network; proximity to local A roads and rail/bus routes;
- easy accessibility for the local workforce;
- suitable existing topography with minimal requirement for site preparation works;

- proximity to existing utilities for ease of establishing temporary services;
- ease of establishing and maintaining security;
- adequate space;
- the location of floodplains; and
- the existing use of the site.

68. Other environmental effects have been considered, including:

- the effects of changes to the noise levels, light, visual impact and air quality;
- the presence of all known Sites of Special Scientific Interest; and
- the location of aquifer, surface water courses and flood plains.

69. There are six compounds between the A530 King Street roundabout (Chainage ML 267+000) and the A559 Manchester Road/A556 Chester Junction (Chainage ML 270+500), which are Gad Brook viaduct satellite compound, Rudheath Embankment satellite compound, Penny's Lane satellite compound, Birches Lane satellite compound, Lostock Gralam underbridge satellite compound and Smoker Brook viaduct south satellite compound.

70. The four transfer nodes associated with the above compounds are Rudheath Embankment transfer node, Penny's Lane transfer node, Birches Lane transfer node; and Smoker Brook viaduct transfer node.

71. There are 19 temporary materials stockpiles between the A530 King Street roundabout (Chainage ML 267+000) and the A559 Manchester Road/A556 Chester Junction (Chainage ML 270+500).

72. The compounds would be used to manage construction of Gad Brook viaduct, A530 temporary alignment, B5082 Pennys Lane Diversion, B5082 Penny's Lane telecommunications site, Rudheath embankment, A556 Chester Road / Shurlach Road realignment, Birches Lane diversion, Wade Brook offline overbridge, Wade Brook viaduct, Lostock Gralam south embankment, Lostock Gralam viaduct, Lostock Gralam north embankment, A556 Chester Road auto-transformer station, Smoker Brook viaduct and A556 / A559 junction temporary realignment.

73. The elements listed above are significant and complex civil engineering structures. The proposed locations of the compounds are immediately adjacent to these major works and would allow direct access for the nominated undertaker's management and workforce.

74. The Promoter has taken into account the local road network, Wade Brook, Mid-Cheshire Railway Line, and existing utility assets when assessing the number and locations of construction compounds required to complete the works. The proposed route crosses the road network at four locations as well as crossing Wade Brook, Mid-Cheshire Line, and Inovyn Private utilities. These crossings act as blockers between work sites within the Bill limits, effectively islanding work areas. The road network, watercourse, railway line and utilities break the Bill limits up into six distinct work areas, hence the corresponding six construction compounds. Similarly, transfer nodes and temporary materials stockpiles have been provided for each area.

75. The Bill limits between the A530 King Street roundabout and the A559 Manchester Road/A556 Chester junction are not solely for the civil engineering works. Much of the area is needed for utility works, which are likely to take place prior to the main civil engineering works during the area Advance Works, as follows:

- permanent diversion of a Scottish Power Energy Networks 33kV overhead power line;
- permanent diversion of five INOYVN electricity cables;
- permanent diversion of four Scottish Power Energy Networks electricity cables;
- permanent diversion of three United Utilities potable water mains;
- permanent diversion of two TATA Chemicals Europe electricity cables;
- permanent diversion of a Cadent Gas main;
- decommissioning of a Cadent Gas main;
- permanent diversion of an INOYVN petrochemical main;
- decommissioning of three Scottish Power Energy Networks electricity cables;
- permanent diversion of an INOYVN telecommunication cable;
- diversion of an underground Cadent Gas local distribution 150mm high pressure gas pipeline;
- diversion of an underground National Grid gas transmission 900mm high pressure gas pipeline;
- permanent diversion of a Scottish Power Energy Networks 132kV overhead line for 1.6km to the east of the route of the Proposed Scheme and the A556 Shurlach Road;

- permanent diversion of an underground United Utilities 300mm potable water trunk main;
- permanent diversion of an underground Cadent Gas local distribution 300mm high pressure gas pipeline;
- permanent diversion of an underground Sabic Pipelines 8-inch high pressure ethylene pipeline;
- permanent diversion of two Cadent Gas mains;
- permanent diversion of an INOYVN electricity cable;
- permanent diversion of a Scottish Power Energy Networks electricity cable;
- permanent diversion of a Scottish Power Energy Network 11kV overhead powerline;
- permanent diversion of five INOYVN electricity cables;
- permanent diversion of 12 INOYVN potable water mains;
- permanent diversion of an INOYVN telecommunication cable;
- decommissioning of two United Utilities potable water mains;
- permanent diversion of a United Utilities potable water main;
- decommissioning of a Scottish Power Energy Networks electricity cable;
- permanent diversion of 16 INOYVN potable water mains;
- permanent diversion of four Scottish Power Energy Networks electricity cables;
- permanent diversion of two INOYVN electricity cables;
- permanent diversion of a United Utilities wastewater main;
- permanent diversion of an INOYVN telecommunication cable;
- permanent diversion of an underground Cadent Gas local distribution 600mm high pressure gas pipeline;
- permanent diversion of seven underground CLH Pipelines 250mm fuel pipelines; and

- permanent diversion of two Cadent Gas mains.

76. The Proposed Scheme also allows for areas of landscape mitigation planting within the Bill limits, which are not part of the main civil engineering works. These areas of mitigation planting are shown in the Volume 2 Map Book for MA03, CT-06-314 (D6 to E7), CT-06-315 (H6 to J10), and CT-06-136a (B4 to C7).

Draft Code of Construction Practice

77. The nominated undertaker would require its contractors to apply, and to comply with, the requirements of the draft CoCP and would ensure the use of best practicable means to minimise the effect of the construction site on the local environment.

78. The nominated undertaker and other contractors will comply with the Environmental Minimum Requirements, which set out commitments to mitigate the environmental impact of the Proposed Scheme, which sit alongside the environmental controls contained in the Bill. Controls on the environmental impacts of construction works include:

- the control of environmental impacts of construction arrangements through planning conditions under Schedule 17 of the Bill. For construction arrangements relating to handling of re-useable spoil or topsoil; storage sites for construction materials, spoil or topsoil; works screening; artificial lighting; dust suppression and road mud control measures approval may be granted through a class approval from the Secretary of State. For construction arrangements relating to road transport and construction compounds, approval will be sought from the relevant qualifying authority who may refuse to grant approval or impose conditions subject to the grounds set out in paragraphs 4(6) and 6 of Schedule 17. HS2 Phase 2b Western Leg Information Paper B2: Main provisions of the planning regime, provides further detail; and
- the requirement to obtain consents from the relevant local authority for the proposed construction works, excluding non-intrusive surveys under Section 61 of the Control of Pollution Act 1974. Further information can be found in the draft CoCP.

79. The nominated undertaker and other contractors would also prepare and operate an Environmental Management System in accordance with BS EN ISO 14001 requirements, appropriate to the scale and nature of the construction works. These will form part of the Local Environment Management Plan (LEMP), which will be prepared in accordance with the draft CoCP.

80. LEMPs would include any specific measures relevant to the local community and to any assurances and undertakings given during the passage of the Bill. LEMPs will set out how the contractor will adapt and deliver the required environmental and community protection measures within each community area.

81. A contact person would be identified for each construction compound, in order to improve liaison with the regulatory authorities.

Gad Brook viaduct satellite compound and Rudheath Embankment satellite compound

82. The Promoter considered the following factors when assessing the suitability of the location and area of the Gad Brook viaduct satellite compound:

- the location is immediately adjacent to the main elements to be constructed including the A556 Shurlach Road realignment and the Gad Brook Viaduct;
- the available area is sufficient to enable a pre-casting area to be established for manufacture of elements for construction of the Gad Brook Viaduct;
- the location provides direct access to the north abutment of Gad Brook Viaduct and adjacent section of Rudheath Embankment for construction of viaduct; and
- the location provides access directly onto A530.

83. The Petitioner's suggested alternative location for the compound at the proposed Rudheath Embankment satellite compound is not viable as the area to the south of the route is constrained by the presence of a major gas diversions and gas storage infrastructure. The overall area available at this location is insufficient to support the Gad Brook Viaduct construction activities. The B5082 Penny's Lane diversion would isolate the construction compound from the north abutment of Gad Brook Viaduct the adjacent section of Rudheath Embankment for construction of viaduct and the A556 Shurlach Road realignment.

84. Both the Rudheath embankment satellite compound and B5082 Penny's Lane satellite compound would manage the works associated with the Rudheath embankment and major utility works. Due to the existing constraints of the local road network and diverted utilities, a sufficient area is not available at a single location for the required transfer node area to the west of the route. Two smaller transfer nodes, at the Rudheath embankment satellite compound and the B5082 Penny's Lane satellite compound are the best locations to provide the required total capacity adjacent to the Rudheath embankment. The Rudheath embankment satellite compound is located next to the transfer node to provide management.

Working hours

85. As set out in section 5.2.2 of the draft CoCP, core working hours will be from 08:00 to 18:00 on weekdays (excluding bank holidays) and from 08:00 to 13:00 on Saturdays. The nominated undertaker would require that its contractors adhere to these core working hours for each site as far as is reasonably practicable or unless otherwise permitted under Section 61 of the Control of Pollution Act 1974.

86. Guidance on the site-specific variations to core hours and/or additional hours likely to be required would be included within the LEMP following consultation with the relevant local authority.

87. Except in the case of an emergency, any work required to be undertaken outside core hours (not including repairs or maintenance) would be agreed with the local authority prior to undertaking the works under Section 61 of the Control of Pollution Act 1974 within the framework set out by the LEMP and this draft CoCP.

88. To maximise productivity within the core hours, the nominated undertaker's contractors would require a period of up to one hour before and up to one hour after normal working hours for start-up and close-down of activities. This would include (but not be limited to) deliveries, movement to place of work, unloading, maintenance and general preparation works. This would not include operation of plant or machinery likely to cause a disturbance to local residents or businesses. These periods would not be considered an extension of core working hours.

89. Certain operations such as earthworks are season and weather dependent. In these instances, the nominated undertaker's contractors would seek to extend the core working hours and/or days for such operations to take advantage of daylight hours, with the consent of the relevant local authority.

90. Certain other specific construction activities would require extended working hours for reasons of engineering practicability. These activities include, but are not limited to, major concrete pours and piling/diaphragm wall works. Surveys (e.g. for wildlife or engineering purposes) may also need to be carried out outside core working hours.

91. Repairs or maintenance of construction equipment that is required to be carried out outside core working hours would normally be carried out on Saturday afternoons between 13:00 and 18:00 or Sundays between 10:00 and 17:00. Only essential repairs or maintenance works would be undertaken on Sundays.

92. In the case of work required in response to an emergency or which, if not completed, would be unsafe or harmful to the works, staff, the public or the local environment, the relevant local authority would be informed as soon as reasonably practicable of the reasons for the works and their likely duration. This information would also be made available to the HS2 helpline. Examples of the type of work envisaged include where unexpectedly poor ground conditions, encountered whilst excavating, require immediate stabilisation.

93. Abnormal loads or those that require a police escort may be delivered outside of core working hours, subject to the requirements and approval of the relevant authorities.

Worker accommodation and engagement

94. Temporary worker accommodation would be provided at the Gad Brook viaduct north satellite compound for up to 100 workers for up to two years and five months. The worker accommodation would include for providing facilities for the heavy goods vehicle drivers for the movement of materials associated with the Rudheath embankment, the Lostock Gralam south embankment, the Lostock Gralam north embankment, the four transfer nodes and the temporary materials stockpiles.

95. As set out in paragraphs 8.4.23 to 25, Volume 2 of the ES for MA03, during the day, the workforce would be present on construction sites and compounds throughout the area, including work sites and satellite compounds in the vicinity of the settlements of Rudheath, Lostock Green and Lostock Gralam. The daily average number of workers at each site would typically be around 30 to 110, and the duration of the works at each site would range from up to one year and three months to up to seven years. The presence of construction workers is likely to be noticeable, with construction vehicles using assigned local roads to access compounds, and workers using facilities in local settlements.

96. The introduction of a temporary construction workforce into established communities has the potential to negatively alter people's perceptions of, and interactions with, their communities, modifying behaviour and the value they place on social capital. Such a reduction in social capital has the potential to adversely affect wellbeing and may influence behaviours that are beneficial to wellbeing such as the use of community facilities.

97. The draft CoCP includes a commitment to produce and implement a community engagement framework and provide appropriately experienced community relations personnel to implement the framework and provide a first point of contact. HS2 Ltd would engage with local authorities and community representatives to identify measures aimed at fostering and maintaining good relationships between the workforce and local communities. Any measures identified would be included within the community engagement framework as appropriate.

HOUSE OF COMMONS SELECT COMMITTEE

HIGH SPEED RAIL (CREWE - MANCHESTER) BILL

PROMOTER'S RESPONSE TO PETITION OF: Lach Dennis Parish Council

PETITION NO: HS2-P2B-011

PARAGRAPH NO: 3.5.1 – 3.5.7.3

ISSUE RAISED: Visual, noise impacts

PETITION PARAGRAPH: 3.5.1. [OBJECTION] Lach Dennis Parish Council have significant concerns re the visual and noise impacts on the communities within the parish boundary from the construction and operation of the HS2 Phase 2b high speed rail infrastructure. Further noise fences are required 'to provide acoustic screening for the communities of ..., Lostock Green', and Penny's Lane, Lach Dennis.

3.5.2. [OBJECTION] The communities of Lostock Green and Penny's Lane, Lach Dennis will 'experience a combination of noise, visual and traffic effects from construction of the Proposed Scheme' and 'They are likely to experience this as changing the quality of their neighbourhood and to regard that change as adverse, both in diminishing the amenity of the village and in reducing the sense of its rural character'

3.5.3. [RESPONSE] Lach Dennis Parish Council note that the High-Speed Rail (Crewe to Manchester) Hybrid Bill January 2022 Environmental Statement fails to include Lostock Green and Penny's Lane Lach Dennis as a communities where: 'The combination of construction noise, visual and traffic impacts will change the character of neighbourhoods and may impact on residents' quality of life' and 'perceptions of reduced neighbourhood quality.'

3.5.4. As noted in paragraph 3.2.2. above: The communities of Broken Cross, Rudheath, Lostock Green, Lostock Gralam and Ascol Drive (Chainage ML 267+000 to ML 270+700) are located in the area with the highest number of residential properties and people on the proposed HS2 Phase 2b rail line route from the Crewe Tunnel North Portal to Manchester Airport, and Golborne.

3.5.5. [RESPONSE] Lach Dennis Parish Council consider that the residential properties of Lostock Green and Penny's Lane, Lach Dennis should be specified as communities where 'Noise and visual impacts from passing trains will result in permanent operational impacts on neighbourhood quality' and 'The presence of railway infrastructure within the local landscape will change the character of surrounding neighbourhoods'

3.5.6. Lostock Green noise fence additional requirements:
Chainage ML 269+200 to ML 270+450

3.5.6.1. [RESPONSE] Lach Dennis Parish Council consider that noise fence barriers up to 5m in height are required on the east sides of the HS2 rail track line between Wade Brook Viaduct and Lostock Gralam South Embankment.

3.5.6.2. [OBJECTION] The proposed height above ordnance datum of the Lostock Gralam North Embankment is 44 to 43m. The height of the rail track is therefore 10m higher in elevation than the existing c.33-34m AOD base line ground surface level of Lostock Green. Properties and residents on the NE side of the village of Lostock Green already experience traffic noise nuisance from existing A556 Shurlach Road and the Mid Cheshire Rail Line which are on the same existing c.33-34m AOD base line ground surface level as Lostock Green.

3.5.7. Penny's Lane, Lach Dennis noise fence additional requirements: Chainage ML 266+500 to ML 267+900
3.5.7.1. [RESPONSE] Lach Dennis Parish Council consider that a noise fence up to 4m is required on the east side of the high speed rail line from Gadbrook Viaduct and Rudheath Embankment.

3.5.7.2. [OBJECTION] The proposed height above ground level of the rail track on Gadbrook Viaduct and Rudheath Embankment is 18.5 to 4.8m above the existing base line ground surface level ground of 30m AOD. The topography is flat and open pasture land. Therefore noise, from both the construction and the operation of the proposed high speed rail infrastructure on the Gadbrook Viaduct and Rudheath Embankment, will create an adverse effect on the properties in Penny's Lane Lach Dennis.

3.5.7.3. [RESPONSE] Lach Dennis Parish Council want HS2* to undertake to engage with Lach Dennis Parish Council, to mitigate the adverse residual noise impact of the proposed

high speed rail scheme by filling in the gaps in the noise fences from chainage ML 266+600 to ML 270+450

PROMOTER'S RESPONSE:

Operational noise assessment

1. The Lowest observed adverse effect levels (LOAELs) set by the Promoter include 50 dB for the 0700-2300 LpAeq, 40 dB for the 2300-0700 LpAeq and 60 dB for the 2300-0700 LpAFmax (façade) to assess the impact of airborne noise caused by the operation of the new railway on permanent residential buildings. The second of these parameters is used to assess the impact of noise from individual train pass-bys. The values have been derived with due regard of the WHO guidelines for community and night noise. The Promoter would take all reasonable steps to design and construct altered roads, and to design, construct, operate and maintain the operational railway so that the combined airborne noise from these sources, predicted in all reasonably foreseeable circumstances, does not exceed the LOAELs. Further details can be found in HS2 Phase 2b Western Leg Information Paper E9: Control of Airborne Noise from altered roads and the operational railway.

2. Dwellings where the noise level during the operation of the railway is predicted to exceed the Significant Observed Adverse Effect Level have been identified individually through the environmental impact assessment as being likely to experience a significant adverse operational noise effect. This is an indication that noise insulation and ventilation would be offered as a means of avoiding any significant adverse effect on the health and quality of life of those living inside. Qualification for noise insulation would be identified and noise insulation offered at the time that the Proposed Scheme becomes operational.

Operational noise effects

3. The ES operational sound, noise and vibration assessment of the Proposed Scheme takes into account both the route-wide and localised control measures proposed in MA02 Wimboldsley to Lostock Gralam, Volume 2, of the main ES, as updated by the SES 1 and AP 1 ES. As the design progresses these proposals would continue to be reviewed to ensure that the Promoter's noise and vibration policy commitments are met. These are set out in the following HS2 Phase 2b Western Leg Information Papers:

- E9: Control of Airborne Noise from altered roads and the operational railway;
- E10: Control of Ground-borne Noise and Vibration from the Operation of Temporary and Permanent Railways;
- E11: Control of noise from the operation of stationary systems;

- E12: Operational Noise and Vibration Monitoring Framework; and
- E13: Control of construction noise and vibration.

4. The main ES has identified beneficial operational airborne noise effects which are likely to be significant due to decreased noise levels at Lostock Green including occupants of residential properties on Village Close, Cinder Lane and Birches Lane.

5. There are a number of isolated properties within the area have been identified as being subject to a likely adverse operational noise effect. The Proposed Scheme is likely to cause a significant effect during operation at the properties at Penny's Lane identified in the petition, represented by location ID 612516. The mitigation measures set out above, including noise insulation, would reduce noise inside all dwellings such that it would not reach a level where it would significantly affect residents.

6. The Promoter's policy on assessing and controlling the noise and vibration impacts set out in HS2 Phase 2b Western Leg Information Papers E9, E10, E11, E12, E13 represents its interpretation of the Government's Noise Policy Statement for England. Each policy includes noise or vibration effect levels which are used in assessment to determine the appropriate policy action. The Promoter's setting of the level had due regard to established practice, research results, guidance in national and international standards, guidance from national and international agencies and independent review by academic, industry and Government employees. They have also been subjected to further independent scrutiny during parliamentary proceedings for HS2 Phase one and Phase 2a and are provided as draft route-wide assurances for the Proposed Scheme where they will be subject to further scrutiny during the parliamentary proceedings for the Phase 2b Proposed Scheme.

Request for additional noise fence barriers

7. The Proposed Scheme would include noise barriers in the form of landscape earthworks, noise fence barriers and/or parapet barriers on viaducts to avoid or reduce significant airborne noise effects. Such mitigation has been identified, taking account of:

- environmental and health benefit;
- cost;
- engineering practicability; and
- other environmental effects caused by the further noise mitigation.

8. In the parish of Lach Dennis, noise barriers have been incorporated into the Proposed Scheme to avoid or reduce adverse effects due to airborne noise at Lostock Green. The envisaged noise barrier locations based upon the currently available information are shown on Map Series SV-05 (Volume 2: MA02 Map Book) and

described in Section 2.2. Noise barriers are not envisaged at the locations identified in the petition (the east side of the line between chainage ML 266+500 to ML 267+900 and Chainage ML 269+200 to ML 270+450). Notwithstanding this, the level of impact from operational noise would be very limited, as set out above. The Promoter accordingly would not propose to introduce new noise barriers in the locations suggested by the Petitioners.

Landscape and visual impacts

9. The visual effects within the Lach Dennis parish boundary have been assessed in the main ES and significant effects are reported in section 11, Volume 2, for the Community Area Wimboldsley to Lostock Gralam (MA02) report. The following viewpoints have been assessed as representative of views within the vicinity of Broken Cross, Rudheath, Lostock Green and Lostock Gralam that are potentially affected by the Proposed Scheme:

- Viewpoint 311-02-001: view from the west from the B5082 Penny's Lane, Lach Dennis;
- Viewpoint 311-02-002: view south-east from Broken Cross, the A556 Shurlach Road and the A530 King Street junction;
- Viewpoint 311-02-003: view west from Birch Grove, Lostock Green;
- Viewpoint 312-02-001: view north-east from Springbank Farm, Birches Lane
- Viewpoint 312-03-002: View south-east from Footpath Lostock Gralam 2/1, Griffiths Road;
- Viewpoint 312-02-003: view west from Restricted Byway Lostock Gralam 1/1, Lostock Green;
- Viewpoint 312-02-004: View west from Mosslane Farm, Moss Lane;
- Viewpoint 312-02-005: View south-east from Lostock Gralam Station entrance, Lostock Hollow;
- Viewpoint 312-02-006: View north-west from Footpath Lostock Gralam 4/2, east of Fieldhouse Farm;
- Viewpoint 312-02-007: View east from Broseley Way, Lostock Gralam; and
- Viewpoint 312-03-008: View west from Footpath Lostock Gralam 8/2, Plumley Lime Beds Nature Reserve.

10. During construction, the following viewpoints are reported as experiencing significant effects due to views of the construction of the Proposed Scheme:

- Viewpoint 311-02-001 – view from the west from the B5082 Penny's Lane, Lach Dennis;
- Viewpoint 311-02-002: view south-east from Broken Cross, the A556 Shurlach Road and the A530 King Street junction;
- Viewpoint 311-02-003 - view west from Birch Grove, Lostock Green;
- Viewpoint 312-02-001 - view north-east from Springbank Farm, Birches Lane;
- Viewpoint 312-02-003 - view west from Restricted Byway Lostock Gralam 1/1, Lostock Green;
- Viewpoint 312-02-004 - View west from Mosslane Farm, Moss Lane;
- Viewpoint 312-02-005 - View south-east from Lostock Gralam Station entrance, Lostock Hollow;
- Viewpoint 312-02-006 - View north-west from Footpath Lostock Gralam 4/2, east of Fieldhouse Farm;
- Viewpoint 312-02-007 - View east from Broseley Way, Lostock Gralam; and
- Viewpoint 312-03-008 - View west from Footpath Lostock Gralam 8/2, Plumley Lime Beds Nature Reserve.

11. The draft CoCP includes measures to limit landscape and visual impacts during construction. These include protecting existing trees where possible, use of well-maintained fencing around construction areas and designing lighting to avoid intrusion on adjacent residential properties. This is explained further in HS2 Phase 2b Western Leg Information Paper D3: Code of Construction Practice.

12. The Proposed Scheme design includes the following areas landscape mitigation in order to reduce the visual effects of the Rudheath Embankment, Wade Brook Viaduct, Lostock Gralam South Embankment, A556 Shurlach Road Realignment, Lostock Gralam Viaduct and the Lostock Gralam North Embankment on nearby viewpoints and to assist in integrating the railway infrastructure into the surrounding landscape:

- landscape mitigation planting to the eastern side of the Rudheath embankment, extending from 250m north of the B5082 Penny's Lane telecommunications site to the existing Birches Lane, to help integrate the Proposed Scheme into the surrounding landscape;
- landscape mitigation planting to the eastern side of the Rudheath embankment, between the existing and the realigned Birches Lane to help integrate the Proposed Scheme into the surrounding landscape;

- an area of landscape mitigation planting to the west of the route of the Proposed Scheme and to the west of Cookes Lane to help integrate the Proposed Scheme into the landscape and provide visual screening for users of the A556 Shurlach Road;
- an area of landscape mitigation planting to the west of the route of the Proposed Scheme and to the west of the realigned A556 Shurlach Road to help integrate the Proposed Scheme into the landscape and provide visual screening for users of the A556 Shurlach Road and residents on Birches Lane;
- an area of landscape mitigation planting to the west of the route of the Proposed Scheme between Birches Lane and Wade Brook to help integrate the Proposed Scheme into the landscape and provide visual screening for residents on Birches Lane;
- an area of landscape mitigation planting to the east of the route of the Proposed Scheme along the realigned Birches Lane to help integrate the Proposed Scheme into the landscape and provide visual screening for residents of Lostock Green and receptors to the east;
- an area of landscape mitigation planting to the west of the route of the Proposed Scheme and to the west of the realigned A556 Shurlach Road between Wade Brook and the Mid-Cheshire Line;
- landscape mitigation planting on both sides of the Lostock Gralam South embankment to help integrate the Proposed Scheme into the surrounding landscape;
- an area of woodland habitat creation to the west of the route of the Proposed Scheme east of the A556 Shurlach Road at Lostock Gralam, to provide connectivity and habitat replacement;
- landscape mitigation planting on both sides of the Lostock Gralam North embankment to help integrate the Proposed Scheme into the surrounding landscape; and
- an area of woodland habitat creation to the east of the route of the Proposed Scheme adjacent to the Mid-Cheshire Line, to provide connectivity and habitat replacement.

13. By year 15 of operation, the maturing proposed mitigation planting would partially screen views of the Proposed Scheme. As a result, the main ES reports that Viewpoint 312-02-003 - view west from Restricted Byway Lostock Gralam 1/1, Lostock Green and Viewpoint 312-02-004 – view west from Moss Lane Farm, Moss Lane would no longer be significantly affected:

14. By year 30 of operation, the proposed mitigation planting would have further matured and serve to partially screen views of the Proposed Scheme. As a result, the main ES lists the following viewpoints as no longer significantly affected:

- Viewpoint 312-02-005 - View south-east from Lostock Gralam Station entrance, Lostock Hollow;
- Viewpoint 312-02-007 – view east from Broseley Way, Lostock Gralam; and,
- Viewpoint 312-03-008 – view west from Footpath Lostock Gralam 8/2, Plumley Lime Beds Nature Reserve.
- The ES reports that significant effects are considered permanent for the following viewpoints:
 - Viewpoint 311-02-001 – view from the west from the B5082 Penny's Lane, Lach Dennis;
 - Viewpoint 311-02-002: view south-east from Broken Cross, the A556 Shurlach Road and the A530 King Street junction;
 - Viewpoint 312-02-001 - view north-east from Springbank Farm, Birches Lane;
 - Viewpoint 312-02-003 - view west from Restricted Byway Lostock Gralam 1/1, Lostock Green; and
 - Viewpoint 312-02-006 - View north-west from Footpath Lostock Gralam 4/2, east of Fieldhouse Farm.

HOUSE OF COMMONS SELECT COMMITTEE

HIGH SPEED RAIL (CREWE - MANCHESTER) BILL

PROMOTER'S RESPONSE TO PETITION OF: Lach Dennis Parish Council

PETITION NO: HS2-P2B-011

PARAGRAPH NO: 3.6.1 – 3.6.9.4

ISSUE RAISED: Ground conditions

PETITION PARAGRAPH: 3.6.1. [OBJECTION] Lach Dennis Parish Council have significant concerns re safety due adverse environmental effects and geohazards of the known poor ground conditions, and climate change resilience of the HS2 2b high speed rail infrastructure that have not been addressed in the High-Speed Rail (Crewe to Manchester) Hybrid Bill January 2022 Environmental Statement.

3.6.2. [OBJECTION] Lach Dennis Parish Council have significant concerns re the lack of engagement from the Department of Transport and their agents and advisers (HS2 Ltd) with Lach Dennis Parish Council, Cheshire West and Chester Council, and others including stakeholders and residents re the ground investigation survey and information that has been, and is planned to be, gathered, assessed, undertaken and out.

3.6.3. [RESPONSE] Lach Dennis Parish Council urge the Select Committee / Government / Department for Transport to undertake an independent assessment to be carried out of the impact of the potentially hazardous ground conditions of HS2 phase 2b high speed rail route north of Crewe, which includes the adverse environmental effects and geohazards of the known poor ground conditions within Lach Dennis and Lostock Green Parish.

3.6.4. [OBJECTION] The existing baseline poor ground condition geohazards have safety implications for those, constructing, operating, and using the high-speed rail infrastructure and those living adjacent to the infrastructure

3.6.5. [OBJECTION] The existing baseline poor ground condition geohazards are likely to increase in intensity, occurrence, volume increases in precipitation, surface water,

ground water, water table rise, surface water flooding and ground water flooding a consequence of climate change driven changes to the hydrological cycle such as sea level rise.

3.6.6. [RESPONSE] The High-Speed Rail (Crewe to Manchester) Hybrid Bill Environmental Statement addresses the impact of the high-speed rail infrastructure on the environment but not addressed are:

- The impact of the existing environment and poor ground condition geohazards on the HS2 2b high speed rail infrastructure.
- The proposed measures to avoid, reduce, mitigate and offset the likely significant and adverse environmental effects of the known poor ground conditions, with respect to surface water, ground water and ground stability, on the HS2 2b high speed rail infrastructure project.
- The impact of ongoing and future climate driven changes to the environment, ground conditions and geohazards on HS2 high speed rail infrastructure
- The proposed measures to avoid, reduce, mitigate and offset the likely significant and adverse environmental effects of the ongoing and future climate driven changes to the environment, ground condition geohazards on the HS2 2b high speed rail infrastructure project.

3.6.7. [RESPONSE] Lach Dennis Parish Council want HS2* to undertake to engage with and satisfy Lach Dennis Parish Council and Cheshire West and Chester Council that the measures and infrastructure design of the proposed high speed rail scheme presented in the High Speed Rail (Crewe to Manchester) Hybrid Bill will mitigate and prevent the likely adverse of flooding, ground stability and geohazards within Lach Dennis and Lostock Green Parish Boundary effects during construction and operation of the high speed rail infrastructure.

3.6.8. [RESPONSE] The likely significant climate driven changes, for the 120 year anticipated life of the proposed high speed rail infrastructure, in surface water and groundwater conditions to mitigate and prevent an increase in:

- Surface flooding
- Road flooding
- Drainage ditch overflow
- Road drains overflow
- Sewer overflow

3.6.9.[OBJECTION] The risk of ground surface subsidence due to settlement and underground flow of saturated sand in confined artesian aquifer and sagging of overlying impermeable clay and where the clay layer is breached each after intense long period of drought allowing artesian water to reach the surface and surface water to flow into the aquifer.

3.6.10. Slope instability in soft weak ground conditions due to outflow of artesian water and saturated sand from aquifer at spring lines where valley slopes intersect the upper interface of the saturated sand in confined artesian aquifer with overlying impermeable clay layer.

3.6.11. [RESPONSE] Lach Dennis Parish Council want HS2* to undertake to address and satisfy Lach Dennis Parish Council and Cheshire West and Chester Council Local Authority that:

- The information on the ground conditions, surface water, ground water and flooding in the Lach Dennis Parish Council response to the Environmental Statement January 2022 is assessed by HS2 Ltd's Geotechnical and other appropriate HS2 Ltd personnel

And

- Incorporated in Government / Department for Transport / HS2 Ltd's climate change resilience measures in the design, construction and operation of the high speed rail scheme that mitigate and monitor the infrastructure for the 120 year expected life time.

3.6.9. Wade Brook Valley Springs, Sinks and Running Sand

3.6.9.1. [OBJECTION] Lach Dennis Parish Council have significant concerns re safety and adverse environmental effects from the existing baseline and geohazards of the known poor ground conditions of the Wade Brook Valley, in the area crossed by the route of the proposed HS2 2b high speed rail infrastructure and land required for the construction of the proposed scheme: Wade Brook Viaduct, Wade Brook Overbridge, Rudheath Embankment, Lostock Gralam South Embankment, Birches Lane Satellite Compound and Lostock Hollow Construction Traffic Route. (Chainage ML 268+800 to ML 269+500)

3.6.9.2. The existing baseline of the Wade Brook Valley, is known to be poorly drained, with surface water accumulation, springs from confined artesian aquifer, running sand, ground slope instability.

3.6.9.3. [OBJECTION] Lach Dennis Parish Council have significant concerns that the High-Speed Rail (Crewe to Manchester) Hybrid Bill January 2022 Environmental Statement:

- does not include a description of the 'good design' measures that Government / Department for Transport / HS2 Ltd will 'build in resilience to the effects of climate change' to resolve engineering issues re ground instability in the area of the Wade Brook Viaduct, Wade Brook Overbridge, Rudheath Embankment, and Lostock Gralam South Embankment,
- does not include the 'specific' monitoring arrangements, for the 120-year life of the Proposed HS2 2b Scheme, for 'the particular significant adverse effects' on the proposed scheme of existing on-going current ground instability ground movement and potential future ground instability in the area of the Wade Brook Viaduct, Wade Brook Overbridge, Rudheath Embankment and Lostock Gralam South Embankment.

3.6.9.4. [RESPONSE] Lach Dennis Parish Council reiterates the importance to the Select Committee / Government / Department for Transport / HS2 Ltd that the information on the ground conditions in Lach Dennis Parish Council response to the Environmental Statement January 2022 January 2022 is assessed by HS2 Ltd's Geotechnical and other appropriate HS2 Ltd personnel re the climate change resilience measures in the design, construction, operation and safety of the high speed rail scheme for the 120 year expected life time that mitigate and monitor:

- base line existing slope instability
- slope instability during construction
- potential escalation of slope instability slope stability from climate change driven increases in volume intensity and pressure of precipitation, surface water and ground water.
- increase in precipitation intensity, volume, frequency
- increase in surface water run off
- increase in surface water ponding flooding
- increase in ground water volume
- increase in ground water aquifer pressure
- increase in water table height

PROMOTER'S RESPONSE:

Ground conditions

1. HS2 is in consultation with the operators of the Salt Industry infrastructure and discussions are ongoing with the business owners/operators to ensure public safety and their safe continued business operations during constructing and operating the Proposed Scheme.
2. HS2 has undertaken a significant amount of data gathering to inform the design with specific reference to the geology and ground conditions. HS2 has held discussions with relevant agencies that have significant knowledge and information on existing infrastructure assets within the area and captured data on the interaction between their activities and the ground conditions. These agencies include Network Rail, The Canal and Rivers Trust, the relevant Salt Industry companies and the Cheshire Brine Subsidence Compensation Board. In addition, HS2 has listened to local communities who have knowledge of the local geology and taken note of their observations and opinions.
3. A comprehensive desk study has been compiled for the Phase 2b Western Leg route. Following a review of desk study information, two phases of ground investigations have already been carried out.
4. It is industry practice to undertake Ground Investigation in a phased manner, with each phase building on the next. HS2 has planned a routewide Ground Investigation activity which is proposed to commence in 2023. This proposed routewide Ground Investigation will involve closely spaced exploratory sampling points along the full route from Crewe to Manchester, with more frequent and site-specific exploration at specific locations, where the ground risk may be greater due to the local geological conditions. Future contractors will normally also deploy additional ground investigations in the later stages of design and the early stages of construction to finalise design elements that could be sensitive to ground conditions along the HS2 corridor. This ensures the engineering solutions proposed are verified and the safety of the Proposed Scheme is validated and assured.
5. The Promoter has previously given commitments on the design of the Proposed Scheme in Phase 2b Western Leg Information Paper D1: Design, in particular the Promoter would highlight Sections 3.1 of this publication, which states:

“The Promoter and the nominated undertaker will seek to ensure that:

- the design is safe, efficient, and meets with the requirements of whole life operation and maintenance alongside initial buildability and will integrate with the local setting;
- the design is developed through engagement to seek peoples' views and including integration with setting design of the visible buildings and permanent structures”

6. HS2 continues to work with its design partners to optimise the Proposed Scheme with respect to engineering design and cost as more information relating to the ground conditions emerges.

7. A report has been published by HS2 Ltd which provides a review of the ground conditions, the associated risks, and the mitigation measures for the HS2 Crewe-Manchester Proposed Scheme. This report titled “Crewe to Manchester - Understanding the Ground Risk across the Cheshire Plain” can be viewed from the following link:

[HS2 Phase 2b Select Committee: Crewe to Manchester - Understanding the Ground Risk across the Cheshire Plain - GOV.UK \(www.gov.uk\)](https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/114444/HS2_Phase_2b_Select_Committee_Crewe_to_Manchester_-_Understanding_the_Ground_Risk_across_the_Cheshire_Plain.pdf)

Climate Change

8. A high-level climate change risk and resilience assessment has been undertaken to identify the potential risks of climate change on the Proposed Scheme, and to assess the Proposed Scheme's resilience and capacity to cope with these potential risks. In addition, a comprehensive flood risk assessment has been carried out for each community area in consultation with the Environment Agency and can be found in the Volume 2 and supporting Volume 5: Community Area collections. A route-wide flood risk assessment has also been carried out and can be found in the Volume 3 and supporting Volume 5: Route-wide reports. Allowances for climate change have been used in accordance with, at the time of preparation, the latest guidance published by the Environment Agency. Further guidance has been published by the Environment Agency in May 2022 which considers the latest climate predictions for the UK and comprises the latest predictions on future changes in climate trends and their impact on hydrological systems. This further guidance has been adopted by HS2 and will be used to inform the ongoing design and assessment of the Proposed Scheme.

9. Climate change resilience assessments will continue to take place throughout the design, construction and operation stages of the Proposed Scheme.

10. For further information see HS2 Phase 2b Western Leg Information Paper E26: Climate change adaptation and resilience

Surface water, ground water and flooding

11. The Promoter has provided a response to environmental assessment with respect to surface water, ground water and flooding in response to paragraphs 3.7.1 – 3.7.2.5 of the petition in the next section of this document.

HOUSE OF COMMONS SELECT COMMITTEE

HIGH SPEED RAIL (CREWE - MANCHESTER) BILL

PROMOTER'S RESPONSE TO PETITION OF:	Lach Dennis Parish Council
PETITION NO:	HS2-P2B-011
PARAGRAPH NO:	3.7.1 – 3.7.2.5
ISSUE RAISED:	Surface water, ground water, flooding
PETITION PARAGRAPH:	3.7.1. Flooding and sub surface drainage: Penny's Lane to A556 Shurlach Road junction (existing baseline) Rudheath Embankment 3.7.1.1.[OBJECTION] Lach Dennis Parish Council have significant concerns re safety and adverse environmental effects re surface water flooding and drainage in enclosures west of existing baseline route of Penny's Lane to A556 Shurlach Road junction either side of proposed Rudheath Embankment. (Chainage ML 267+600) 3.7.1.2. An existing site of surface flooding exists in the enclosures and roadside ditches south of the current baseline route of Penny's Lane to A556 Shurlach Road junction, east and west of proposed Rudheath Embankment and opposite the properties on the north side of Penny's Lane. 3.7.1.3. [OBJECTION] Properties on the north side of Penny's Lane have septic tanks which depend on filtered overflow drainage to the groundwater. Any rise in volume of ground water, height of water table and ground water, land surface flooding will be detrimental to the foul water drainage system of these properties with the potential for foul water surface flooding. 3.7.1.4. [RESPONSE] The extent, impact, risk from and susceptibility to surface water flooding and ground water flooding for the area, Penny's Lane current baseline route A556 Shurlach Road junction Rudheath Embankment, are clearly shown in Env. Stat. Doc. M325 WR-005-0MA02 Water resources and flood risk MA02: Wimboldsley to Lostock Gralam Flood risk assessment.

3.7.1.5. [RESPONSE] Lach Dennis Parish Council want HS2* to undertake to address and satisfy Lach Dennis Parish Council that the measures and infrastructure design of the proposed high speed rail scheme presented in the Environment Statement are fit for purpose to mitigate and prevent an increase in surface flooding, road flooding, drainage ditch overflow, road drains overflow, ground water flooding, disturbance to and surface flooding from foul water drainage from properties with septic tanks.

3.7.2. Flooding: A556 Shurlach Road Culvert (Chainage ML 268+075)

3.7.2.1.[OBJECTION] Lach Dennis Parish Council have significant concerns re the likely significant and adverse environmental effects from the extent, impact, risk from, susceptibility to surface water flooding and ground water flooding for the area draining into the A556 Shurlach Road Culvert.

3.7.2.2. [OBJECTION] The extent, impact, risk from and susceptibility to surface water flooding and ground water flooding for the area draining into the A556 Shurlach Road culvert, are clearly shown in Env. Stat. Doc. M325WR-005-0MA02 Water resources and flood risk MA02: Wimboldsley to Lostock Gralam Flood risk assessment Doc M325:

3.7.2.3. A556 Shurlach Road Culvert sited in an area:

- designated as high flood risk,
- of known high ground water table
- with ditches filled to brim i.e. high water table
- of known impermeable clay subsoil
- of known surface flooding
- flat area with little/no run off leading water ponding
- of flooding from rain water
- of flooding from the INOVYN Holford Brine Field operations; such as brines spills and bursts which are highly likely to flow into and contaminate the proposed balancing pond (chainage ML 268+050)

3.7.2.4. The surface drainage area of the INOVYN Holford Brine Field infrastructure in the area bounded by Birches Lane, Lostock Green to Penny's Lane, Lach Dennis and the A556 Shurlach Road, is within the catchment area of the A556 Shurlach Road culvert. Any brine escapes at the surface and near surface therefore flows as surface floods, in field ditches,

underground field drains and as groundwater to the A556 Shurlach Road culvert.

3.7.2.5. [RESPONSE] Lach Dennis Parish Council want an undertaking from HS2* to address and satisfy Lach Dennis Parish Council on the design of the measures and mitigation that avoid, reduce, mitigate and offset the likely significant and adverse environmental effects surface water flooding and ground water flooding for the area draining into the A556 Shurlach Road Culvert.

PROMOTER'S RESPONSE:

Surface water, ground water and flooding

1. Flood risk from multiple sources of flooding (i.e. fluvial, surface water, groundwater, artificial sources) has been considered within the Flood risk assessment appended to the main ES (Volume 5, Appendix WR-005-0MA01, WR-005-0MA02 and WR-005-0MA03) including climate change. These documents describe suitable flood mitigation measures for the multiple sources of flood risk including any potential new flood risks arising from the proposed Scheme.
2. HS2 Phase 2b Western Leg Information Paper E15: Water Resources, Flood Risk and Authorisation of Related Works, describes how it is the design aim of the Proposed Scheme for no increase in the risk of flooding, including for vulnerable receptors such as residential property during the lifetime of the development, taking projected climate change impact into account. The Promoter would continue to engage with the statutory authorities, including the Environment Agency and Lead Local Flood Authorities, during the development of the Proposed Scheme to discuss potential issues.
3. A comprehensive assessment of the effect of the Proposed Scheme on surface water drainage and flood risk was undertaken and detailed within Volume 5, Water Resources Flood Risk Assessment of the ES, published in January 2022. Updates to the original assessment were included within the SES1 and AP1 ES, published in July 2022.
4. These included an assessment of changes in runoff as a result of construction and operation, as well as changes to surface water flow paths and drainage ditches resulting from the presence of the Proposed Scheme as a linear feature intersecting natural surface water drainage ditches and flow paths.
5. Where necessary, further surveys, ground investigation and monitoring would be undertaken as the design and implementation details are developed.
6. Protective provisions, included at Part 4 of Schedule 32 to the Bill, require approval for details of works likely to affect flood risk, water quality, or groundwater by the

appropriate body, prior to undertaking works. In relation to surface water the appropriate body for approval is explained at section 10 of HS2 Phase 2b Western Leg Information Paper E15: Water Resources, Flood Risk and Authorisation of Related Works. The appropriate body for approval in relation to groundwater in England is the Environment Agency. Therefore, no works affecting groundwater or surface water could be undertaken until the appropriate body is satisfied that the impacts from both construction and operation of the works are properly understood and that any mitigation and monitoring is adequate.

HOUSE OF COMMONS SELECT COMMITTEE

HIGH SPEED RAIL (CREWE - MANCHESTER) BILL

PROMOTER'S RESPONSE TO PETITION OF: Lach Dennis Parish Council

PETITION NO: HS2-P2B-011

PARAGRAPH NO: 3.8.1 – 3.8.3.3

ISSUE RAISED: Industry

PETITION PARAGRAPH: 3.8.1. Environmental Damage from breaches and leaks from Holford Brine Field impacts from high pressure brine, high pressure water and high pressure gas infrastructure.

3.8.1.1. [OBJECTION] Lach Dennis Parish Council have very significant concerns re safety and adverse environmental effects re damage from leaks from Holford Brine Field impacts from high pressure brine, high pressure water and high-pressure gas infrastructure as a result of the construction, maintenance and operation of the proposed HS2 2b high speed rail infrastructure.

3.8.1.2. The majority of Lach Dennis and Lostock Green Parish is within the boundary of the Holford Brine Field and environmental and community damage e.g. to road verges drainage, properties is of major concern to the Parish Council.

3.8.1.3. For decades, since at least the 1970s, there have been instances of brine surface runoff and environmental damage from failures in brine infrastructure; at brine well heads, brine storage tanks and connecting high pressure brine pipelines.

3.8.1.4. Lach Dennis Parish Council report and receive reports of instances of brine damage, as member of the INOVYN Holford Brine Field Liaison Group. Examples of two of major brine infrastructures failure leading to extensive surface brine flow that have occurred within the area required for the construction, operation and maintenance of the HS2 high speed infrastructure are:

- 19 June 2022 major surface brine flood from the Holford Brine Field infrastructure adjacent to Lostock Gralam Station Birches Lane (north) into Lostock Hollows and Wade Brook

within area required for the construction of the HS2 high speed infrastructure

- 12 April 2020 major surface brine flood from the Holford Brine Field adjacent to Birches Lane (south) Hangman's Lane junction to A556 Shurlach Road Culvert from the Holford Brine Field Environment Agency Reference number 1797734.

3.8.1.5.[OBJECTION] Lach Dennis Parish Council has very significant concerns re safety and adverse environmental effects and damage from leaks from INOVYN Holford Brine Field infrastructure - supported by those submitted by INOVYN Enterprises Ltd in their Response HS2 2b Environmental Statement Consultation 2022 000140_1-INOVYN Enterprises Limited - Stakeholder - Email Response

<https://www.hs2billes.co.uk/Responses.aspx?id=102>As set out in the extract from this document in 'INOVYN Chlorvinyl Ltd use the purified brine to produce Chlorine which is used to purify 98% of the UK's drinking water and is the building block for numerous other chemicals. A failure to supply brine to the ICV business would result in the purification of water in the UK ceasing within two days. The current route of HS2b and the diversion of the A556 will have a significant impact on the company's current and future operations and business 2.5. As already highlighted, the majority of INOVYN pipelines that pass beneath the existing A556 are made of ductile or cast iron both of which are particularly vulnerable to vibration, increased loads and ground movement, all of which are likely to occur as a result of the proposed HS2 works. 2.6. Potential settlement impact on vulnerable/ aged services.

Ground movement from the removal of the existing A556 embankment and the construction of the diverted A556 and new HS2 embankments is highly likely to have a long-term impact on INOVYN's existing vulnerable apparatus e.g. cast/ductile iron pipeline'

3.8.1.6. [RESPONSE] Lach Dennis Parish Council want an undertaking from HS2* undertake to address and satisfy Lach Dennis Parish Council, Cheshire West and Chester Council, the Environmental agency INOVYN Enterprises and other organisations owning or having responsibility for high pressure brine, high pressure water and high pressure gas similar infrastructure within the area required for the construction, operation and maintenance of the HS2 high speed infrastructure, on the design of the measures and mitigation that are to be put in place and taken to avoid,

reduce, mitigate and offset the likely significant and adverse environmental effects to land, environment and residents within the parish of Lostock Green and Lach Dennis.

3.8.2. Risk to salt industry infrastructure. Risk to supply of sodium chloride vital to chemical industry

3.8.2.1. [OBJECTION] Lach Dennis Parish Council is concerned on the negative impact that the proposed route of the HS2 Phase 2b high speed rail infrastructure has on the salt industries of Cheshire beneath and adjacent to the HS2 2b route north of Crewe. Specifically:

- Risk to salt industry infrastructure
- Risk to supply availability/reliability of sodium chloride vital to chemical industry
- Sterilisation of salt reserves

3.8.2.2. The HS2 2b route across the Cheshire Salt District north of Crewe between Northwich, Winsford and Middlewich is to be built over the UK's biggest rock salt deposits, the Cheshire Salt District; a large part of the salt reserves being exploited and salt reserves available for exploitation are within Lach Dennis and Lostock Green Parish. The feedstock for the North West Chemical Industries is supplied by brine from the salt reserves beneath Lach Dennis and Lostock Green Parish or piped from adjacent parishes through Lach Dennis and Lostock Green Parish.

3.8.2.3. [RESPONSE] Lach Dennis Parish Council considers it has a duty to raise on behalf of the many of the salt industries located within Lach Dennis and Lostock Green Parish and the many Lach Dennis and Lostock Green Parish residents, land owners, tenant farmers with direct connections with the salt industries, concerns on the potential negative and costly impact of HS2 on the:

- Exploitation of the salt reserves
- The supply of feedstock for the North West Chemical Industries
- Nationally strategic secure gas storage in salt cavities

3.8.2.4. [OBJECTION] Any failures or reductions in on the availability and reliability of the supply of the sodium chloride brine feedstock and the gases stored in the salt caverns beneath Lach Dennis and Lostock Green and adjacent parishes, as a consequence of the construction and operation of the high-speed infrastructure, are highly likely to result of

negative effects on the North West Chemical Industries and Strategic Natural Gas Storage operations and businesses. Refer to section

3.8.1.5 from the Supporting Statement from INOVYN Enterprises Ltd Response HS2 2b Environmental Statement Consultation 2022

- 'A failure to supply brine to the ICV business would result in the purification of water in the UK ceasing within two days.'
- 'The current route of HS2b and the diversion of the A556 will have a significant impact on the company's current and future operations and business'

3.8.3. Sterilisation of salt reserves

3.8.3.1. [RESPONSE] Lach Dennis Parish Council urges HS2* to consider the implications and the cost to the nation and the industries of not exploiting the UK's salt reserves sterilized by the HS2 Phase 2b high speed rail route within the Lach Dennis and Lostock Green Parish boundary. For example:

3.8.3.2. INOVYN Enterprises Ltd '...would be unable to mine the minerals that are within INOVYN's consented Springbank Farm Site (Planning Permission date 21 May 1998) which will extend beneath HS2 and the diverted A56'Refer to comments in Section 2.2. from INOVYN Enterprises Ltd in their Response HS2 2b Environmental Statement Consultation 2022 000140_1- INOVYN Enterprises Limited - Stakeholder - Email Response <https://www.hs2billes.co.uk/Responses.aspx?id=102>

3.8.3.3. King Street Energy (Planning Permission date 08 December 2009) for 10 gas storage caverns. The January 2013 HS2 route announcement over the planned salt caverns prevented King Street Energy from proceeding with the gas storage cavern development. If the King Street Energy had gone ahead in 2013 the additional 10 gas storage caverns would have increased the gas storage capacity by 30% and would be available for gas storage now.

PROMOTER'S RESPONSE:

Sterilisation of salt reserves

1. Construction of the Proposed Scheme has the potential to impact existing mineral resources and proposed areas of mineral exploitation. This could occur by sterilisation of the resource, direct excavation during construction of the Proposed Scheme or

through temporary and/or permanent severance that may occur during the construction phase of the Proposed Scheme, possibly continuing through to the operation.

2. The main ES recognises the various policies that define Mineral Safeguarding Areas and relate to land resources and their protection during development namely the Cheshire Replacement Minerals Plan 8.

3. The main ES has considered the sterilisation of minerals and an assessment has been carried out, the results of which can be found in the ES Volume 5, Land quality report (Environmental reports by community area).

4. The Promoter is in discussion with landowners regarding minerals extraction, and the Compensation Code addresses matters of compensation, i.e. where loss of mineral rights has been established by the landowner(s).

Salt and brine safeguarding areas

5. The land quality assessment for salt resources has been undertaken in accordance with the methodology and significance criteria identified in the Scope and Methodology Report, which has previously been consulted upon. The assessment undertaken in the ES also aligns with the assessment undertaken in the working draft ES, which was also previously consulted on.

6. The assessment takes into account the current baseline and future baseline. The latter considers consented planning applications and allocations.

Salt, brine safeguarding areas - Middlewich to Pickmere Route Refinement (July 2014)

7. Following the period of public consultation on the 2013 Proposed Scheme, route refinement work was undertaken. One area covered was approximately 26km of the route from the tunnel portal south of Crewe to the M6 crossing north of Pickmere. The refinement considered the risks associated with the large expanse of salt fields and salt mining north of Crewe and gas storage in the area. Further information on alternatives can be found in the Volume 5: Appendix CT-003-00000 (Alternatives report).²

8. As reported in paragraph 5.2.17 of the Alternatives Report, a further review of alternative route corridors from Crewe heading north-east towards Manchester Airport via Mobberley was undertaken.

9. As reported in paragraph 5.2.20 of the Alternatives three options were taken forward to the full sift appraisal.

²

https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/108729/5/Q36.pdf

10. Option 00: the route refinement baseline (RRB) would run in a bored tunnel under Crewe, surfacing to the north near Coppenhall alongside the West Coast Main Line (WCML). It would continue northwards in a mix of shallow cutting and at ground level, moving away from the WCML near Wimboldsley and would continue north between Winsford and Middlewich. The route would cross the River Dane and the Trent and Mersey Canal on an approximately 10m high viaduct, before rising onto embankment. The route would turn north-east towards Lostock Gralam, passing to the east of Lostock Green and continue to the west of Pickmere Telescope before entering cutting and then onto embankment approaching the M6.

11. Option 03: would be in bored tunnel under Crewe before surfacing near Coppenhall, after which the route section would continue at a minimum height of 1m above ground level. North of Crewe, the route would initially follow a similar route to Option 00 and would head north to the west of Wimboldsley on embankment between Middlewich and Winsford. The route would then continue north and would cross the River Dane on an approximately 26m high viaduct, with three crossings of the Trent and Mersey Canal. Approaching Rudheath, the route would start to head north-east alongside the A556 to the west of Lostock Green and would continue north to the east of Lostock Gralam and Pickmere Telescope. It would continue on embankment over the M6.

12. Option 08: would follow a similar route to Option 00 but upon surfacing north of Crewe would be elevated throughout the length of this section to a minimum height of 1m above ground level. The route would head north of Crewe on low embankment, before on an approximately 26m high viaduct crossing of the River Dane and would continue on a mix of embankment and viaduct towards Lostock Gralam. This route would include an approximately 60m shift eastwards (compared to the RRB) and would pass Lostock Green and continue north towards and across the M6 on embankment.

13. Options 03 and 08 were taken forward as viable alternatives, pending further investigation into the salt/brine and gas storage risks. Option 03 was subsequently confirmed as the preferred option due to the lower geological risk associated with avoiding salt mining and gas storage areas.

Salt, brine safeguarding areas – Post 2016/2017 consultation route refinements

14. From the 2016/2017 consultation, HS2 Ltd undertook a strategic review of all previous route options in this area, including the previous route refinement options considered following the 2013/2014 consultation.

15. In addition, consideration was given to alternatives suggested as part of consultation feedback, including a route closer to the M6 corridor, a tunnelled route under Sandbach, a route east of Middlewich and a route that followed the A556.

16. Previous work undertaken by HS2 Ltd indicated that routes following the M6 corridor would have similar impacts associated with passing over an area of salt and would require a less favourable location for the junction of the HS2 WCML connection

and the HS2 Manchester spur. These options would also have community and environmental impacts, including demolitions and impacts on Sites of Special Scientific Interest and heritage assets.

17. As reported in paragraph 5.2.187 of the Alternatives Report, it was decided that the route between Middlewich and Pickmere would remain as per the 2016 preferred route to Manchester. This route would avoid the brining and gas storage infrastructure, such as caverns, wellheads and surface infrastructure and would have lower risk of subsidence from ground movement. The route would be raised in this area to allow for the management of drainage and geological risk and to provide more flexibility for ground stability mitigation options.

Ground conditions

18. Please see the Promoters response to paragraphs 3.6.1 – 3.6.9.4 of the petition provided earlier in this document.

Surface water, ground water and flooding

19. Please see the Promoters response to paragraphs 3.6.1 – 3.6.9.4 of the petition provided earlier in this document.

Climate change

20. Please see the Promoters response to paragraphs 3.6.1 – 3.6.9.4 of the petition provided earlier in this document.

House of Commons

High Speed Rail (Crewe - Manchester) Bill – First Additional Provision

1. Petitioner information

In the box below, give the name and address of each individual, business or organisation submitting the petition.

Mrs Lyndsey Sandison
Lach Dennis Parish Council Clerk & Responsible Finance Officer
6 Houghton Close
Northwich
Cheshire
CW9 8NW

In the box below, give a description of the petitioners. For example, “We are the owners/tenants of the addresses above”; “My company has offices at the address above”; “Our organisation represents the interests of...”; “We are the parish council of...”.

We are the Parish Council of Lach Dennis representing the inhabitants of Lostock Green and Lach Dennis and the scattered properties and farms.

2. Objections to the First Additional Provision to the Bill

In the box below, write your objections to the First Additional Provision to the Bill and why your property or other interests are directly and specially affected. Please number each paragraph.

Only objections outlined in this petition can be presented when giving evidence to the Committee. You will not be entitled to be heard by the Committee on new matters not included in your written petition.

PETITION AGAINST ADDITIONAL PROVISIONS

LACH DENNIS PARISH COUNCIL

High Speed Rail (Crewe – Manchester) Supplementary Environmental Statement 1 (SES 1) and Additional Provision 1 Environmental Statement (AP 1ES)

1. AMENDMENT: PROVISION OF A SHARED USE CYCLE AND PEDESTRIAN PATH ALONG A556 SHURLACH ROAD

SES 1 and AP1 ES Reference: Amendment AP1-002-010

1.1. Document Q7: High Speed Rail (Crewe – Manchester) Supplementary Environmental Statement 1 and Additional Provision 1 Environmental Statement Non-technical summary. 10.1 Summary of amendments in the Wimboldsley to Lostock Gralam area (MA02) in the AP1 ES. Table 5: Summary of the AP1 amendments requiring changes to the Bill powers in the Wimboldsley to Lostock Gralam area. Page 68, 4th item in table, Description of the AP1 revised scheme, 1st paragraph:

1.2. A 3m wide shared-use pedestrian and cycle path, and associated highway drainage, will be constructed with a separation of at least 3.5m from the A556 Shurlach Road west edge of carriageway between the A530 King Street/A556 Shurlach Road roundabout and the A556 Shurlach Road/Birches Lane junction.

1.3. Document Q7: High Speed Rail (Crewe – Manchester) Supplementary Environmental Statement 1 and Additional Provision 1 Environmental Statement Non-technical summary. 10.2 Assessment of amendments in the Wimboldsley to Lostock Gralam area (MA02) in the AP1 ES. Traffic and transport. Effects arising during operation. Page 73, 1st paragraph:

1.4. Additional land permanently required for modifications to the A556 Shurlach Road and Birches Lane and provision of a shared use cycle and pedestrian path along A556 Shurlach Road (AP1-002-010) will remove the likely significant residual permanent moderate adverse effect on non-traffic related severance for non-motorised users of Cookes Lane reported in the main ES. The amendment will also give rise to a new likely significant residual permanent moderate beneficial effect on non-traffic related severance as a result of the new public right of way at Lostock Green, due to the decrease in journey length for cyclists of up to 2.6km.

1.5. Document Q12: Supplementary Environmental Statement 1 and Additional Provision 1 Environmental Statement Volume 2: Community Area report MA02 Wimboldsley to Lostock Gralam. 4.2 Engineering and utility amendments. Table 7: Summary of AP1 amendments requiring changes to Bill powers in the Wimboldsley to Lostock Gralam area. Page 67, 5th item in table, 1st paragraph:

1.6. Description of the AP1 revised scheme: A 3m wide shared-use pedestrian and cycle path, and associated highway drainage, will be constructed with a separation of at least 3.5m from the A556 Shurlach Road west edge of carriageway between the A530 King Street/A556 Shurlach Road roundabout and the A556 Shurlach Road/Birches Lane junction.

2. COMMENTS BY LACH DENNIS PARISH COUNCIL:

2.1. An existing baseline hard-surfaced, shared use pedestrian and cycle path occurs on the north-west side of, and parallel to, the A556 Shurlach Road from the A530/A556 junction to the A556/A559 junction (Chainages ML 267+400 to 270+400).

2.2. The design of the HS2 2b infrastructure and realigned A556 Shurlach Road should also maintain and realign, at no detriment to users, the hard-surfaced, shared use pedestrian and cycle path on the north-west side of and parallel to, the A556 Shurlach Road from the A530/A556 junction to the A556/A559 junction (Chainages ML 267+400 to 270+400).

2.3. An existing base line hard-surfaced shared use joint pedestrian and cycle way occurs from the A556 existing baseline hard-surfaced, shared use pedestrian and cycle path through the Lostock Picnic area to Cookes Lane.

2.4. The design of the HS2 2b infrastructure, the realigned A556 Shurlach Road and the realigned Cookes Lane should also maintain and realign, at no detriment to users, the hard-surfaced, shared use pedestrian and cycle way access from the realigned A556 to the realigned Cookes Lane at approximate Chainage ML 268+200.

2.5 Lach Dennis Parish Council disagrees with the statement in paragraph 1.4 above:

‘The amendment will also give rise to a new likely significant residual permanent moderate beneficial effect on non-traffic related severance as a result of the new public right of way at Lostock Green, **due to the decrease in journey length for cyclists of up to 2.6km.**’

2.6. The Amendment AP1-002-010 is a realignment c.50m further to the north-west of the existing baseline shared use pedestrian and cycle path on the north-west side of the A556 Shurlach Road from the A530/A556 junction to the A556/A559 junction. The existing and the proposed realigned shared use pedestrian and cycle paths are approximately of the same length between Chainages ML 267+400 to 270+400.

2.7. The realignment does not decrease the existing journey length for cyclists and pedestrians between Chainages ML 267+400 to 270+400.

2.8. The realigned shared use pedestrian and cycle path when used in conjunction with the diverted Birches Lane new Public Right of Way increases the distance, for cyclists and pedestrian from Birches Lane south east, Lostock Green at Chainage ML 268+800,

to join the realigned shared used cycle and pedestrian path (AP1-002-010) at Chainage ML 268+800 Birches Lane north-west, Lostock Green by:

881m (Ref: Q12 Supplementary Environmental Statement 1 and Additional Provision 1 Environmental Statement Volume 2: Community Area report MA02 Wimboldsley to Lostock Gralam Page 22, 1st item in table)

Or

1100m (Ref: Lach Dennis Parish Council Petition against High-Speed Rail (Crewe - Manchester) Bill. Paragraph 3.3.8.1. Lach Dennis Parish Council's view is that the replacement of the existing baseline pedestrian and cycle crossing point (Chainage ML 268+800) from Birches Lane (south) across A556 Shurlach Road to Birches Lane (north) with a c.400m road diversion of Birches Lane (south) and a new c.700m PROW is not satisfactory for pedestrian and cycle access from Birches Lane (south) to Birches Lane (north). The replacement Public Right Of Way one way route for pedestrians and cyclists to nearest community services is lengthened by 1100m from Lostock Green.

3. CORRECTION: CHANGE IN JOURNEY LENGTH FOR SOME NON-MOTORISED USERS OF BIRCHES LANE OF 581M. THE CORRECT LENGTH IS 881M

SES 1 and AP1 ES Reference: Traffic and transport Paragraph 14.5.17, Volume 2, MA02 of the main ES

3.1. Document Q12: High Speed Rail (Crewe – Manchester) In Parliament – Session 2022 - 2023 Supplementary Environmental Statement 1 and Additional Provision 1 Environmental Statement Volume 2: Community Area reports MA02: Wimboldsley to Lostock Gralam. 2.3 Corrections to the main ES. Table 2: Summary of corrections to the main ES Volume 2 Community Area report for the Wimboldsley to Lostock Gralam area. Page 22, 1st item in table.

3.2. Reason for correction: The main ES reports a change in journey length for some non-motorised users of Birches Lane of 581m. The correct length is 881m

Revised text: Paragraph 14.5.17, ninth bullet: Birches Lane – moderate adverse effect from increase in journey length for some users of 881m.

Change to significant effects and mitigation: No change. This correction will not lead to a new or different significant effect.

4. COMMENTS BY LACH DENNIS PARISH COUNCIL:

4.1. Lach Dennis Parish Council disagrees with the statement in paragraph 3.2. above. The proposed correction will lead to a new or different significant adverse effects for non-vehicle users.

4.2. Lach Parish Council reiterates its reasons and solution to mitigate and avoid significant adverse effects for non-vehicle users and residents within Lach Dennis Parish area, in paragraphs 4.4. to 4.15. below. These are from Sections 3.2 and 3.3 of the Lach Dennis Parish Council Petition against High-Speed Rail (Crewe - Manchester) Bill.

4.3. Note:

Text shown in blue: quotes and phrases from the High-Speed Rail (Crewe to Manchester) Hybrid Bill January 2022 Environmental Statement.

HS2* is an abbreviation for Select Committee / Government /Department for Transport / HS2 Ltd

4.4. The construction and operation of the HS2 Phase 2b high speed rail infrastructure scheme leaves a lasting adverse legacy on the 'Social capital', wellbeing and connectivity to vital community services, social and retail venues and public transport for the communities, businesses and industries of within Lach Dennis parish boundary.

4.5. Lostock Green does not have 'a range of community resources'. Lostock Green community's viability and well-being relies on vital 'accessibility to other community facilities' such as public transport, shops, pharmacies etc. only available outside Lostock Green in the nearby communities of Lostock Gralam, Broken Cross and Rudheath.

4.6. The existing well-used and vital public right of way pedestrian and cyclist crossing of the A556 Shurlach Road junctions with Birches Lane is the shortest link from the south-eastern part of Lostock Green to the north-eastern part of Lostock Green. The crossing provides ease of access within walking distance from Lostock Green to the 'range of community resources' in Lostock Gralam, Broken Cross and Rudheath.

4.7. The HS2 Phase 2b high speed rail line route passes through Lostock Green on the line of the existing A556 Shurlach Road and severs and diverts pedestrian and cyclist crossing of the A556 Shurlach Road, thus reducing and having a negative effect on Lostock Green community's 'accessibility to other community facilities' and a 'range of community resources'.

4.8. More consideration and provision is needed from HS2* on 'improving or altering the remaining portion of the community facility' i.e. the existing pedestrian and cyclist crossing of the A556 Shurlach Road.

4.9. HS2* should undertake to:

- Maintain the shortest connection between Lostock Green south-east and Lostock Green north-west
- Improve 'accessibility to other community facilities'
- Engage with Lach Dennis and Lostock Green Parish Council, and Cheshire West and Chester Council Local Authority to reach an acceptable mitigation design for a replacement pedestrian and bicycle crossing both the proposed HS2 Phase2b high speed rail scheme and the rerouted A556 Shurlach Road dual carriage in a location that does not adversely increase the distance to walk/cycle.

4.10. Lach Dennis Parish Council's view is that the replacement of the existing baseline crossing point (Chainage ML 268+800) with a road diversion of Birches Lane and new proposed Public Right Of Way is not satisfactory. The pedestrian and cycle crossing point existing baseline locality (Chainage ML 268+800) is a vital transport link for non-vehicle users, HS2* should undertake to maintain the existing baseline location pedestrian and cycle crossing point to prevent community severance and isolation of Lostock Green.

4.11. The proposal of a new Public Right of Way (PROW) from Birches Lane (south) to Birches Lane (north) results in a longer journey for residents of Lostock Green to walk to the nearest shop, Spar Garage, located south-west of Lostock Green in Broken Cross.

The proposed new Public Right of Way (PROW) diverts pedestrians initially opposite direction, to the north-east of Lostock Green, then doubles back; thereby increasing the return walking distance by c.80% from the current baseline journey of c.2.7km (1.7 miles) to c. 5km (3miles).

4.12. Lach Dennis Parish Council's view is that the replacement of the existing baseline pedestrian and cycle crossing point (Chainage ML 268+800) from Birches Lane (south) across A556 Shurlach Road to Birches Lane (north) with a c.400m road diversion of Birches Lane (south) and a new c.700m PROW is not satisfactory for pedestrian and cycle access from Birches Lane (south) to Birches Lane (north). The replacement Public Right Of Way one way route for pedestrians and cyclists to nearest community services is lengthened by 1100m from Lostock Green.

4.13. The replacement of the existing Birches Lane A556 Shurlach Road non-vehicular crossing point with a road diversion of Birches Lane (south) and new Public Right Of Way route for pedestrians and cyclists lessens the health and wellbeing of pedestrians, cyclists, particularly single pedestrians both during day time and the hours of darkness. The whole route of the realigned Birches Lane (south) and new Public Right Of Way route is flanked by trees and vegetated mounds restricting the visibility of users to others.

4.14. The Environmental Statement's proposed road diversion of Birches Lane (south) and new Public Right Of Way should maintain the features of the existing crossing and route along Birches Lane (south and north) that give the pedestrians visibility to others, thereby lessening potential vulnerabilities of walking on a public right of way that is isolated and hidden from view.

4.15. Features that enhance security of the realigned Birches Lane (south) and new Public Right Of Way are:

- Adjacent to a public highway
- Public lighting
- Hard surface suitable for pedestrians, pushchairs, wheel chairs, cyclists
- Pavement along road diversion of Birches Lane (south)
- Where possible sited adjacent to housing

3. What do you want to be done in response?

In the box below, tell us what you think should be done in response to your objections to the First Additional Provision to the Bill. You do not have to complete this box if you do not want to.

You can include this information in your response to section 3 'Objections to the First Additional Provision to the Bill' if you prefer. Please number each paragraph.

See comments under 2

March 2023

**HIGH SPEED RAIL (CREWE -
MANCHESTER) BILL**

**HOUSE OF COMMONS
SELECT COMMITTEE**

**Petition No. AP1-P2B -015:
Lach Dennis Parish Council**

Promoter's Response Document

INTRODUCTION

This Promoter's Response Document (PRD) forms the Promoter's response to Petition No. AP1-P2B-015, from Lach Dennis Parish Council.

In this PRD, 'the Promoter' means the Secretary of State and HS2 Ltd acting on their behalf.

The purpose of the PRD is to advise you and the Select Committee of the Promoter's position in relation to the petitioning points raised. It is intended that the PRD will alleviate many of the concerns raised in the petition.

The Table of Contents overleaf lists the page number, petitioning points in the order they appear in the petition, and a summary statement of the issue(s) contained in the petition for quick reference. Other supporting material (e.g., reports, drawings, and photographs) referred to in the response are attached where applicable.

Copies of the HS2 Phase 2b Information Papers referred to in the response can be found at

[HS2 Phase 2b \(Crewe – Manchester\) Information Papers - GOV.UK \(www.gov.uk\)](https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/115444/HS2_Phase_2b_Crewe_-_Manchester_Information_Papers.pdf).

Department for Transport
High Speed Two (HS2) Limited

BACKGROUND

Lach Dennis Parish Council represents the inhabitants of Lostock Green and Lach Dennis and is within the administrative area of Cheshire West and Cheshire Council.

On 6 March 2023 the Petitioner was sent a PRD for their Petition against the High Speed Rail (Crewe - Manchester) Bill (Petition No. HS2-P2B-011) [attached at Annex A]

PETITION NO. AP1-P2B-015

LACH DENNIS PARISH COUNCIL

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8	2.6 – 2.8	Realignment of A556 Shurlach Road
10	3.1 – 4.3	Journey length for non-motorised users of Birches Lane
12	4.4 – 4.15	Local connections and community facilities

ATTACHMENTS

Title	
Annex A	Petition No. HS2-P2B-011
Annex B	Promoter's Response Document - HS2-P2B-011

HOUSE OF COMMONS SELECT COMMITTEE

HIGH SPEED RAIL (CREWE - MANCHESTER) BILL

PROMOTER'S RESPONSE TO PETITION OF: Lach Dennis Parish Council

PETITION NO: AP1-P2B-015

PARAGRAPH NO: 1.1-2.2

ISSUE RAISED: Public right of way from A530 to A559 along north-western side of A556

PETITION PARAGRAPH: 1.1 Document Q7: High Speed Rail (Crewe – Manchester) Supplementary Environmental Statement 1 and Additional Provision 1 Environmental Statement Nontechnical summary. 10.1 Summary of amendments in the Wimboldsley to Lostock Gram area (MA02) in the AP1 ES. Table 5: Summary of the AP1 amendments requiring changes to the Bill powers in the Wimboldsley to Lostock Gram area. Page 68, 4th item in table, Description of the AP1 revised scheme, 1st paragraph:

1.2. A 3m wide shared-use pedestrian and cycle path, and associated highway drainage, will be constructed with a separation of at least 3.5m from the A556 Shurlach Road west edge of carriageway between the A530 King Street/A556 Shurlach Road roundabout and the A556 Shurlach Road/Birches Lane junction.

1.3. Document Q7: High Speed Rail (Crewe – Manchester) Supplementary Environmental Statement 1 and Additional Provision 1 Environmental Statement Nontechnical summary. 10.2 Assessment of amendments in the Wimboldsley to Lostock Gram area (MA02) in the AP1 ES. Traffic and transport. Effects arising during operation. Page 73, 1st paragraph:

1.4. Additional land permanently required for modifications to the A556 Shurlach Road and Birches Lane and provision of a shared use cycle and pedestrian path along A556 Shurlach Road (AP1-002-010) will remove the likely significant residual permanent moderate adverse effect on non-traffic related severance for non-motorised users of Cookes Lane reported in the main ES. The amendment will also give rise to a new likely significant residual permanent moderate beneficial effect on

non-traffic related severance as a result of the new public right of way at Lostock Green, due to the decrease in journey length for cyclists of up to 2.6km.

1.5. Document Q12: Supplementary Environmental Statement 1 and Additional Provision 1 Environmental Statement Volume 2: Community Area report MA02 Wimboldsley to Lostock Gralam. 4.2 Engineering and utility amendments. Table 7: Summary of AP1 amendments requiring changes to Bill powers in the Wimboldsley to Lostock Gralam area. Page 67, 5th item in table, 1st paragraph:

1.6. Description of the AP1 revised scheme: A 3m wide shared-use pedestrian and cycle path, and associated highway drainage, will be constructed with a separation of at least 3.5m from the A556 Shurlach Road west edge of carriageway between the A530 King Street/A556 Shurlach Road roundabout and the A556 Shurlach Road/Birches Lane junction.

2.1. An existing baseline hard-surfaced, shared use pedestrian and cycle path occurs on the north-west side of, and parallel to, the A556 Shurlach Road from the A530/A556 junction to the A556/A559 junction (Chainages ML 267+400 to 270+400).

2.2. The design of the HS2 2b infrastructure and realigned A556 Shurlach Road should also maintain and realign, at no detriment to users, the hard-surfaced, shared use pedestrian and cycle path on the north-west side of and parallel to, the A556 Shurlach Road from the A530/A556 junction to the A556/A559 junction (Chainages ML 267+400 to 270+400).

PROMOTER'S RESPONSE:

Amendment: Provision of a shared use cycle and pedestrian path along A556 Shurlach Road

1. The Promoter acknowledges that the paragraphs taken from the Supplementary Environmental Statement 1 and Additional Provision 1 (SES 1 and AP1), Volume 2, (MA02) have been highlighted by the Petitioner for context.

Public rights of way from A530 to A559

2. Since the January 2022 deposit of the HS2 Crewe – Manchester Environmental Statement (main ES), further work has been undertaken to review cycling provision on the realigned A556 Shurlach Road and connectivity with the wider cycle network. This work (in accordance with the Department for Transport's Cycle infrastructure design guidance note LTN 1/20) highlighted a potential future demand for cycling along the

A556 Shurlach Road corridor. A shared use pedestrian and cycle path is proposed in the AP1 revised scheme (July 2022) with a widened verge along the A556 Shurlach Road to increase the separation between cyclists and motorised vehicular traffic. It is also proposed to link this shared use pedestrian and cycle path along the A556 Shurlach Road towards Lostock Green through the upgrade of a new Public Right of Way (PRoW) (part of the original Proposed Scheme) under the realigned A556 Shurlach Road. Segregation of cyclists from other vehicular traffic would provide safety benefits and reduce the risk of collisions between motorised vehicles and cyclists.

HOUSE OF COMMONS SELECT COMMITTEE

HIGH SPEED RAIL (CREWE - MANCHESTER) BILL

PROMOTER'S RESPONSE TO PETITION OF: Lach Dennis Parish Council

PETITION NO: AP1-P2B-015

PARAGRAPH NO: 2.3, 2.4

ISSUE RAISED: Public right of way from Cookes Lane to A556

PETITION PARAGRAPH: 2.3. An existing base line hard-surfaced shared use joint pedestrian and cycle way occurs from the A556 existing baseline hard-surfaced, shared use pedestrian and cycle path through the Lostock Picnic area to Cookes Lane.

2.4. The design of the HS2 2b infrastructure, the realigned A556 Shurlach Road and the realigned Cookes Lane should also maintain and realign, at no detriment to users, the hard-surfaced, shared use pedestrian and cycle way access from the realigned A556 to the realigned Cookes Lane at approximate Chainage ML 268+200.

PROMOTER'S RESPONSE:

Public right of way from Cookes Lane to A556

1. The Proposed Scheme as reported in the main ES required the closure of the north-eastern section of Cookes Lane. As a result, non-motorised users of Cookes Lane would have been subject to a moderate adverse effect on non-traffic related severance, an increase in journey length of up to 588m.

2. The Additional Provision 1 (AP1) revised scheme would provide a new connection for non-motorised users at the southern end of Cookes Lane, allowing access between Cookes Lane and a new shared use cycle path alongside the A556 Shurlach Road. The amendment would reduce the potential increase in journey length for some non-motorised users of Cookes Lane from 588m to 35m. This AP1 amendment would remove the moderate adverse effect on non-traffic related severance reported in the main ES.

HOUSE OF COMMONS SELECT COMMITTEE

HIGH SPEED RAIL (CREWE - MANCHESTER) BILL

PROMOTER'S RESPONSE TO PETITION OF: Lach Dennis Parish Council

PETITION NO: AP1-P2B-015

PARAGRAPH NO: 2.6 – 2.8

ISSUE RAISED: Realignment of A556 Shurlach Road

PETITION PARAGRAPH: 2.6. The Amendment AP1-002-010 is a realignment c.50m further to the north-west of the existing baseline shared use pedestrian and cycle path on the north-west side of the A556 Shurlach Road from the A530/A556 junction to the A556/A559 junction. The existing and the proposed realigned shared use pedestrian and cycle paths are approximately of the same length between Chainages ML 267+400 to 270+400.

2.7. The realignment does not decrease the existing journey length for cyclists and pedestrians between Chainages ML 267+400 to 270+400.

2.8. The realigned shared use pedestrian and cycle path when used in conjunction with the diverted Birches Lane new Public Right of Way increases the distance, for cyclists and pedestrian from Birches Lane south east, Lostock Green at Chainage ML 268+800, to join the realigned shared used cycle and pedestrian path (AP1-002-010) at Chainage ML 268+800 Birches Lane north-west, Lostock Green by: 881m (Ref: Q12 Supplementary Environmental Statement 1 and Additional Provision 1 Environmental Statement Volume 2: Community Area report MA02 Wimboldsley to Lostock Gralam Page 22, 1st item in table).

Or

1100m (Ref: Lach Dennis Parish Council Petition against High-Speed Rail (Crewe - Manchester) Bill. Paragraph 3.3.8.1. Lach Dennis Parish Council's view is that the replacement of the existing baseline pedestrian and cycle crossing point (Chainage ML 268+800) from Birches Lane (south) across A556 Shurlach Road to Birches Lane (north) with a c.400m road diversion of Birches Lane (south) and a new c.700m PROW is not

satisfactory for pedestrian and cycle access from Birches Lane (south) to Birches Lane (north). The replacement Public Right Of Way one way route for pedestrians and cyclists to nearest community services is lengthened by 1100m from Lostock Green.

PROMOTER'S RESPONSE:

Realignment of A556 Shurlach Road

1. The Promoter does not agree that the diversion of Birches Lane and a new PRoW would not be satisfactory for pedestrian and cycle access from Birches Lane (east) to Birches Lane (west).
2. In the AP1 revised scheme, the new PRoW would connect Birches Lane on the western side of the A556 Shurlach Road realignment and Restricted Byway Lostock Gralam 1/1 on the eastern side of the A556 Shurlach Road realignment. This would help to enable separation of cyclists from motorised vehicular traffic, which would provide safety benefits and reduce the risk of collisions between motorised vehicles and cyclists.
3. These modifications would reduce the journey length for cyclists by up to 2.6km compared to the original Proposed Scheme, resulting in a moderate beneficial effect on non-traffic related severance, which is significant. The stated change in journey length includes the introduction of a dedicated grade separate cycle crossing facility under the A556 Shurlach Road, which at present only comprises an informal uncontrolled at-grade crossing facility over the A556. The AP1 revised scheme would remove the need to travel along a section of the realigned high speed A556 Shurlach Road dual carriageway, when travelling between Birches Lane (east) to Birches Lane (west) or vice versa.
4. The Promoter has noted the Petitioner's comments in relation to severance for non-motorised users on the A556 Shurlach Road. The Promoter is in an ongoing dialogue with Cheshire West and Chester Council as the relevant local highway authority in this area. Any proposed solution, either for the current AP1 design, or alternative, would require the prior consent of Cheshire West and Chester Council in any event.
5. The Promoter considers that it would not be able to meet the Petitioner's request for re-providing on a like for like basis the at-grade uncontrolled crossing similar to the existing arrangements. The Promoter's view is that an at-grade crossing on the realigned A556 Shurlach Road would not meet current highways standards for pedestrian safety unless a significant reduction in the 85th percentile speed could be achieved.

HOUSE OF COMMONS SELECT COMMITTEE

HIGH SPEED RAIL (CREWE - MANCHESTER) BILL

PROMOTER'S RESPONSE TO PETITION OF: Lach Dennis Parish Council

PETITION NO: AP1-P2B-015

PARAGRAPH NO: 3.1 – 4.3

ISSUE RAISED: Journey length for non-motorised users of Birches Lane

PETITION PARAGRAPH: 3.1. Document Q12: High Speed Rail (Crewe – Manchester) In Parliament – Session 2022 - 2023 Supplementary Environmental Statement 1 and Additional Provision 1 Environmental Statement Volume 2: Community Area reports MA02: Wimboldsley to Lostock Gralam. 2.3 Corrections to the main ES. Table 2: Summary of corrections to the main ES Volume 2 Community Area report for the Wimboldsley to Lostock Gralam area. Page 22, 1st item in table.

3.2. Reason for correction: The main ES reports a change in journey length for some non-motorised users of Birches Lane of 581m. The correct length is 881m.

Revised text: Paragraph 14.5.17, ninth bullet: Birches Lane – moderate adverse effect from increase in journey length for some users of 881m.

Change to significant effects and mitigation: No change. This correction will not lead to a new or different significant effect.

4.1. Lach Dennis Parish Council disagrees with the statement in paragraph 3.2. above. The proposed correction will lead to a new or different significant adverse effects for non-vehicle users.

PROMOTER'S RESPONSE:

Journey length for non-motorised users of Birches Lane

1. In the main ES, Volume 2 Community Area Report for MA02, section 14.5.17, a moderate adverse significant effect was reported for some non-motorised users on Birches Lane due to an increase in journey length of 581m. However, as reported in

the July 2022 SES1 and AP1 ES, a correction was made in Volume 2, Community Area Report for MA02, Table 2, that the increase quoted should have been reported as 881m. This correction does not change the reported effect, which continues to be assessed as moderate adverse, and therefore remains significant. Given that the effects within the main ES and SES1 and AP1 ES were both reported as moderate adverse effects and therefore significant, there was no need to report a new or different significant effect at AP1.

2. The assessment criteria for transport effects can be found in SES 1 and AP1 ES Traffic and transport Technical note – Guidance on significance criteria for traffic and transport. Tables 12 (severance during construction) and 25 (severance during operation) outlines that the changes in length for pedestrians of between 500-1,500m for Public Rights of Way, used by less than 200 people per day, result in a moderate adverse effect. The previously stated increase and the AP1 corrected increase both fall within the state range outlined above.

HOUSE OF COMMONS SELECT COMMITTEE

HIGH SPEED RAIL (CREWE - MANCHESTER) BILL

PROMOTER'S RESPONSE TO PETITION OF: Lach Dennis Parish Council

PETITION NO: AP1-P2B-015

PARAGRAPH NO: 4.4 – 4.15

ISSUE RAISED: Local connections and community facilities

PETITION PARAGRAPH: 4.4. The construction and operation of the HS2 Phase 2b high speed rail infrastructure scheme leaves a lasting adverse legacy on the 'Social capital', wellbeing and connectivity to vital community services, social and retail venues and public transport for the communities, businesses and industries of within Lach Dennis parish boundary.

4.5. Lostock Green does not have 'a range of community resources'. Lostock Green community's viability and well-being relies on vital 'accessibility to other community facilities' such as public transport, shops, pharmacies etc. only available outside Lostock Green in the nearby communities of Lostock Gralam, Broken Cross and Rudheath.

4.6. The existing well-used and vital public right of way pedestrian and cyclist crossing of the A556 Shurlach Road junctions with Birches Lane is the shortest link from the south-eastern part of Lostock Green to the north-eastern part of Lostock Green. The crossing provides ease of access within walking distance from Lostock Green to the 'range of community resources' in Lostock Gralam, Broken Cross and Rudheath.

4.7. The HS2 Phase 2b high speed rail line route passes through Lostock Green on the line of the existing A556 Shurlach Road and severs and diverts pedestrian and cyclist crossing of the A556 Shurlach Road, thus reducing and having a negative effect on Lostock Green community's 'accessibility to other community facilities' and a 'range of community resources'.

4.8. More consideration and provision is needed from HS2* on 'improving or altering the remaining portion of the community

facility' i.e. the existing pedestrian and cyclist crossing of the A556 Shurlach Road.

4.9. HS2* should undertake to:

- Maintain the shortest connection between Lostock Green south-east and Lostock Green north-west
- Improve 'accessibility to other community facilities'
- Engage with Lach Dennis and Lostock Green Parish Council, and Cheshire West and Chester Council Local Authority to reach an acceptable mitigation design for a replacement pedestrian and bicycle crossing both the proposed HS2 Phase2b high speed rail scheme and the rerouted A556 Shurlach Road dual carriage in a location that does not adversely increase the distance to walk/cycle.

4.10. Lach Dennis Parish Council's view is that the replacement of the existing baseline crossing point (Chainage ML 268+800) with a road diversion of Birches Lane and new proposed Public Right Of Way is not satisfactory. The pedestrian and cycle crossing point existing baseline locality (Chainage ML 268+800) is a vital transport link for non-vehicle users, HS2* should undertake to maintain the existing baseline location pedestrian and cycle crossing point to prevent community severance and isolation of Lostock Green.

4.11. The proposal of a new Public Right of Way (PROW) from Birches Lane (south) to Birches Lane (north) results in a longer journey for residents of Lostock Green to walk to the nearest shop, Spar Garage, located south-west of Lostock Green in Broken Cross.

The proposed new Public Right of Way (PROW) diverts pedestrians initially opposite direction, to the north-east of Lostock Green, then doubles back; thereby increasing the return walking distance by c.80% from the current baseline journey of c.2.7km (1.7 miles) to c. 5km (3miles).

4.12. Lach Dennis Parish Council's view is that the replacement of the existing baseline pedestrian and cycle crossing point (Chainage ML 268+800) from Birches Lane (south) across A556 Shurlach Road to Birches Lane (north) with a c.400m road diversion of Birches Lane (south) and a new c.700m PROW is not satisfactory for pedestrian and cycle access from Birches Lane (south) to Birches Lane (north). The replacement Public Right Of Way one way route for pedestrians and cyclists to

nearest community services is lengthened by 1100m from Lostock Green.

4.13. The replacement of the existing Birches Lane A556 Shurlach Road non-vehicular crossing point with a road diversion of Birches Lane (south) and new Public Right Of Way route for pedestrians and cyclists lessens the health and wellbeing of pedestrians, cyclists, particularly single pedestrians both during day time and the hours of darkness. The whole route of the realigned Birches Lane (south) and new Public Right Of Way route is flanked by trees and vegetated mounds restricting the visibility of users to others.

4.14. The Environmental Statement's proposed road diversion of Birches Lane (south) and new Public Right Of Way should maintain the features of the existing crossing and route along Birches Lane (south and north) that give the pedestrians visibility to others, thereby lessening potential vulnerabilities of walking on a public right of way that is isolated and hidden from view.

4.15. Features that enhance security of the realigned Birches Lane (south) and new Public Right Of Way are:

- Adjacent to a public highway
- Public lighting
- Hard surface suitable for pedestrians, pushchairs, wheel chairs, cyclists
- Pavement along road diversion of Birches Lane (south)
- Where possible sited adjacent to housing

PROMOTER'S RESPONSE:

Community Severance at Lostock Green

1. The Petitioner has raised the issues of local connections and community facilities in Petition No. HS2-P2B-011 against the Bill, attached at Annex A. Please refer to the original Promoter's Response Document, attached at Annex B.

2. As set out above, the Promoter has noted the Petitioner's comments in relation to crossing facilities for non-motorised users on the A556 Shurlach Road. The Promoter is in an ongoing dialogue with the relevant Local Highways Authority (Cheshire West and Chester Council) in relation to this topic.

Mrs Lyndsey Sandison
Lach Dennis Parish Council
6 Houghton Close
Northwich
Cheshire
CW9 8NW

Sent by email to: clerk@lachdennisandlostockgreen.co.uk

14 April 2023

Dear Mrs Sandison,

HIGH SPEED RAIL (CREWE – MANCHESTER) BILL – HOUSE OF COMMONS SELECT COMMITTEE: PETITION HS2-P2B - 011 AND AP1-015 – LACH DENNIS PARISH COUNCIL

I am writing to you in my capacity as the Director of Hybrid Bill Delivery at HS2 Ltd, which is acting on behalf of the Promoter of the High Speed Rail (Crewe - Manchester) Bill ('the Bill') currently before Parliament.

Further to the Promoters Response Documents sent to you on 6 March 2023 which set out the Promoter's position on the issues raised in Lach Dennis Parish Council's petitions against the Bill and first Additional Provision to the Bill in the House of Commons, I am writing to you, on behalf of the Secretary of State for Transport, to offer Lach Dennis and Lostock Green Parish Council the following assurance:

In this assurance:

"Bill" means the High Speed (Crewe-Manchester) Bill introduced into Parliament on 24 January 2022 as amended by the Additional Provision to the Bill deposited on 6 July 2022 and the expression "the Bill" shall be taken for the purposes of this assurance to include (unless the context otherwise requires) the form of the Bill as enacted.

"Local highway authority" means Cheshire West and Chester Council.

"Plan 1" means the plan attached to this assurance and labelled Plan 1.

"Plan 2" means the plan attached to this assurance and labelled Plan 2.

“Promoter” “Promoter” means the Secretary of State for Transport (or any successor Secretary of State or Minister holding the Transport portfolio) in his capacity as promoter of the Bill and includes, so far as relevant, any nominated undertaker exercising any powers or functions under the Bill once enacted; and

“nominated undertaker” means High Speed Two (HS2) Limited or such other person as may be appointed nominated undertaker under clause 42 of the Bill.

1. The Promoter will engage with the local highway authority in respect of the potential provision of a new footpath to run cross-field from Village Close, Lostock Green, as shown on Plan 1, and to join Footpath Lach Dennis 3X/1 at point P5, as shown on Plan 2.

If accepted, this assurance will be included in the Register of Undertakings and Assurances, which is held by the Department for Transport. Drafts of the Register will be published regularly during the passage of the Bill and it will be finalised after Royal Assent. A nominated undertaker will be contractually obliged to comply with all relevant undertakings and assurances set out in the Register. The assurance process is set out in Annex A.

If you have any further queries please don't hesitate to contact Kirsty Clarke, Petition Manager, on 07826886543 or kirsty.clarke@hs2.org.uk.

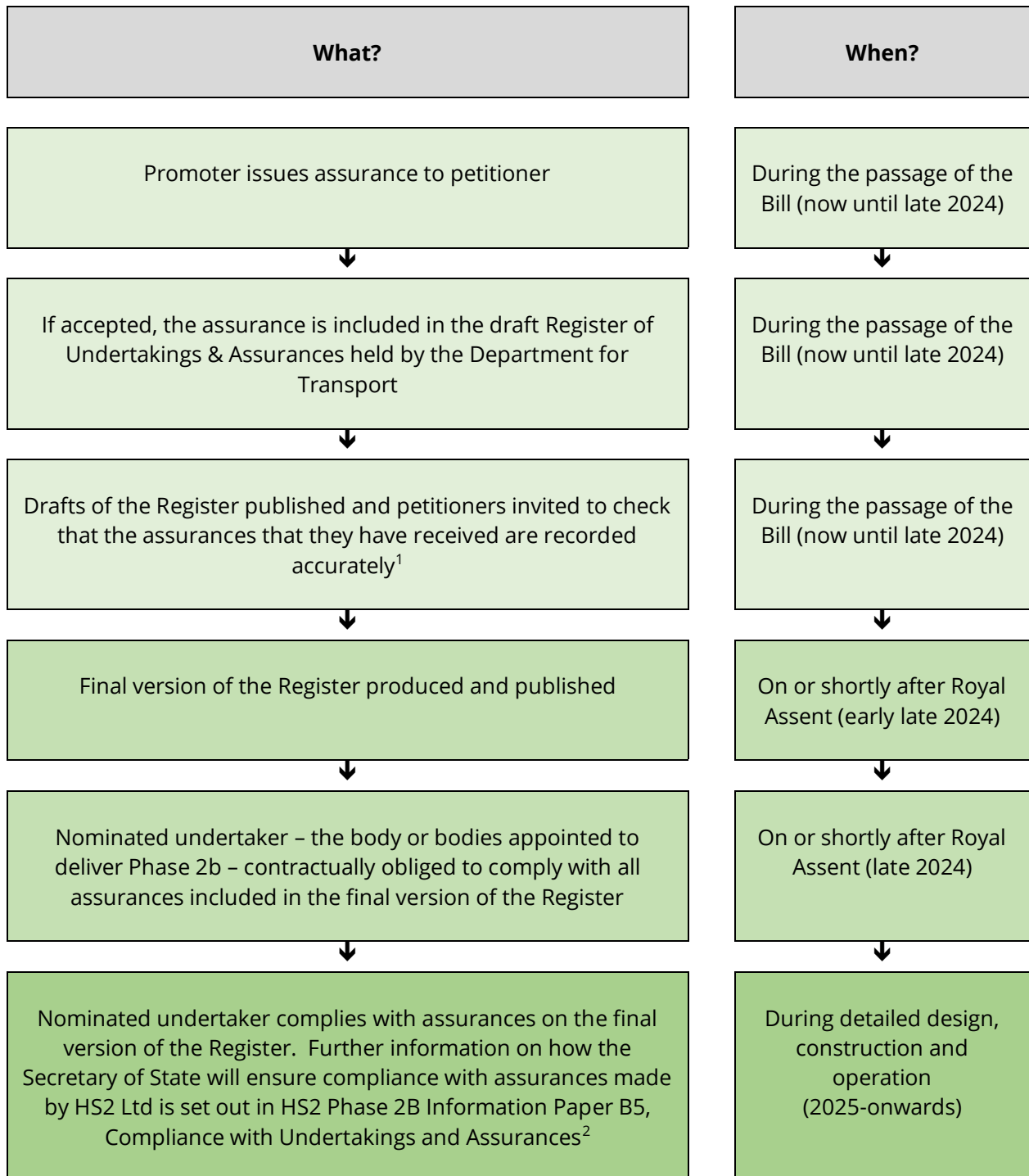
Yours sincerely


pp.

Lucy Lagerweij
Director, Hybrid Bill Delivery
High Speed Two (HS2) Limited

Annex A

ASSURANCES: STEPS AND TIMING



¹ The latest draft of the Register can be found at <https://www.gov.uk/government/publications/hs2-phase-2b-crewe-manchester-register-of-undertakings-and-assurances>

² A copy can be found at https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/1048801/B5_Compliance_with_undertakings_and_assurances_v1.pdf

FOR CONTINUATION SEE REPLACEMENT SHEET No. 1-34



FOR CONTINUATION SEE REPLACEMENT SHEET No. 1-37

Work No. 1/21 (Railway)
 Works Nos. 1/63, 1/63A (Roads)
 Works Nos. 1/63B, 1/63C, 1/63D, 1/65 (Access Roads)
 Works Nos. 1/66, 1/67, 1/68 (Gas Mains)
 Works Nos. 1/69, 1/70 (Temporary Bridges)

For Section of Work No. 1/21 see Sheet No. 3-33
 For Section of Work No. 1/63 see Sheet No. 3-51
 For Section of Work No. 1/63A see Sheet No. 3-52
 For Section of Work No. 1/63B see Sheet No. 3-52
 For Section of Work No. 1/63C see Sheet No. 3-52
 For Section of Work No. 1/63D see Sheet No. 3-52
 For Section of Work No. 1/65 see Sheet No. 3-55
 For Section of Work No. 1/66 see Sheet No. 3-55
 For Section of Work No. 1/67 see Sheet No. 3-54
 For Section of Work No. 1/68 see Sheet No. 3-55
 For Section of Work No. 1/69 see Sheet No. 3-55
 For Section of Work No. 1/70 see Sheet No. 3-55

The area enclosed by any limit of deviation or by any limit of land to be acquired or used is the area extending to the outer edge of the line marking those limits

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AMENDMENTS TO THIS SHEET ARE AS
FOLLOWS :-

Plots AP1-1, AP1-2, AP1-3, AP1-4, AP1-5, AP1-6, AP1-7, AP1-8, AP1-9 and AP1-10 added in the Parish of Lach Dennis

Plot 37a added in the Parish of Rudheath

Plots 64a, 70b, 74a, 74b, 78a, 98a, 100a and 103a added in the Parish of Lach Dennis

Plots 64, 70, 74, 78, 81, 98, 100 and 103 removed in the Parish of Lach Dennis

Plot 37 removed in the Parish of Rudheath

Access point relocated at Birches Lane

Point P2 relocated

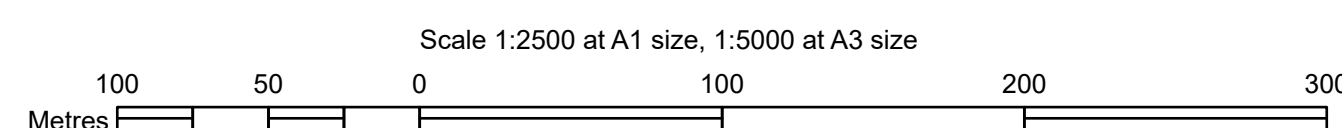
Point P8 added

FOR CONTINUATION SEE SHEET No. 1-36

Proposed Railway over Wade Brook,
Work No. 1/21, span 50.00m, headway 17.05m.

Proposed Temporary Bridge over Wade Brook,
Work No. 1/70, span 20.25m, headway 4.27m.

Proposed Temporary Bridge over Wade Brook, Work No. 1/69, span 20.25m, headway 3.81m.	Proposed Bridge over Wade Brook, Work No. 1/63, span 43.95m, headway 9.20m.
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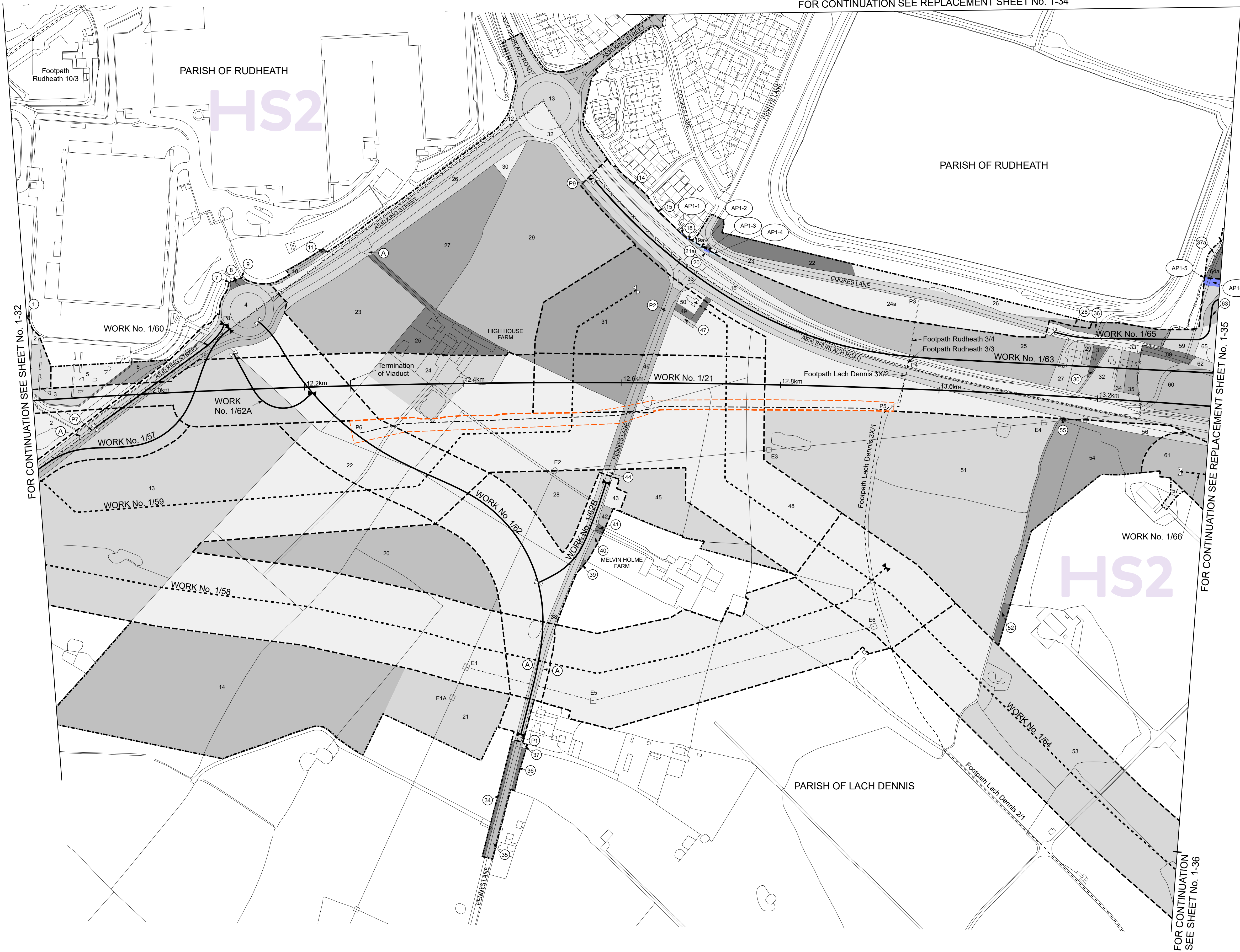


Drawing No. **2PT24-MWJ-HY-PLN-M000-000035** Rev **AP01**

COUNTY OF CHESHIRE
BOROUGH OF CHESHIRE WEST & CHESTER

PLAN

FOR CONTINUATION SEE REPLACEMENT SHEET No. 1-34



REPLACEMENT SHEET No. 1-33
IN PARLIAMENT - SESSION 2022-23
HIGH SPEED RAIL
(CREWE – MANCHESTER)
ADDITIONAL PROVISION 1

Work No. 1/21 (Railway)
Works Nos. 1/60, 1/62, 1/63 (Roads)
Works Nos. 1/62A, 1/62B, 1/65 (Access Roads)
Works Nos. 1/58, 1/59, 1/64, 1/66 (Gas Mains)
Work No. 1/57 (Temporary Road)

For Section of Work No. 1/21 see Sheet No. 3-33
For Section of Work No. 1/57 see Sheet No. 3-49
For Section of Work No. 1/58 see Sheet No. 3-49
For Section of Work No. 1/59 see Sheet No. 3-50
For Section of Work No. 1/60 see Sheet No. 3-50
For Section of Work No. 1/62 see Sheet No. 3-50
For Section of Work No. 1/62A see Sheet No. 3-50
For Section of Work No. 1/62B see Sheet No. 3-50
For Section of Work No. 1/63 see Sheet No. 3-51
For Section of Work No. 1/64 see Sheet No. 3-53
For Section of Work No. 1/65 see Sheet No. 3-55
For Section of Work No. 1/66 see Sheet No. 3-55

The area enclosed by any limit of deviation or by any limit of land to be acquired or used is the area extending to the outer edge of the line marking those limits

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AMENDMENTS TO THIS SHEET ARE AS FOLLOWS :-

Plot AP1-1 added in the Parish of Lach Dennis
Plots AP1-1, AP1-2, AP1-3, AP1-4 and AP1-5 added in the Parish of Rudheath
Plot 64a added in the Parish of Lach Dennis
Plots 19a, 21a, 24a and 37a added in the Parish of Rudheath
Plot 64 removed in the Parish of Lach Dennis
Plots 19, 21, 24 and 37 removed in the Parish of Rudheath

Gerard Rhodes
Cheshire West and Chester Council
The Portal
Wellington Road
Ellesmere Port
CH65 0BZ

By email to: Gerard.Rhodes@cheshirewestandchester.gov.uk

14 April 2023

Dear Mr Rhodes

HIGH SPEED RAIL (CREWE – MANCHESTER) BILL – HOUSE OF COMMONS SELECT COMMITTEE: PETITION HS2-110 AND AP1-016 - CHESHIRE WEST & CHESTER COUNCIL

I am writing to you in my capacity as the Director of Hybrid Bill Delivery at HS2 Ltd, which is acting on behalf of the Promoter of the High Speed Rail (Crewe - Manchester) Bill ('the Bill') currently before Parliament.

I am writing to you, on behalf of the Secretary of State for Transport, to offer Cheshire West and Chester Council the following assurance in relation to the issue raised in Lach Dennis Parish Council's petition (HS2- P2B – 011) against the Bill in the House of Commons:

In this assurance:

"Bill" means the High Speed (Crewe-Manchester) Bill introduced into Parliament on 24 January 2022 as amended by the Additional Provision to the Bill deposited on 6 July 2022 and the expression "the Bill" shall be taken for the purposes of this assurance to include (unless the context otherwise requires) the form of the Bill as enacted.

"Local highway authority" means Cheshire West and Chester Council.

"Plan 1" means the plan attached to this assurance and labelled Plan 1.

"Plan 2" means the plan attached to this assurance and labelled Plan 2.

“Promoter” “Promoter” means the Secretary of State for Transport (or any successor Secretary of State or Minister holding the Transport portfolio) in his capacity as Promoter of the Bill and includes, so far as relevant, any nominated undertaker exercising any powers or functions under the Bill once enacted; and

“nominated undertaker” means High Speed Two (HS2) Limited or such other person as may be appointed nominated undertaker under clause 42 of the Bill.

1. The Promoter will engage with the local highway authority in respect of the potential provision of a new footpath to run cross-field from Village Close, Lostock Green, as shown on Plan 1, and to join Footpath Lach Dennis 3X/1 at point P5, as shown on Plan 2.

If accepted, these assurances will be included in the Register of Undertakings and Assurances, which is held by the Department for Transport. Drafts of the Register will be published regularly during the passage of the Bill and it will be finalised after Royal Assent. A nominated undertaker will be contractually obliged to comply with all relevant undertakings and assurances set out in the Register. The assurance process is set out in Annex A.

If you have any further queries please don't hesitate to contact Alan Phelan, Petition Manager, on 077 8022 7796 or alan.phelan@hs2.org.uk.

Yours sincerely

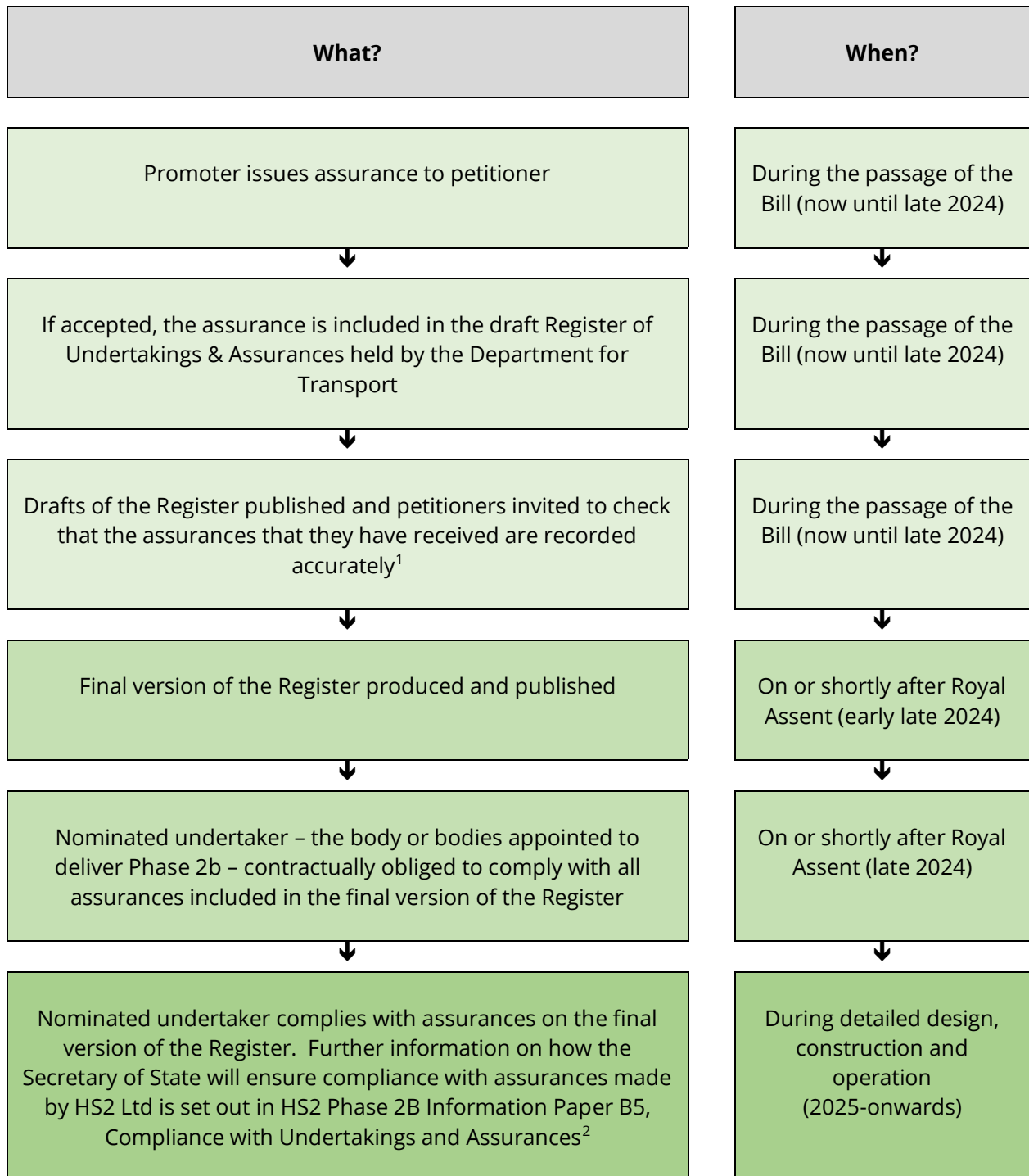
pp



Lucy Lagerweij
Director, Hybrid Bill Delivery
High Speed Two (HS2) Limited

Annex A

ASSURANCES: STEPS AND TIMING



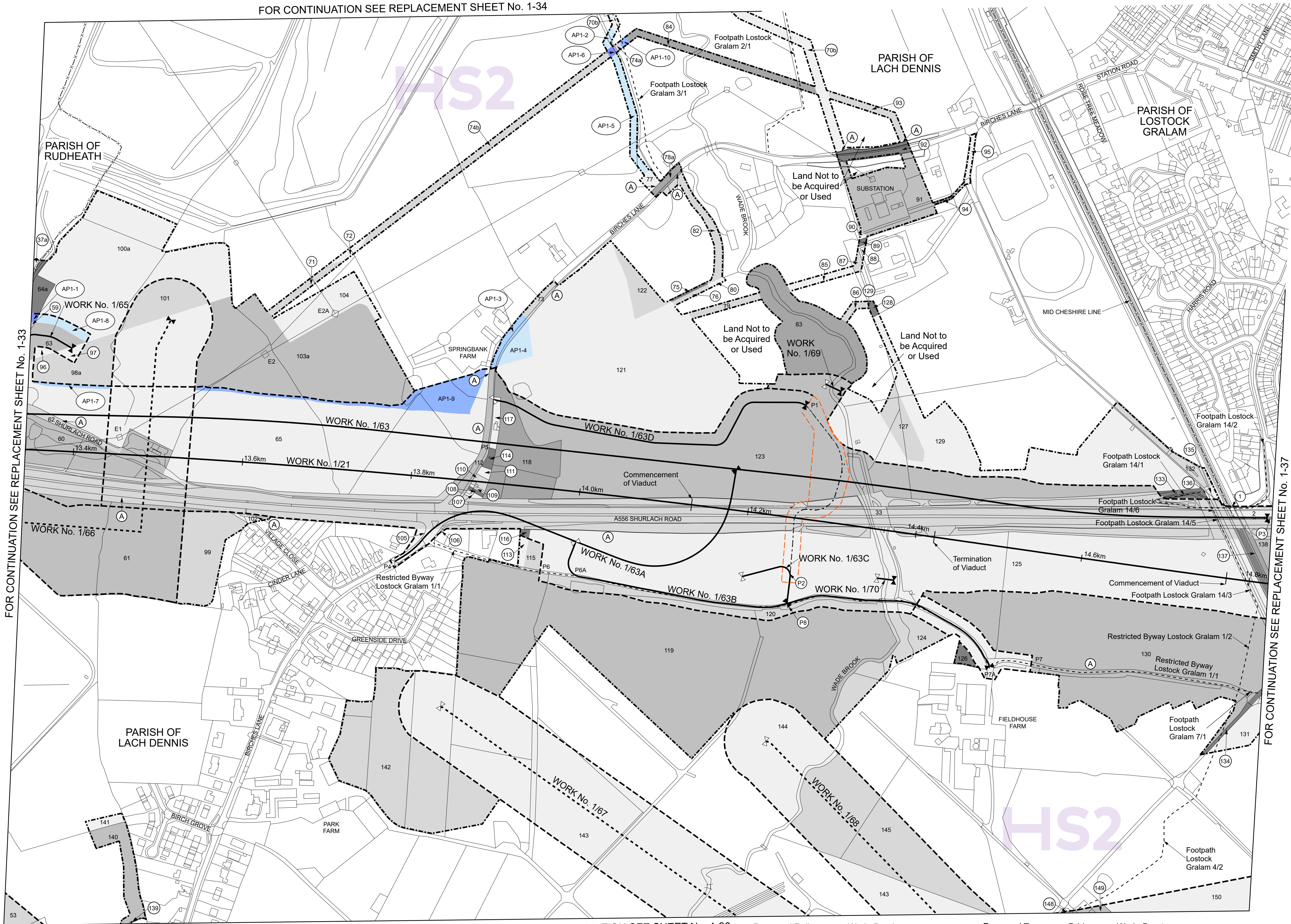
¹ The latest draft of the Register can be found at <https://www.gov.uk/government/publications/hs2-phase-2b-crewe-manchester-register-of-undertakings-and-assurances>

² A copy can be found at https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/1048801/B5_Compliance_with_undertakings_and_assurances_v1.pdf

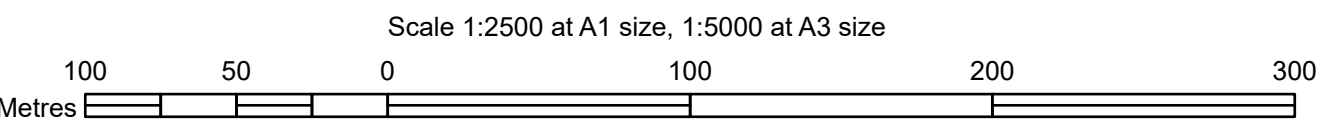
COUNTY OF CHESHIRE
BOROUGH OF CHESHIRE WEST & CHESTER

PLAN

FOR CONTINUATION SEE REPLACEMENT SHEET No. 1-34



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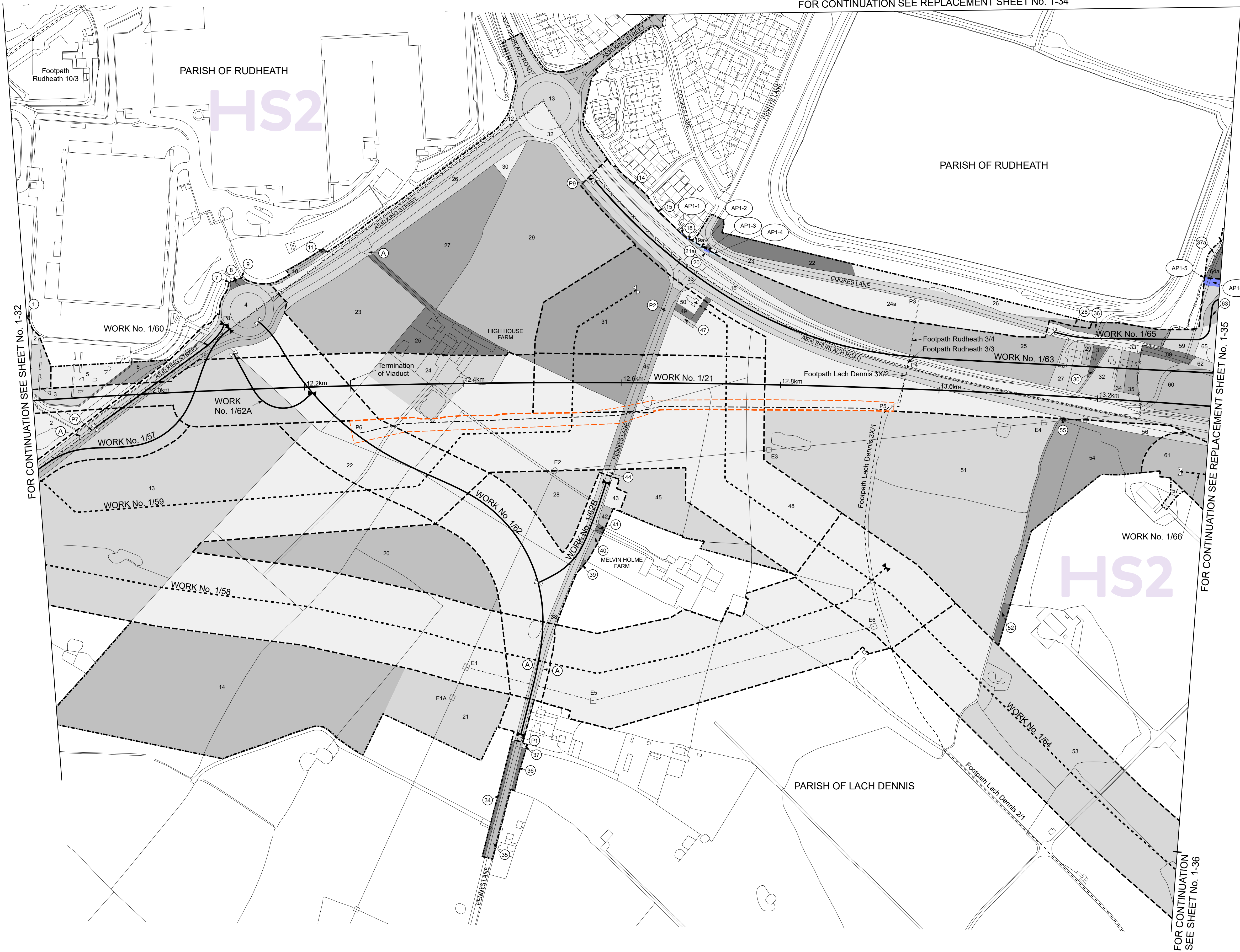
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IN PARLIAMENT - SESSION 2022-23
HIGH SPEED RAIL (CREWE - MANCHESTER)
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Work No. 1/21 (Railway)
Works Nos. 1/63, 1/63A (Roads)
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Works Nos. 1/66, 1/67, 1/68 (Gas Mains)
Works Nos. 1/69, 1/70 (Temporary Bridges)
For Section of Work No. 1/21 see Sheet No. 3-33
For Section of Work No. 1/63 see Sheet No. 3-51
For Section of Work No. 1/63A see Sheet No. 3-52
For Section of Work No. 1/63B see Sheet No. 3-52
For Section of Work No. 1/63C see Sheet No. 3-52
For Section of Work No. 1/63D see Sheet No. 3-52
For Section of Work No. 1/65 see Sheet No. 3-55
For Section of Work No. 1/66 see Sheet No. 3-55
For Section of Work No. 1/67 see Sheet No. 3-54
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Plots AP1-1, AP1-2, AP1-3, AP1-4, AP1-5, AP1-6, AP1-7, AP1-8, AP1-9 and AP1-10 added in the Parish of Lach Dennis
Plot 37a added in the Parish of Rudheath
Plots 64a, 70b, 74a, 74b, 78a, 98a, 100a and 103a added in the Parish of Lach Dennis
Plots 64, 70, 74, 78, 81, 98, 100 and 103 removed in the Parish of Lach Dennis
Plot 37 removed in the Parish of Rudheath
Access point relocated at Birches Lane
Point P2 relocated
Point P8 added

COUNTY OF CHESHIRE
BOROUGH OF CHESHIRE WEST & CHESTER

PLAN

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