HS2 Bill Select Committee

Petition No. 691

SAM PRICE

11 October 2016

Sam Price's petitions

Sam Price's concerns about HS2 summarised as:

House of Lords, Petition No. 691:

7	Euston portal, design of station, scale and timing of construction works and effect on WCML; quality of life, traffic, noise over 9 ½ years
10	Serious and unresolved issues of costs and timescales of HS2 cons
12	Alleged detrimental effect of operating on WCML with no evidence from HS2
14	Need for further development of scheme

House of Commons AP3, Petition No. 84:

10	Incomplete redevelopment of station
11	Longer timescale of construction
12	The number of construction lorries – 75% by rail
14	Questions whether phase approach to HS2 stations at Euston is legal with Phase 2 not approved
15	Property demolition and Hampstead Road Bridge

Petitioner remains unconvinced by responses so far from HS2 that the cost, the disruption and the long timescale is necessary to deliver the outcome proposed in the Bill.

The Petitioner's concerns

- I will be personally disrupted by construction traffic, particularly removal of huge amounts of spoil and concreting work from the HS2 design of the station and approaches.
- I am therefore interested in a scheme that reduces these volumes to a minimum; i.e. a station scheme but one within the Bill limits
- Hence my support for a different and better station scheme, part of the Euston Express project) within the Bill limits so not requiring an Additional Provision.
- For me as an engineer, taxpayer and resident, I support E Ex because it involves significantly lower costs, less disruption with a shorter timescale, and is therefore more deliverable.

The Background to the Euston Express proposition

- AP3 is the 5th attempt to provide a railway solution for rebuilding Euston.
- HS2 proposition is only for HS2. Does nothing for WCML where passenger volumes and growth are expected to be higher than HS2.
- E Ex seeks a railway solution to absorb better the pressures and risks of all lines, achieving far less adverse impact than HS2 in the locality in a shorter timescale, and at less cost.
- Creates one integrated station for both WCML and HS2 trains and passengers. It all needs doing as one project.

Euston station in Wikipedia

- *Euston's 1960s style of architecture has been described as "hideous", "a dingy, grey, horizontal nothingness" and a reflection of "the tawdry glamour of its time", entirely lacking in "the sense of occasion, of adventure, that the great Victorian termini gave to the traveller".*
- *Writing in The Times, Richard Morrison stated that "even by the bleak standards of Sixties architecture, Euston is one of the nastiest concrete boxes in London: devoid of any decorative merit; seemingly concocted to induce maximum angst among passengers; and a blight on surrounding streets."*

Euston Express project

- HS2 tunnel from Old Oak Common shortened by 2/3 and diverted to join West Coast Main line near Queens Park station. Track rationalisation there.
- Use 2 of the 6 existing WCML approaches for HS2 trains, with 4 remaining for WCML ones.
- Use Euston station tracks and platforms, to create 23 platforms; 11 for HS2, 12 for WCML
- Extend footprint of some or all tracks south towards Euston Road.
- HS2 trains on western platforms, WCML centre and east.
- New deck over platforms for passenger and train servicing facilities, and new passenger underpasses to underground lines and Crossrail 2.

Principles

- All HS2 trains built to W6 gauge to operate beyond ends of HS2 lines.
- No need for larger UIC GC gauge trains just for Birmingham service in Phase 1 and Manchester service in Phase 2.
- Track, signalling, stations etc. south of Queens Park HS2 portals to NR standards, and preferably designed, managed and operated by NR to create an integrated station for both HS2 and WCML trains.
- Make passive provision at OOC for future connection to HS1 at GC Gauge.

The debate about train sizes

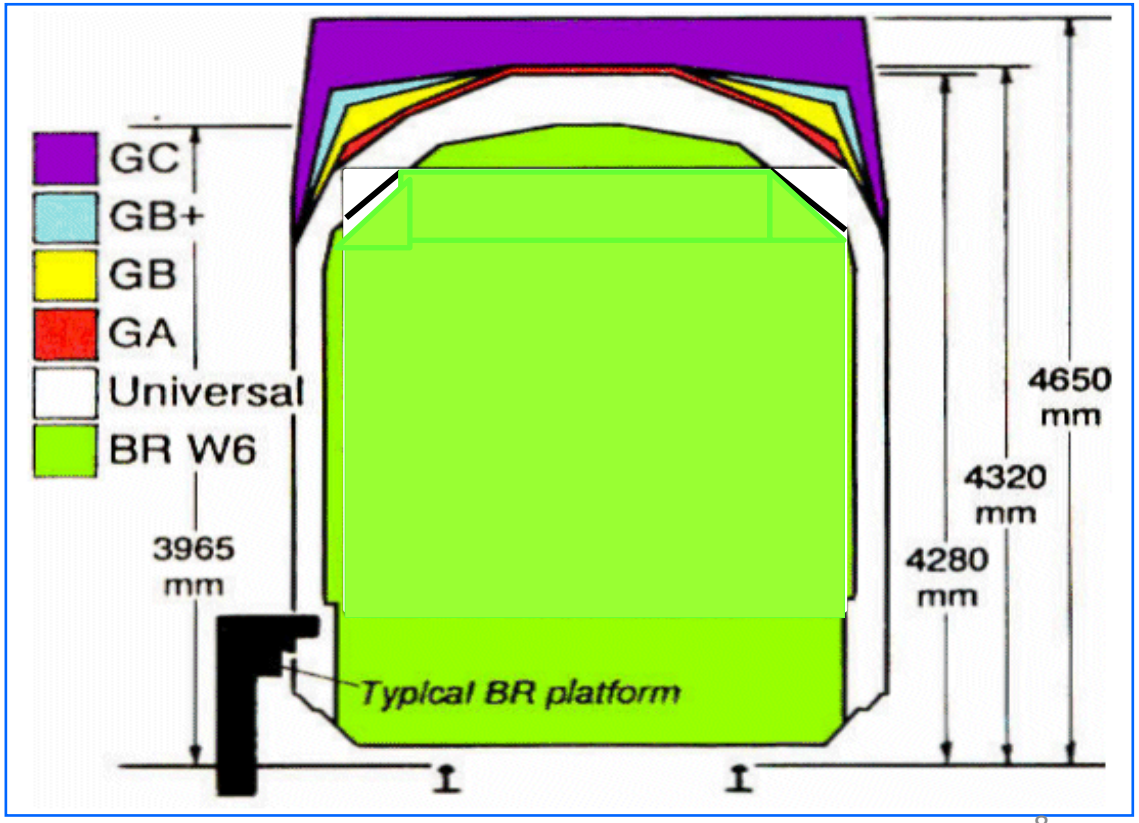
- HS2 propose 16 ‘European gauge’ (fat – GC gauge) train sets for Phase 1 Birmingham service and 45 which are ‘Classic Compatible’ (thin – W6 gauge) that will operate beyond the ends of HS2 to Glasgow, Manchester, Leeds, York, Newcastle etc.

E Ex provides for high speed access to Euston using Classic compatible trains W6.

European legislation requires all new lines to be built to GC gauge, but classic lines exempt.

There is no requirement to Run GC gauge trains on GC gauge tracks.

Cost saving on having one type of train £50 to £100m



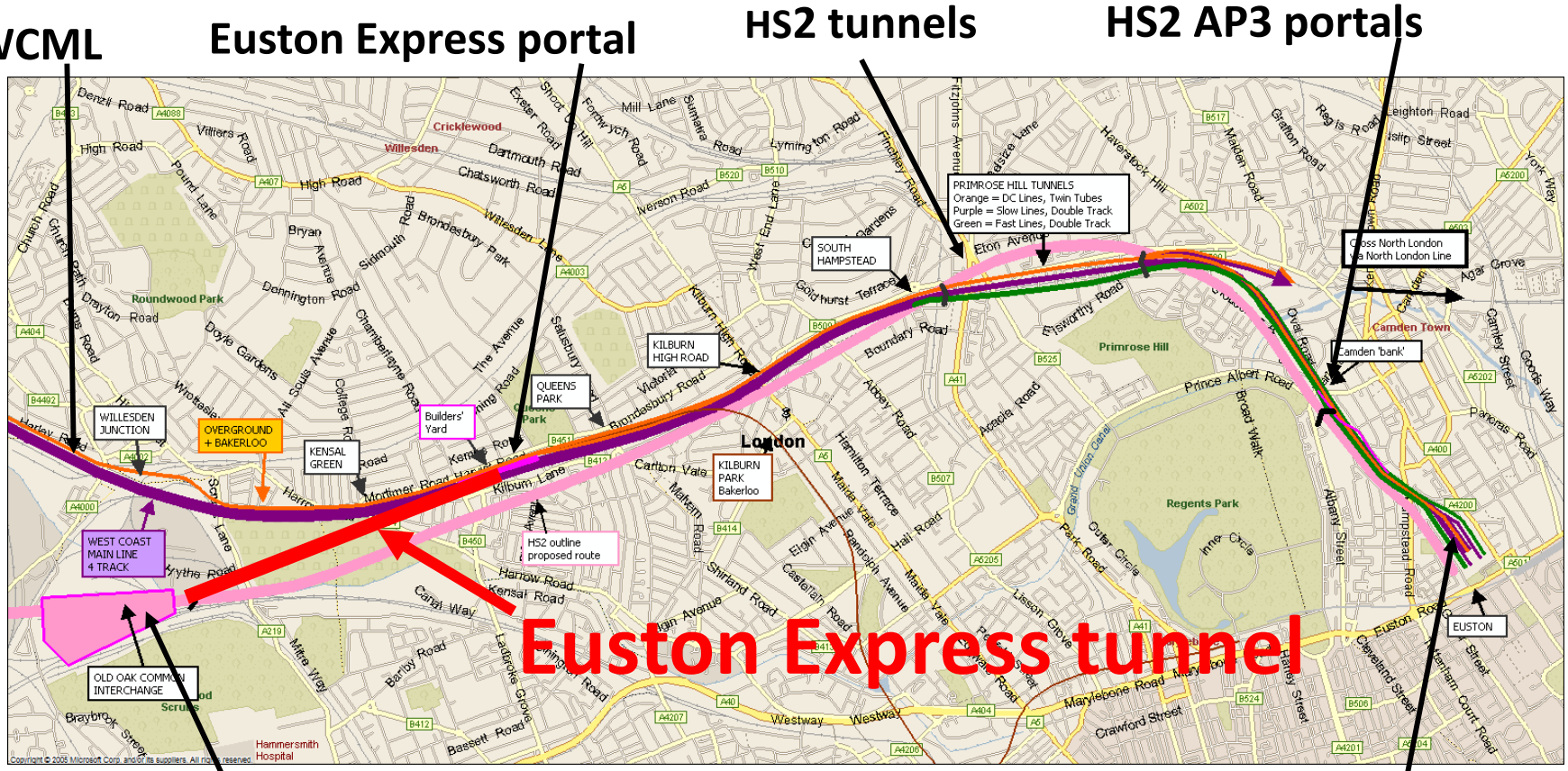
Eurostar – classic compatible

Has HS2 decided this already?

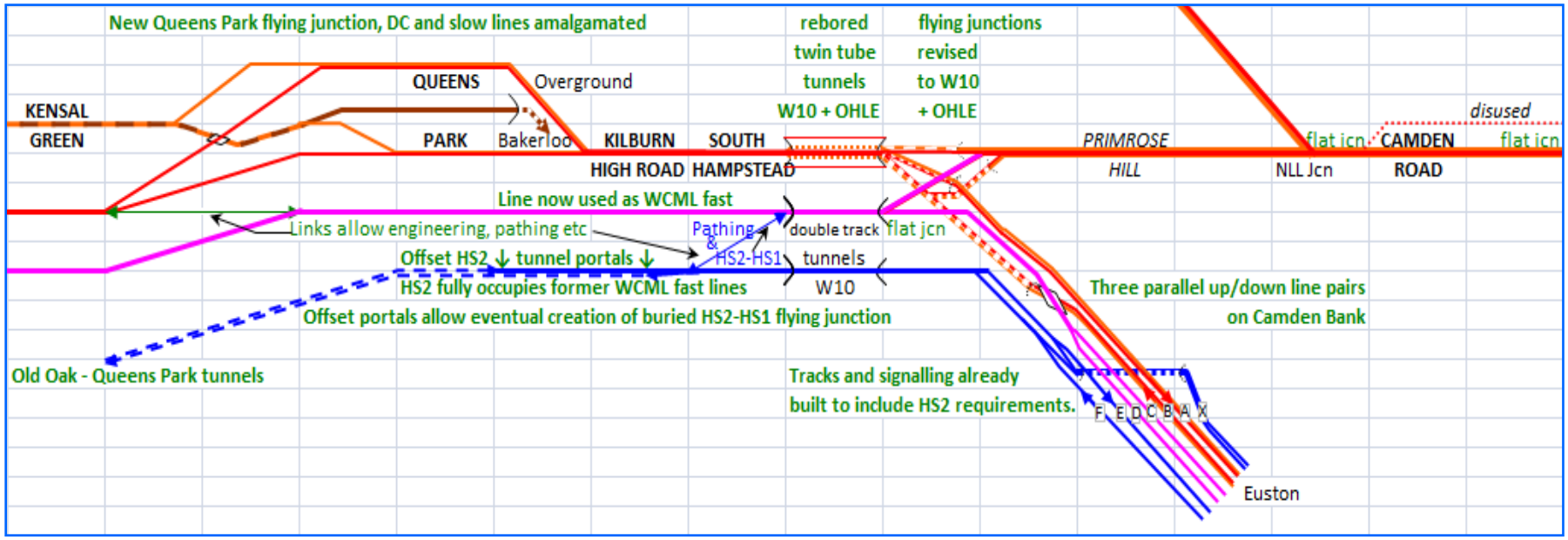
- HS2 Rolling Stock Procurement Officer notice.

- ‘The Phase 1 Rolling Stock procurement is anticipated to be a single procurement of a single fleet of classic compatible trains with a capital value of around £2bn.’
- ▪ Job Reference: 25624
- ▪ Location: Birmingham
- ▪ Skillset: Procurement & Supply Chain/Purchasing
- ▪ Salary: Competitive
- ▪ Closing Date: 05 October 2016
- http://careers.hs2.org.uk/jobs/rolling-stock-procurement-officer/

Euston Express tunnel route

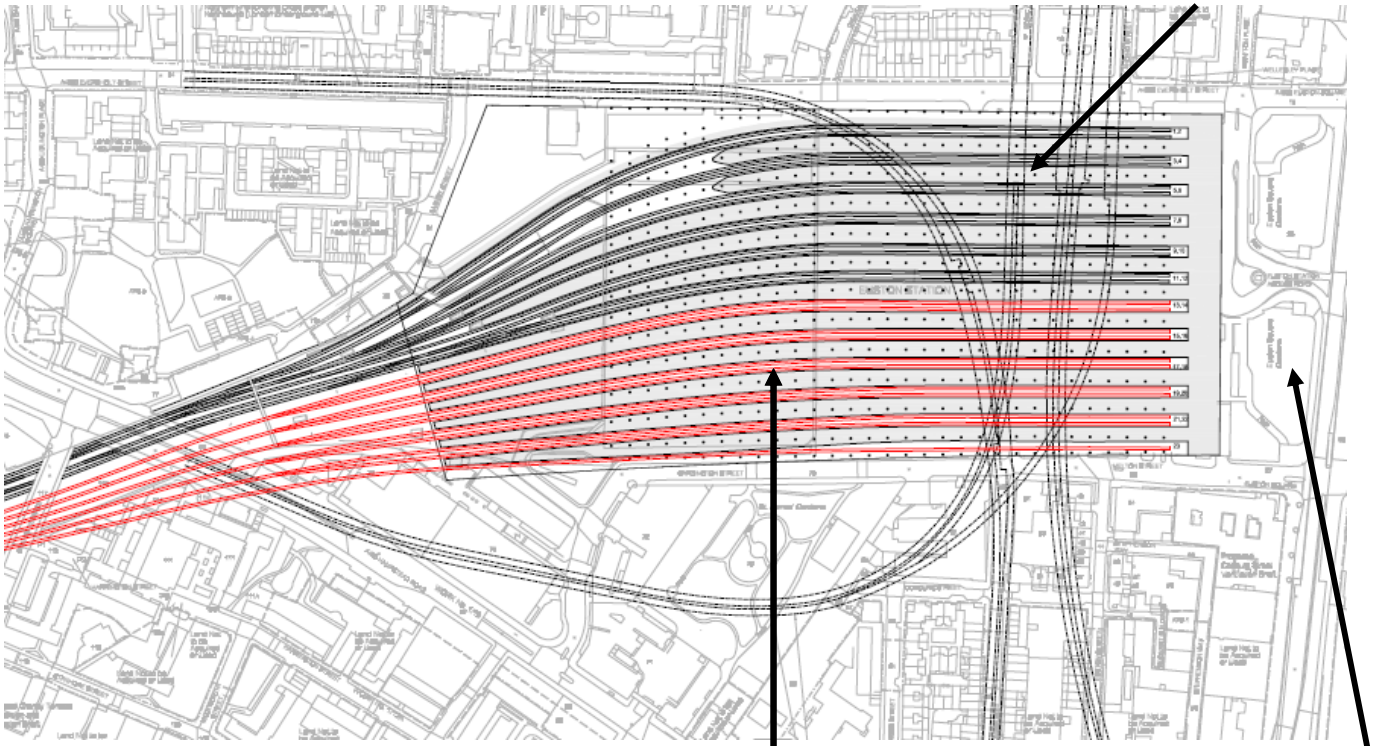


Track layout Queens Park to Euston approaches



A combined Euston station plan is much better for passengers and residents

12 WCML tracks and platforms



All platforms extended to provide for 400m trains for HS2

Office buildings demolished

11 HS2 tracks and platforms in red

Euston Gardens

Comparative footprint of stations

Existing Euston Station outline

HS2 AP3 Station outline

E Ex station outline within existing widths

Euston station platforms 2 to 3
Space for 2 more.

Euston station platforms 16-18.
Space for three more,
making 23 platforms in total.

Euston Express – station specification

•	Platforms	HS2	WCML
•	Length	415m	up to 415m
•	Island platform widths	10.9m	10.9m
•	Use existing ones except at East and West side.		
•	Number of platforms – now	-	18
	HS2 open phase 1	6	11 or 13 if stages of construction increased to 5
	Phase 2	11	12
•	(of which one shared spare)		
•	Platform minimum radii in plan;		
	New	1000m	as existing

WCML growth in passengers numbers

E Ex can take the 18 trains per hour proposed by HS2 and WCML trains – intercity and commuter.

18tph and 400m trains with 1100 passenger per train = 20,000 passenger per hour each way!

Reality check - 2011 figures for total suburban and long distance passengers at Euston in busiest peak hour was 12,100.

So growth will be gradual. Growth of long distance commuting greater than for HS2 long distance services.

At HS2 opening in 2026, E Ex can accommodate forecast traffic, but the Underground at Euston will be full – Victoria line is already.

20 years on…

- Assuming forecast growth by HS2 (Phase 2 & 3) and NR (WCML) continues, by the 2040s neither Euston scheme can cope – even with Underground, Crossrail 2 and link to Euston Square.
- Other solutions must be found:
- Crossrail – WCML link to divert passengers away from Euston
- New connection HS2 to HS1, not only for international trains, but as another cross-London Crossrail/Thameslink service.
- That is the time to introduce fatter GC gauge trains as a second generation. They would not go into Euston but through the HS1 link with whatever new stations in London thought to be best.

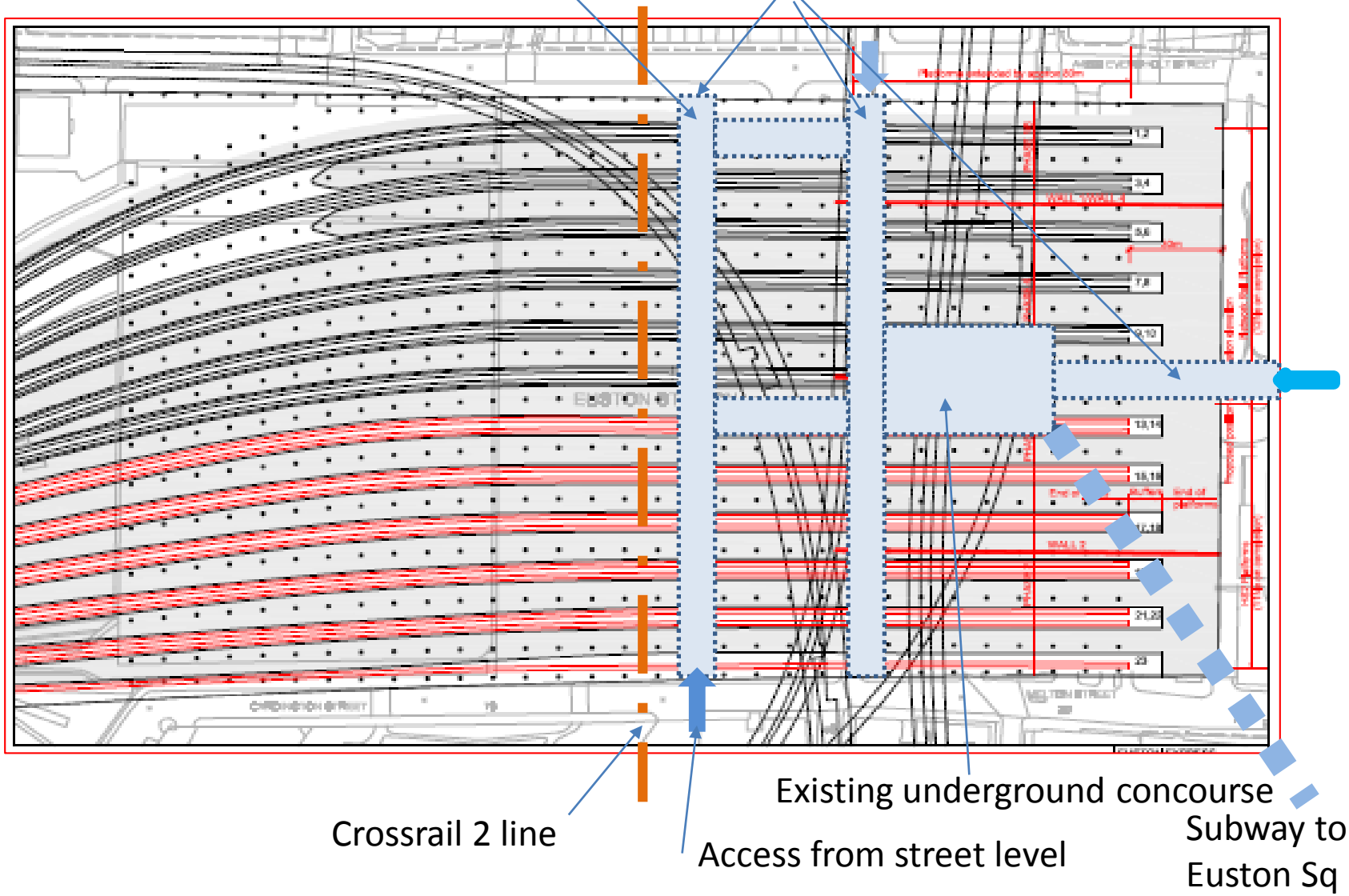
Pedestrian flows at Euston

- The following three slides illustrate diagrammatically the pedestrian flows at the three levels when work is complete:
- Underground
- Platform/ground level
- Upper deck/concourse

Pedestrian flows under tracks

Subway connection to Crossrail 2 station

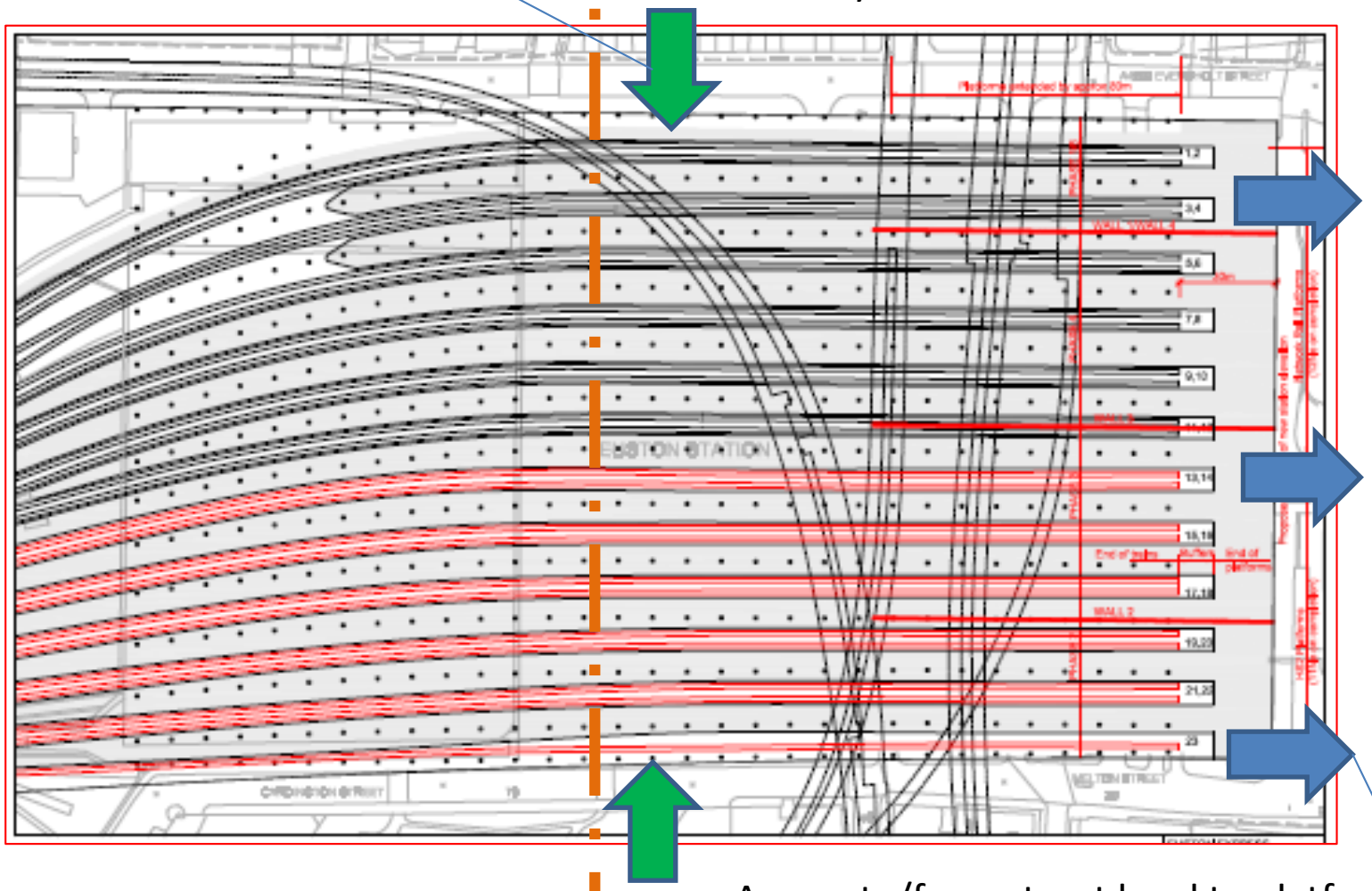
Subways under tracks and platforms
Connected to platforms by escalators and lifts



Pedestrian flows at platform/ground level

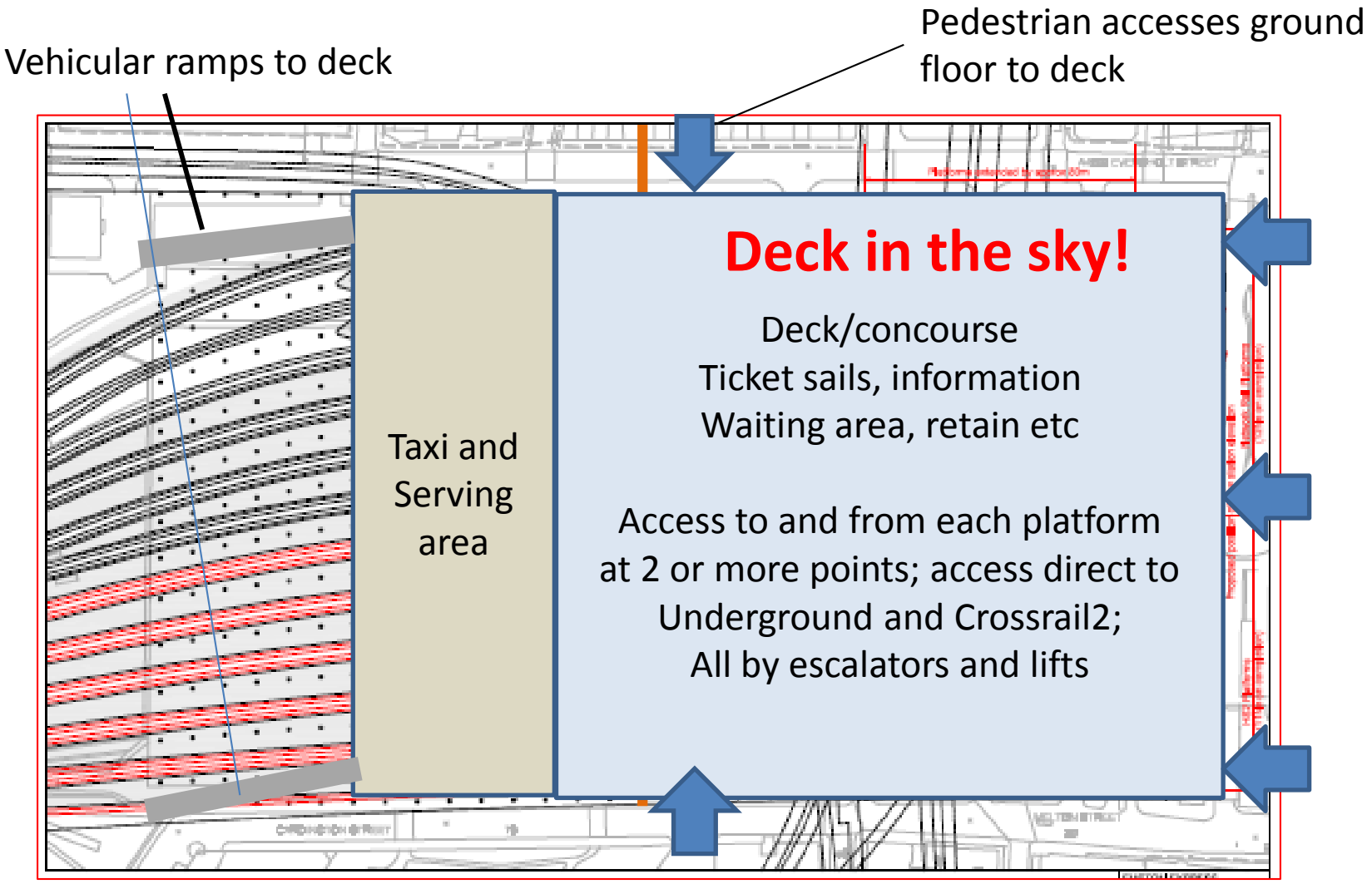
Access to/from street level
To deck and Underground/Crossrail 2

Access to/from each platform
at 2 or more points direct to
Underground and Crossrail2 and deck;
All by escalators and lifts



Access to/from street level to platforms.

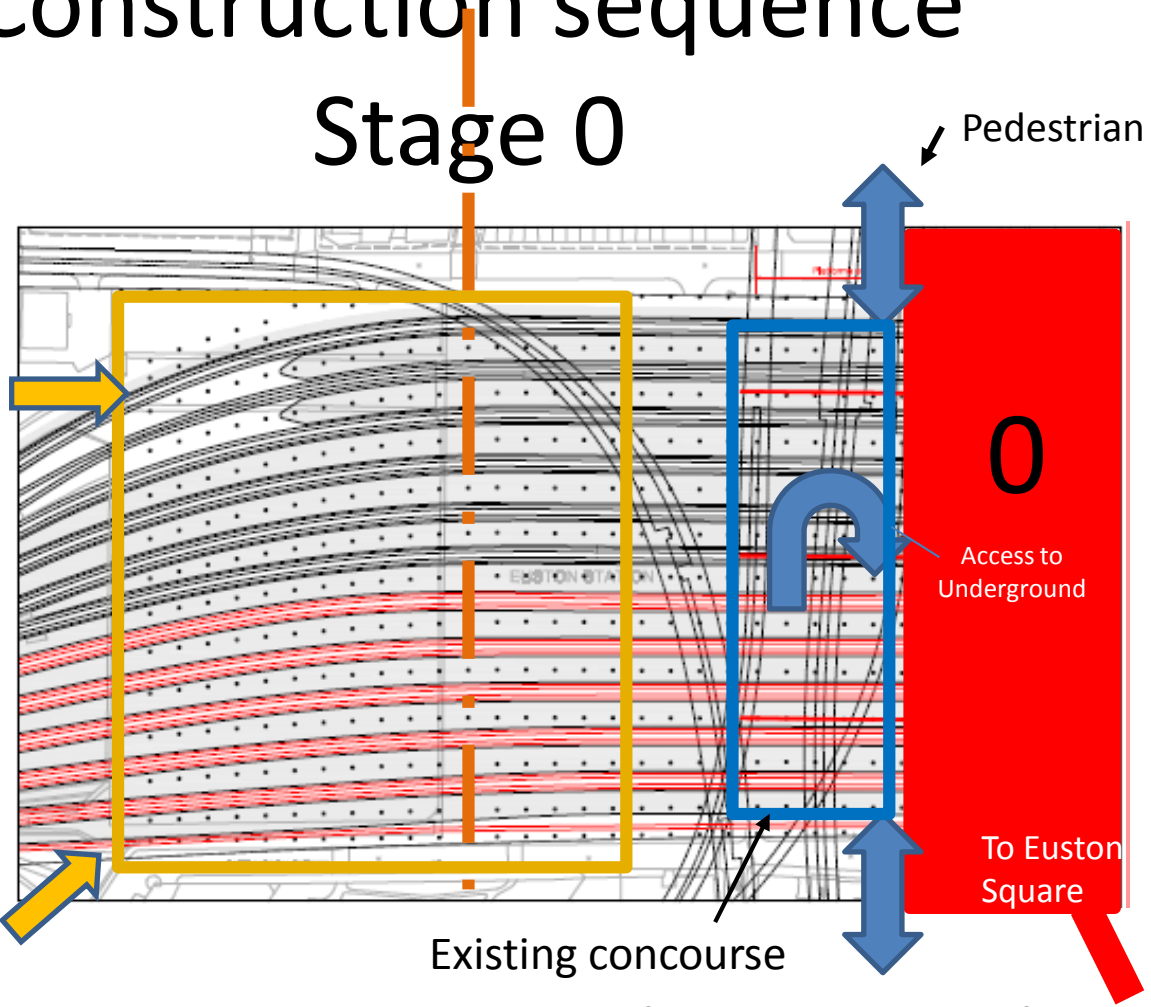
Pedestrian flows at deck level



Construction sequence

Stage 0

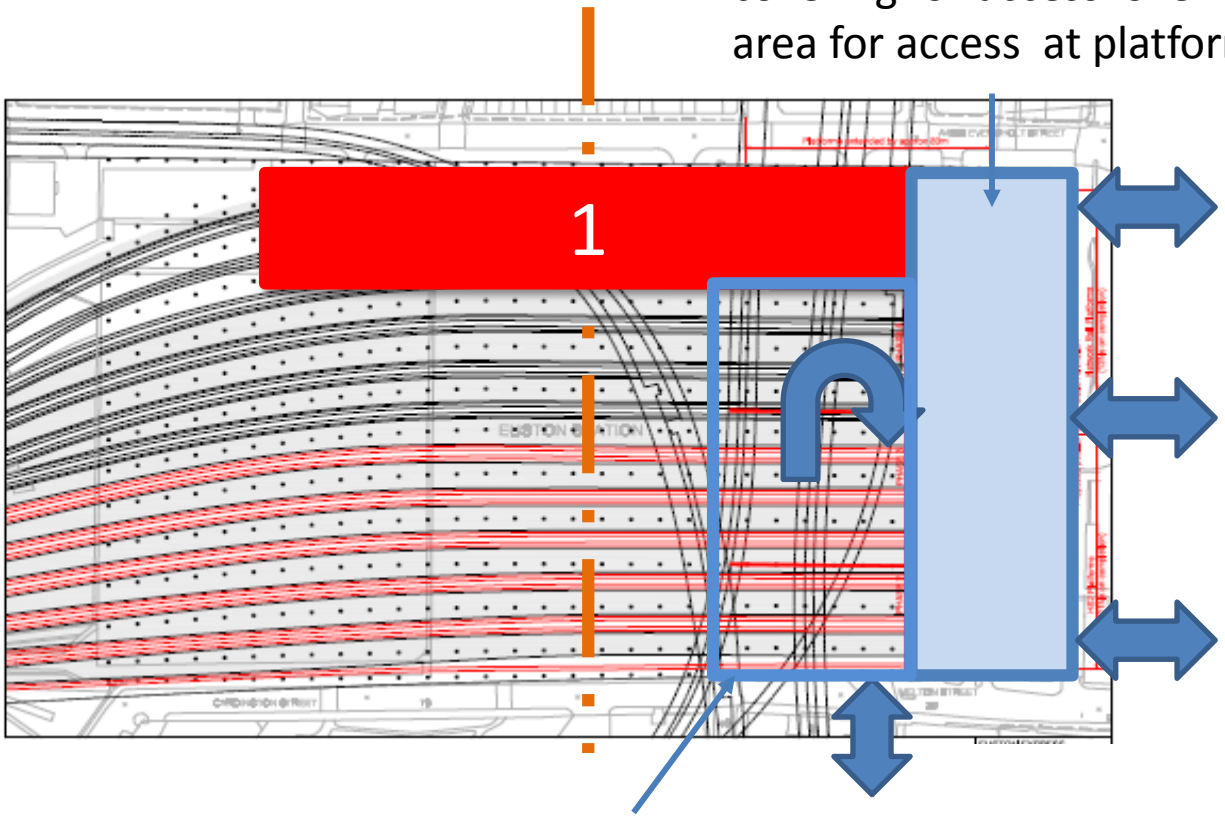
construction access to deck above for Phases 1 onwards



Work to include:
Demolition of offices and underground structures south of the station, working from East to West.
Construction of subways under platforms to Underground, Crossrail 2 and Euston Square, installation of new track and platform ends.
Construction of new deck over, with installation of temporary or permanent stairs/escalators.
Pedestrians to use deck or ends of platforms.

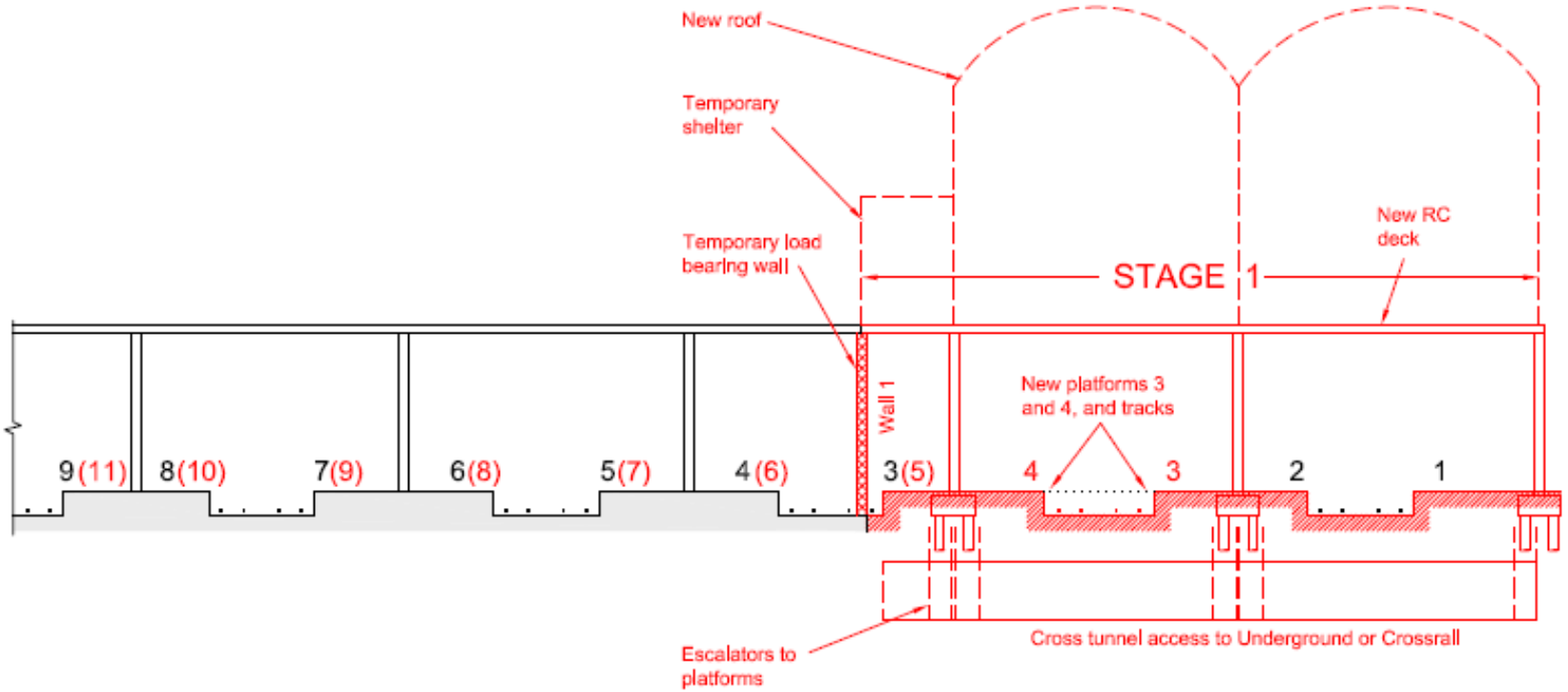
Stage 1 plan

Deck/concourse complete. Temporary covering for access over new track area for access at platform level



Existing concourse

Stage 1 section

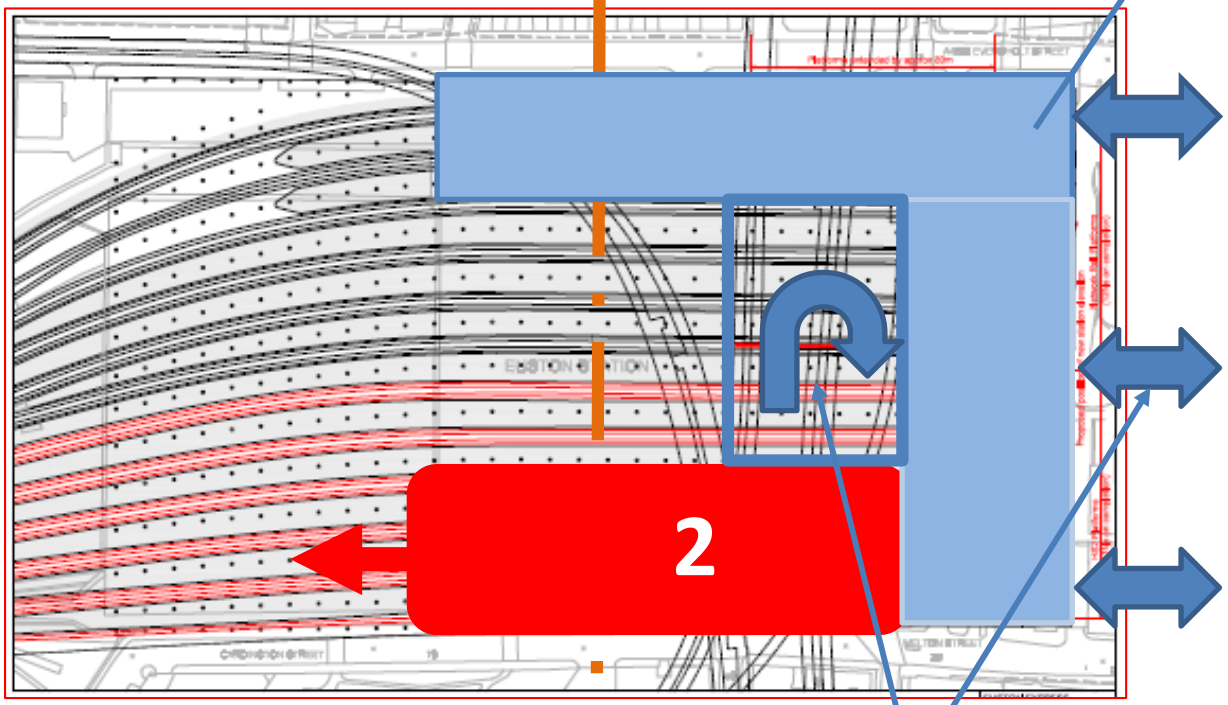


STAGE 1:

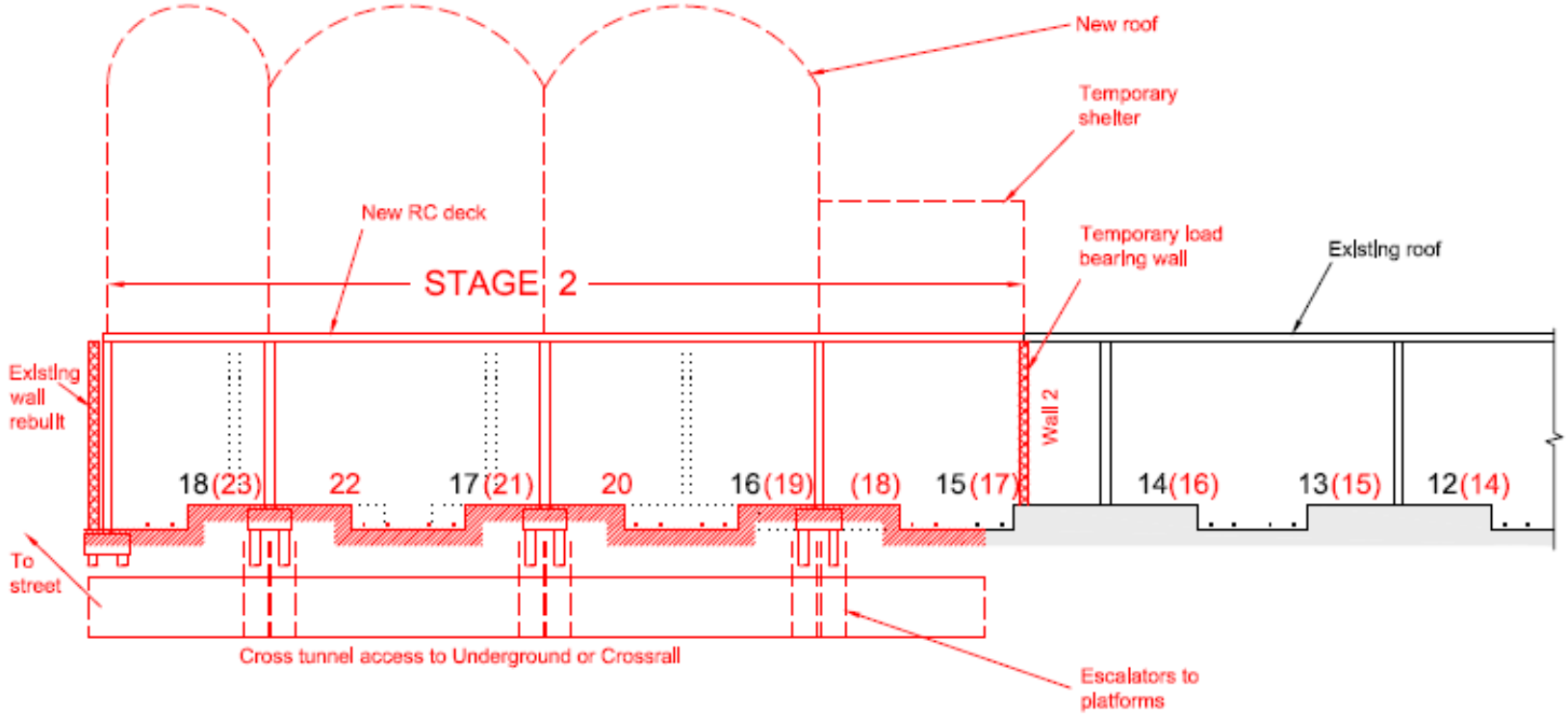
1. Give Contractor possession of Stage 1. Erect temporary load bearing Wall 1. This leaves NR with 15 platforms.
2. Piled foundations for 3 new lines of columns.
3. New concrete deck and roof over.
4. Put in new track and new platforms 3 and 4.
5. Take down temporary wall, leaving 20 platforms. Platforms are new full length.

Stage 2

Deck/concourse complete. temporary covering for access over new track area at platform level



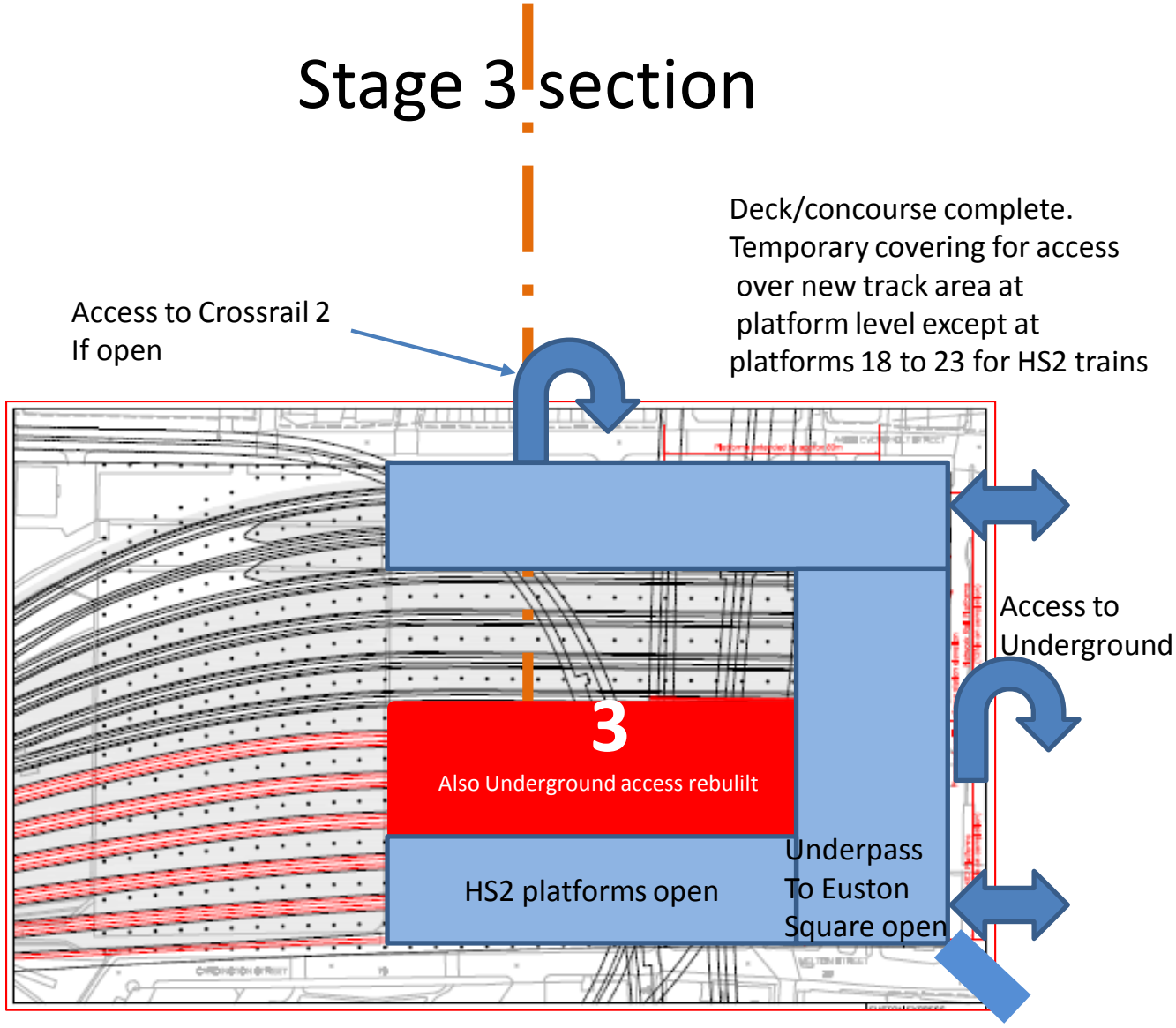
Access to Underground

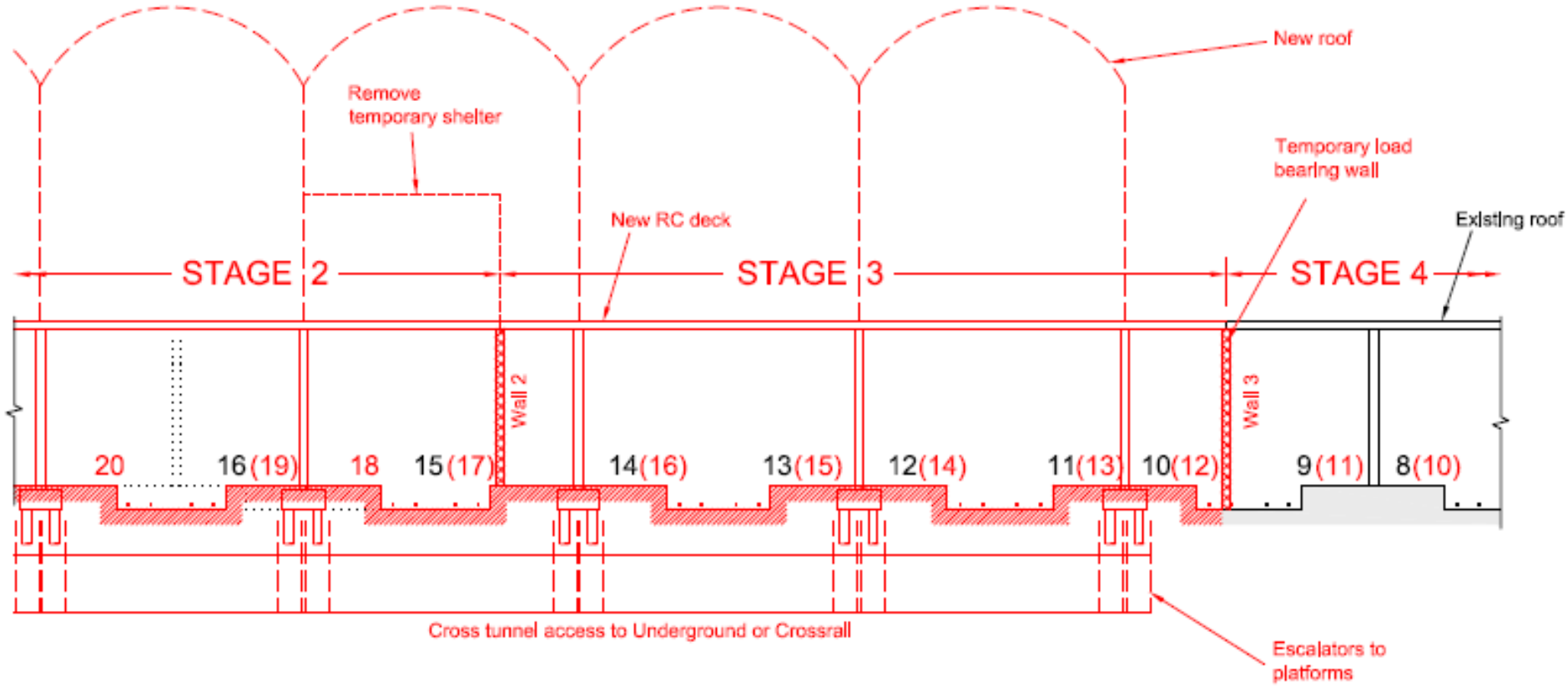


STAGE 2:

1. Give Contractor Stage 2, west side of station, temporarily leaving 16 platforms.
   Erect temporary load bearing Wall 2.
2. Piled foundations for 4 new lines of columns.
3. New concrete deck and roof over.
4. New tracks and platforms 18 to 23. All to new full length.
5. Leave Wall 2, give tracks 18 to 23 back to HS2.

Stage 3 section

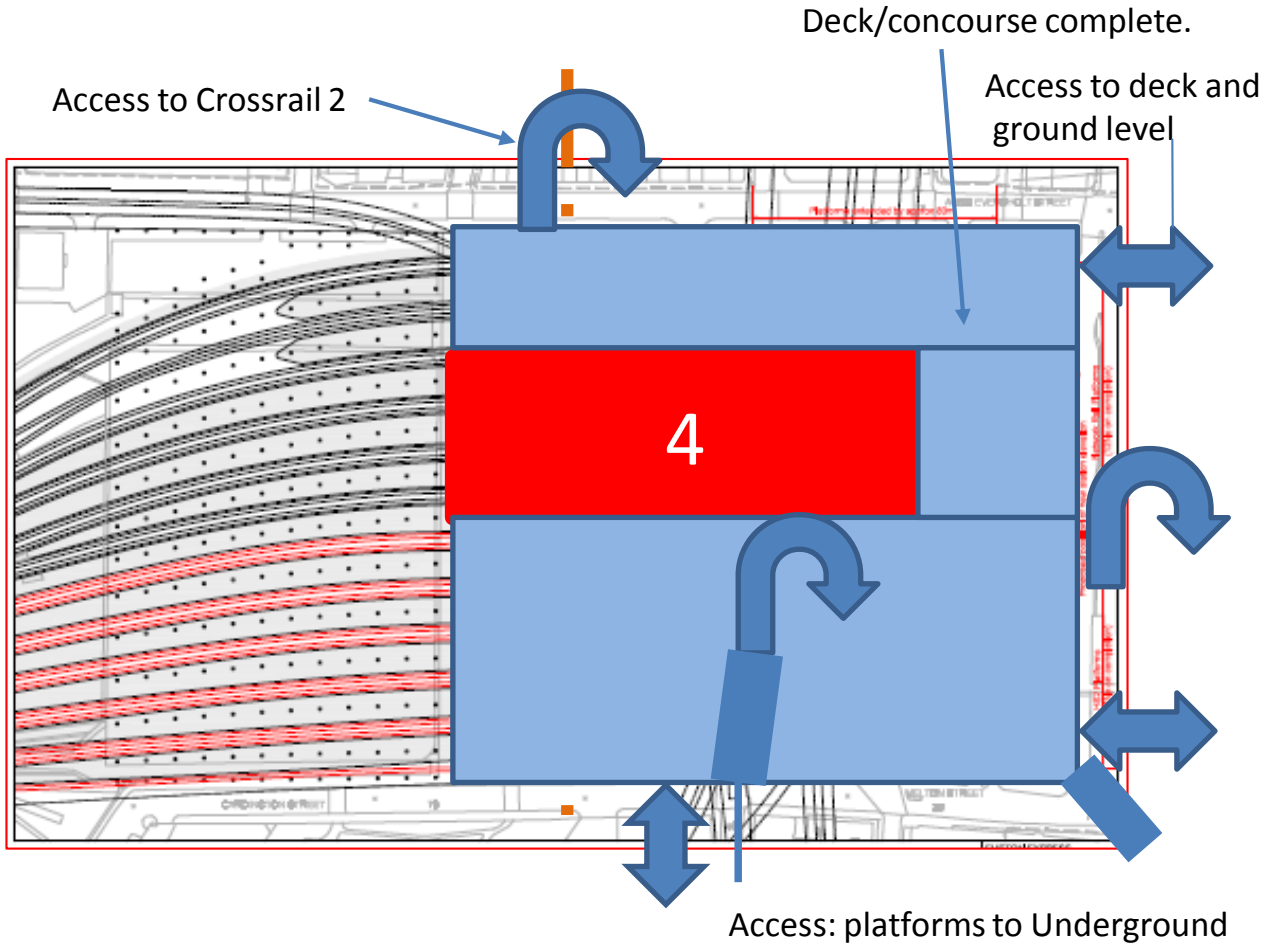




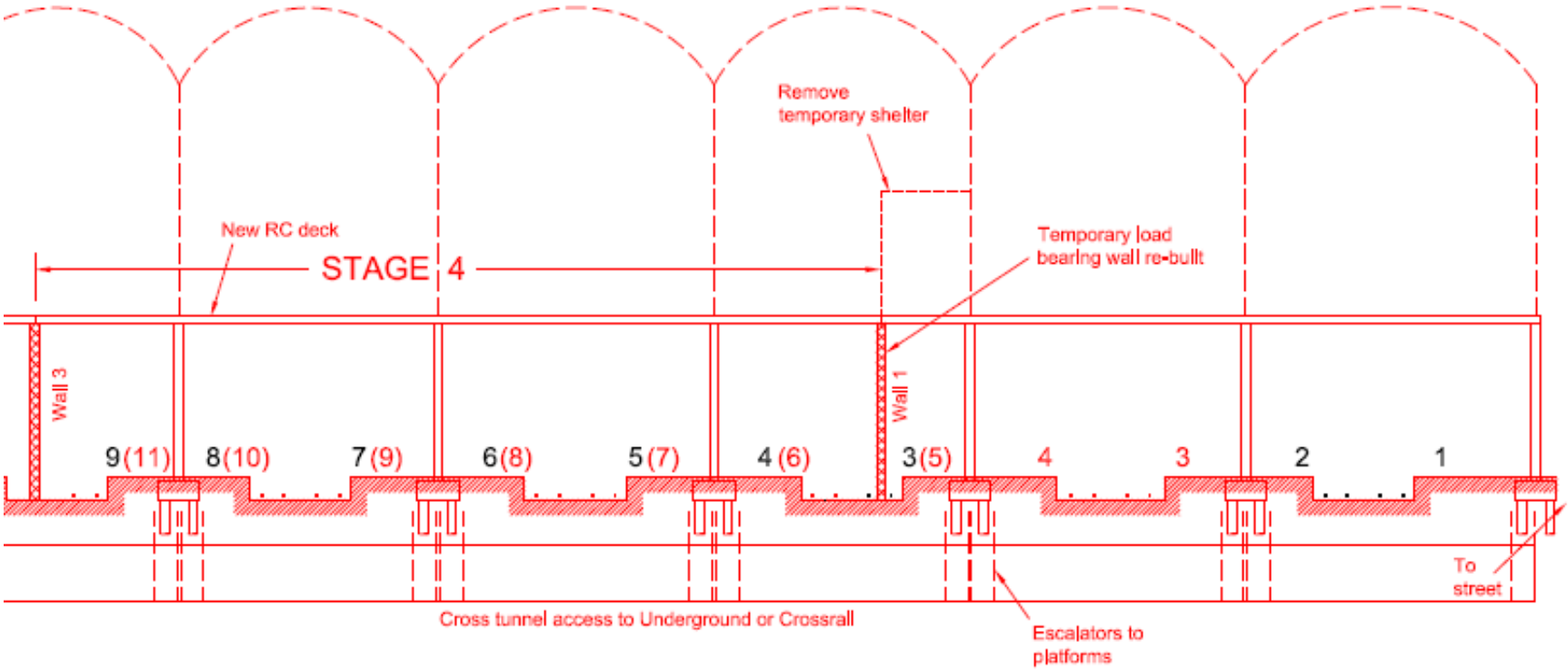
STAGE 3:

1. Give Contractor Stage 3.
2. Erect temporary load bearing Wall 3 leaving 17 platforms.
3. Piled foundations for 3 new lines of columns on the same lines as existing.
4. New concrete deck, extending from end of Stage 2 deck; roof over.
5. Extend tracks and platforms 11(13) to 14(16).
6. Take down Wall 2 so that track 17 can be accessed, leaving 22 platforms.

Stage 4


Deck/concourse complete.
Access to Crossrail 2
Access to deck and ground level
4
Access: platforms to Underground

Stage 4 section



STAGE 4:

1. Give Contractor Stage 4.
   Re-build temporary load bearing Wall 1 leaving 16 platforms.
2. Piled foundations for 3 new lines of columns on the same lines as existing.
3. New concrete deck.
4. Take down Wall 3 leaving 23 platforms.

E Ex HS2 time savings

- For the HS2 station, the time to walk the length of a 400m train at 80m/minute (TfL stats) is 5 minutes to reach the end of the train and the Underground entrance.

- E Ex platforms are located further south so that the centre of the trains is close to the Underground entrance. This reduces the maximum walk to 2.5 minutes, more than compensating for the longer train journey of 1 minute 13 seconds.

- **Thus HS2 journey time losses are more than compensated for by shorter walking to interchange at Euston.**

Platform availability by stage

	For HS2	For WCML
During construction of:		
Stage 0	0	18
Stage 1	0	15
Stage 2	0	16
Stage 3	6	11
Stage 4	6	12
When complete	11	12

Note, at stages 3 and 4, WCML could increased to 13 by building 3 and 4 in three stages.

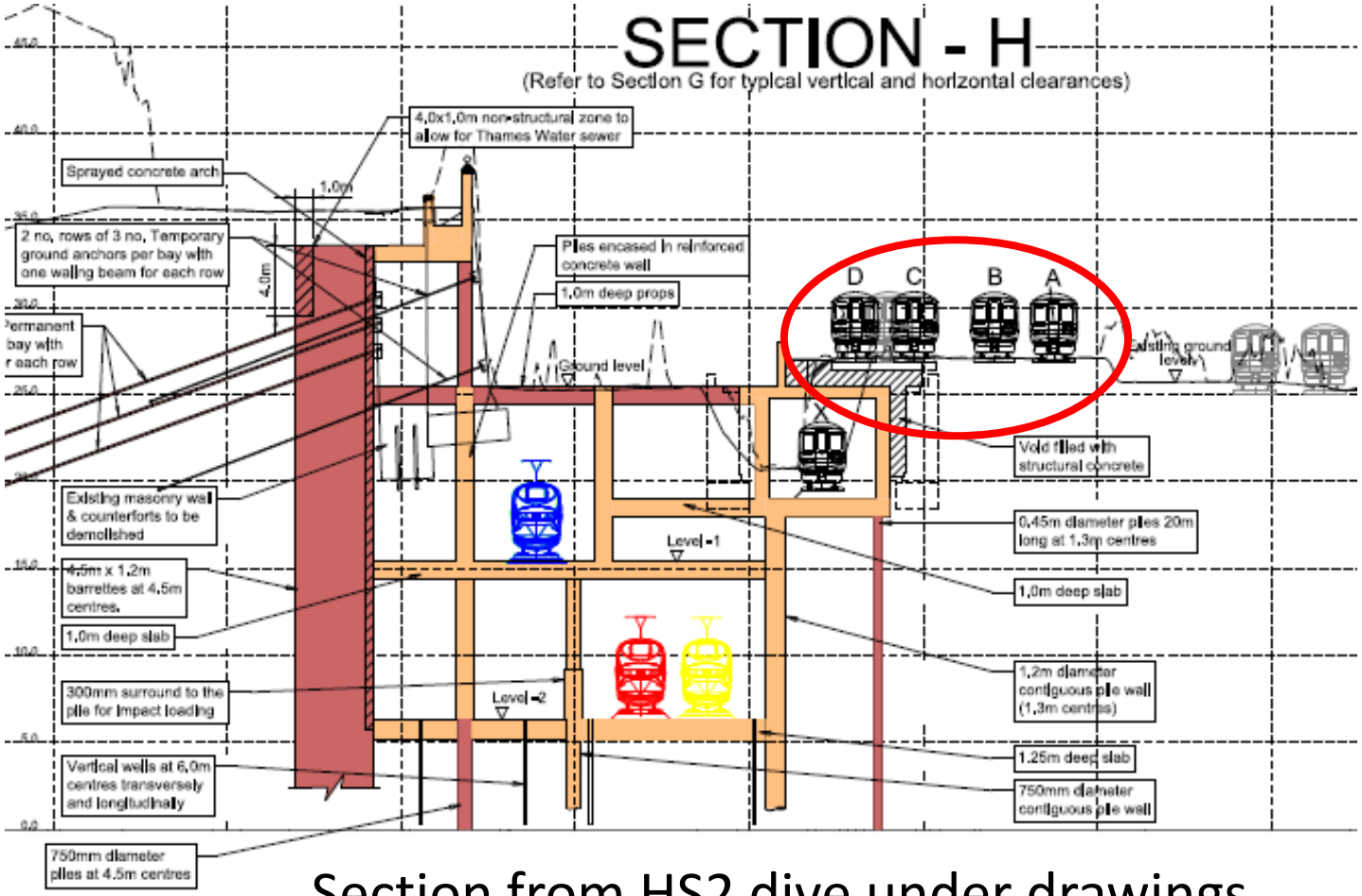
Euston Express construction time

- Our estimate of construction time of the 5 Stages is:
-
  Permissions and detailed design 2 years
- Stage 0 2 years
- Stage 1 1.5 years
- Stage 2 1.5 years
- Stage 3 1.5 years
- Stage 4 1.5 years
-
- Stage 2 must be complete by the time HS2 services stage, currently planned for 2026.
- This is achievable if permissions and detailed design start in 2019.
- Then station complete by 2029

HS2's disruption of work to railway

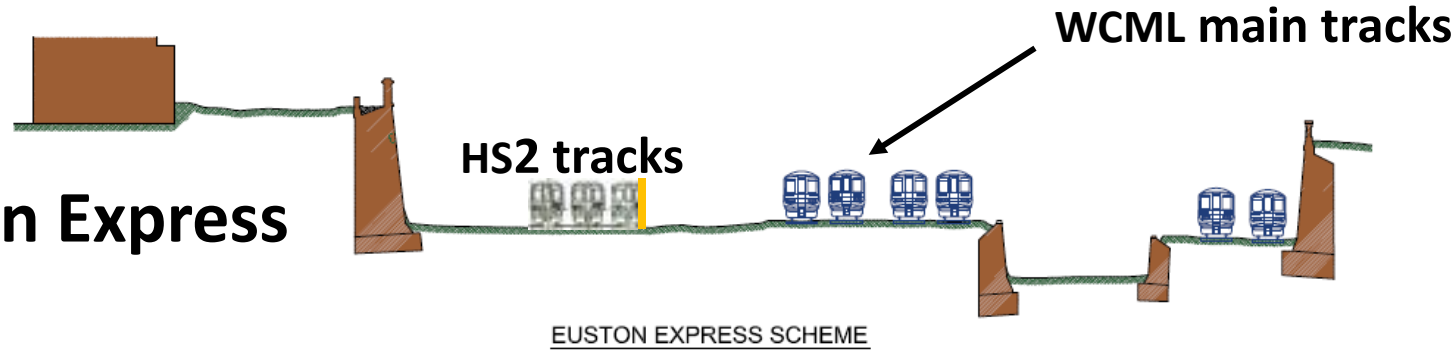
- HS2 AP3 will involve massive disruption
- Chaos, disruption and inconvenience of 750 lorries a day for 15-20 years
- WCML down to 2 tracks for many months due to construction at Park Village East.
- Noise for 15-20 years, environmental loss, business losses, quality of life, house prices flat line – just for half the station.
- This would be building works for half a working life or an entire childhood in Euston
- **Euston Express – 8 years – and the whole station**

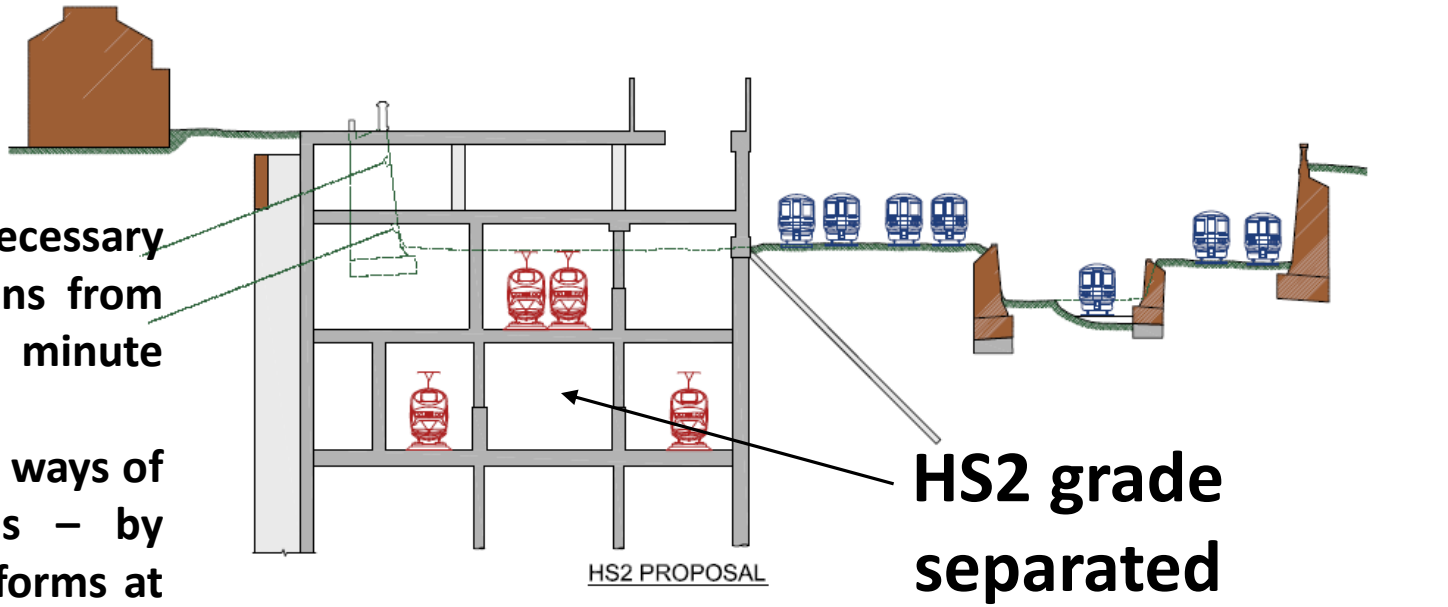
Keeping WCML trains operating during AP3 construction could be tricky!



Section from HS2 dive under drawings for Park Village East

Compare cross-sections at Park Village East.





Is this really necessary just in case trains from Scotland are 1 minute late?

There are better ways of regulating trains – by using the 6 platforms at OOC where they all stop.

HS2 grade separated tracks

E Ex construction works compared to HS2 AP3

HS2 - demolition of properties west of Euston and approaches – 1500 truck journeys a day out daily. E Ex little demolition

HS2 - Construction time 19 years, E Ex 9 years

HS2 doesn't treat Euston station HS2 and WCML as one with deck over and Underground access under all platforms E Ex Does

Consultation

- Extensive consultation with Network Rail over operation of railway, both during construction and in the longer term. This covers works on the approaches, station operation, pedestrian movements and train servicing; and for both HS2 and WCML services.
- Discussions with TfL on access to Underground, Crossrail 2 and other suburban services.
- Discussions with DfT and HS2.
- Discussions with passenger operators, as well as bidders for next franchise.

Alternative options to AP3

- Euston Express, with tunnel from Old Oak Common to join WCML near Queens Park
- Use AP3 tunnel but with portal further North to allow space for extra tracks for the ‘throat’. Add two tracks in tunnel under Parkway, effectively connecting two sidings. Connect into same station layout as E Ex within the Euston station width.

- Both should be evaluated by HS2 and NR, whose property it runs on, in a ‘Can Do’ attitude!

Costs

Petitioner remains very concerned about the costs of the AP3 scheme.

Specification is unnecessarily high; assertions by HS2 during the House of Commons hearings and later that E Ex more expensive still not resolved.

Petitioner therefore asked eminent QS Michael Byng to cost the two options on a like for like basis.

Michael Byng is author of the standard book on measurement of railways works commissioned by Network Rail.

Cost summaries

- Comparing HS2 AP3 to E Ex from Old Oak Common portal to and including Euston station, using 2015 4th Quarter costings on a like for like basis:

	HS2 AP3	E Ex	Saving
Overall cost	**£ 5,647m**	**£3,797m**	**£1,850m**
What do you get for this?			
New station for HS2	**Yes**	**Yes**	
New station for WCML	**No**	**Yes**	

- If it were possible to provide E Ex for just the HS2 part, the E Ex cost would be say 50% - £1,900m.
- **This means that, for HS2 related work, the E Ex solution is £3,740m cheaper.**

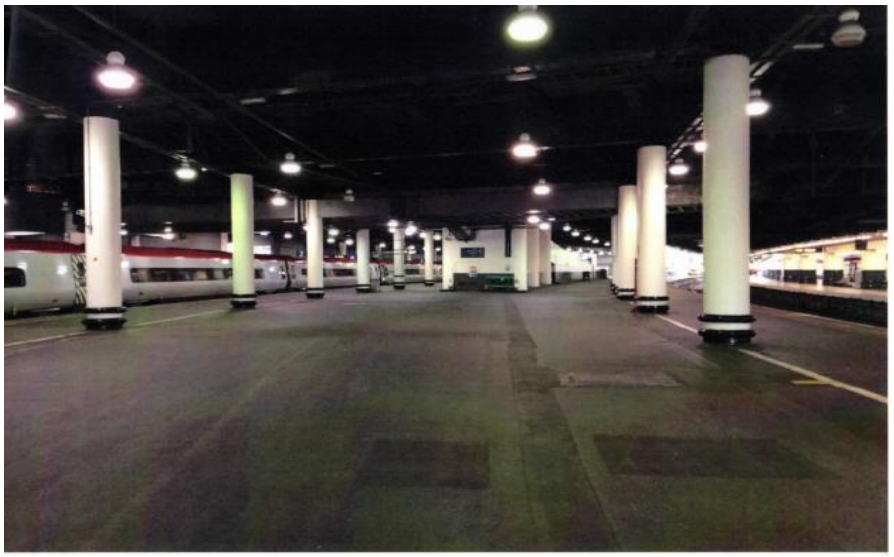
All determinations of cost have been prepared using measurement and valuation process set out in the "Rail Method of Measurement" (RMM) Volume 1 – Cost Planning, published by Network Rail in July 2014. Based on 4th Quarter 2015.

Conclusion – the benefits of an integrated station

- Less land: Only needs existing Euston station footprint within Bill area except to the South and Hampstead Road Bridge
- Costs less: Saves Government £1,850m whilst giving commuters a new WCML station as well.
- Less disruption to WCML services
- Shorter construction time – 10 years compared with 19 for AP3, much less impact on residents.
- Creates an integrated whole station, with level deck above to give permeability across the area
- Still allows for growth in both HS2 and WCML traffic, for commuters and HS2 passengers

HS2 gives you…

Half the station, with construction over 17 years



Nothing ever for WCML passengers except an adjacent building site for 17 years

An integrated station gives you…

A new station for all, HS2 and WCML passengers, in 10 years!

A deck – in the sky?

- Having one integrated whole is our idea. Making the WCML part at the same level as the AP3 one would be ruinously expensive and disruptive.

- We can give them one level deck across the whole thing developed as an integrated whole but with steps, escalators, lifts etc all around.

E Ex permissions and programme

- An additional provision is not the only way that Euston Express can be implemented.
- With suitable undertakings from HS2 and ministers, the Bill could proceed and additional powers for E Ex obtained through non parliamentary planning processes - (TWAO as permitted in Cl 52 of the HS2 Bill)
- These can be expected to take 3-4 years including preparation time.
- Construction of all HS2 works can be achieved within the HS2 Phase 1 programme.
- The Euston station works would most easily be achieved in five phases, within a total time of 9 years, compared with 17 years for HS2.

Can this be delivered?

- Without an AP and allowing the Bill to pass, it is still possible.
- Changes that cannot be done under permitted development rights can be made if ministers want it by Transport and Works Act Orders. Allow 3 years for this process.
- All the needs for permissions, including environmental studies, from Old Oak Common to and including Euston, using either route option, should be explored urgently. In the mean time, ministers should instruct HS2 to put on hold any potentially affected works, even if the Bill is passed.

Sam Price asks to the House of Lords Select Committee on HS2 on 11 October 2016

- If the Committee is not satisfied that the Bill scheme is the best way of meeting the concerns of the petitioner, but still wishes to see the Bill go forward, then he suggests that the Committee may wish to:
  - express concerns about the Bill scheme for the Euston area;
  - whether it is the optimum solution for the parts needed for HS2 in terms of environmental effects on the petitioner, the length of time of construction and the costs;
  - and the option of including the whole of the station into one scheme and, if not, whether it will investigate and report on alternatives in a timely manner to allow these to be adopted.
- This could include seeking any additional permissions for works using the Transport and Works Order procedure.

Further information

- Sam Price, petitioners Sam Price, structural engineer, samprice@tengc.net.
- Jonathan Roberts, Railways expert, jr@jrc.org.uk
- Michael Byng, QS, michael.byng@lichaelbyng.com
- Lord Berkeley, House of Lords, berkeleyafg@parliament.uk; 07710431542