### **EXHIBIT LIST**

Reference No: HOL/10024

Petitioner: Buckinghamshire Standard Pack

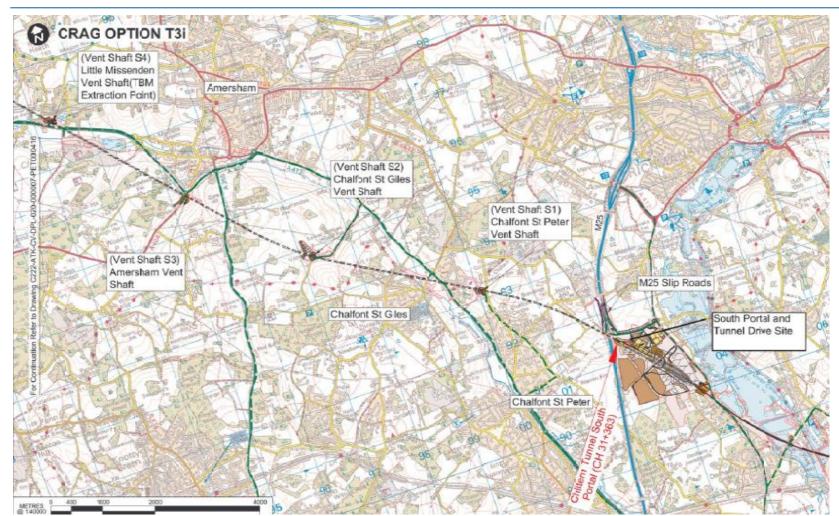
Published to Collaboration Area: Tuesday 18-Oct-2016

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4	P3750_Stoke Mandeville Maintenance Loop	25 - 28
5	P3751_Construction Compounds_CFA 7 - 13	29 - 46

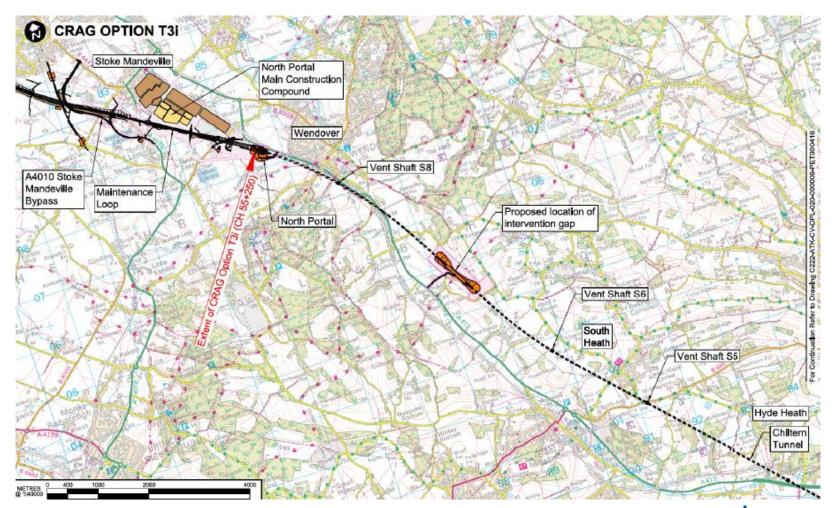


## Petitioner request - CRAG tunnel proposal (drawing 1 of 2)





## Petitioner request - CRAG tunnel proposal (drawing 2 of 2)





### Petitioner request - CRAG tunnel proposal

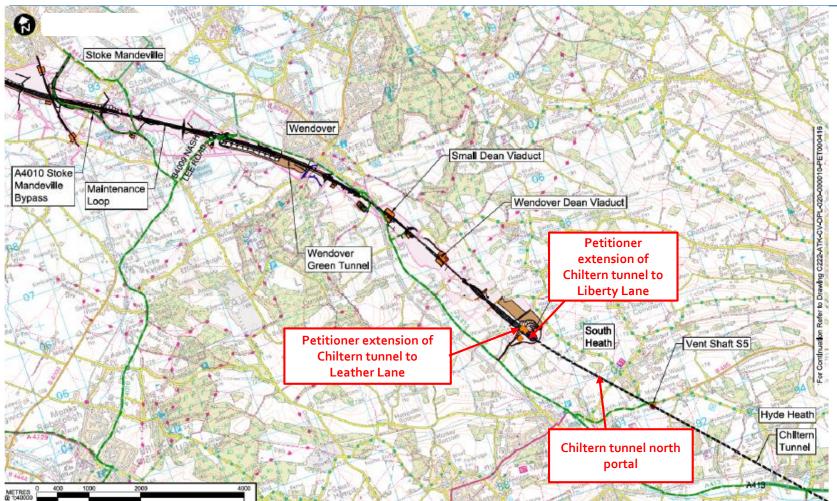
To extend the Chiltern tunnel from its current Proposed Scheme portal at South Heath to north of Wendover would require:

- permanent new road accesses to and land for new ventilation shafts that would be required;
- an intervention gap on the tunnel alignment in the vicinity of Wendover Dean (consisting of a large open box structure, or retained cutting) to provide appropriate ventilation and vehicular access in accordance with design requirements for long tunnels. Additional land would be required due to the size of this structure, for associated landscape screening and for a permanent new access road for maintenance and emergency services;
- additional new permanent land take at the Wendover north portal to accommodate the wider and deeper cutting that would be required and the road access required to track level at the portal; and
- significant new temporary land take near Stoke Mandeville to provide for the large construction compound that would be required to support tunnel construction and handling of excavated material.

These works would require substantial further land to be brought within Bill limits for which an Additional Provision would be required. There would also be new or different significant environmental impacts arising from the different land take required, revised permanent works and during construction, from revised materials movements.

P3747 (3)

# Petitioner request – an extended Chiltern tunnel to Leather Lane or Liberty Lane





# Petitioner request – an extended Chiltern tunnel to Leather Lane or Liberty Lane

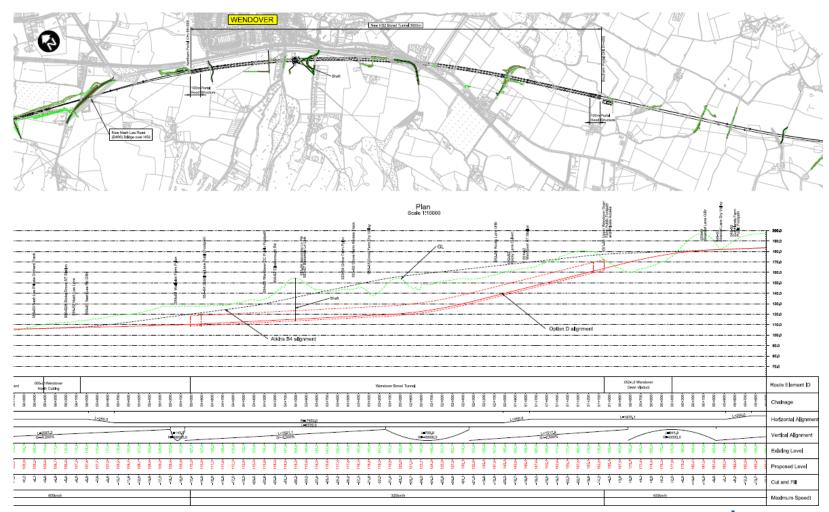
Proposals for a further extension of the Proposed Scheme Chiltern tunnel, by up to 1.5 km to either Leather Lane or Liberty Lane, would require additional new land to be acquired in order to provide for:

- a new permanent access road from the A<sub>413</sub> to the new portal location for maintenance and emergency access. This road would also be required during construction for access to the portal works and for removal of excavated material;
- appropriate land at the portal for associated portal buildings and equipment, together with vehicular access to track level; and
- temporary rail systems construction areas by the portal.

These works would require substantial further land to be brought within Bill limits for which an Additional Provision would be required. There would also be new or different significant environmental impacts arising from the different land take required, revised permanent works and, during construction, from revised materials movements.



# Petitioner request – a bored or mined tunnel past Wendover





## Petitioner request – a bored or mined tunnel past Wendover

The proposal for a 3.5 - 4.0km new mined or bored tunnel past Wendover in lieu of the current Proposed Scheme green tunnel and adjacent surface works would require additional land to be acquired in order to:

- provide for a new permanent access road from the A413 up to the new southern portal of the tunnel for maintenance and emergency access. This road would also be required during construction for access to the portal works and for removal of excavated material;
- provide for additional new permanent land take at the Wendover north portal to accommodate the wider and deeper cutting that would be required and allow for permanent vehicular access to track level at the portal;
- allow for a potential ventilation shaft along the tunnel length, which would require a new access road and land for portal facilities; and
- allow for additional temporary land take near Stoke Mandeville to provide for the construction compound required for managing tunnelling works.

These works would require substantial further land to be brought within Bill limits for which an Additional Provision would be required. There would also be new or different significant environmental impacts arising from the different land take required, revised permanent works and, during construction, from revised materials movements.

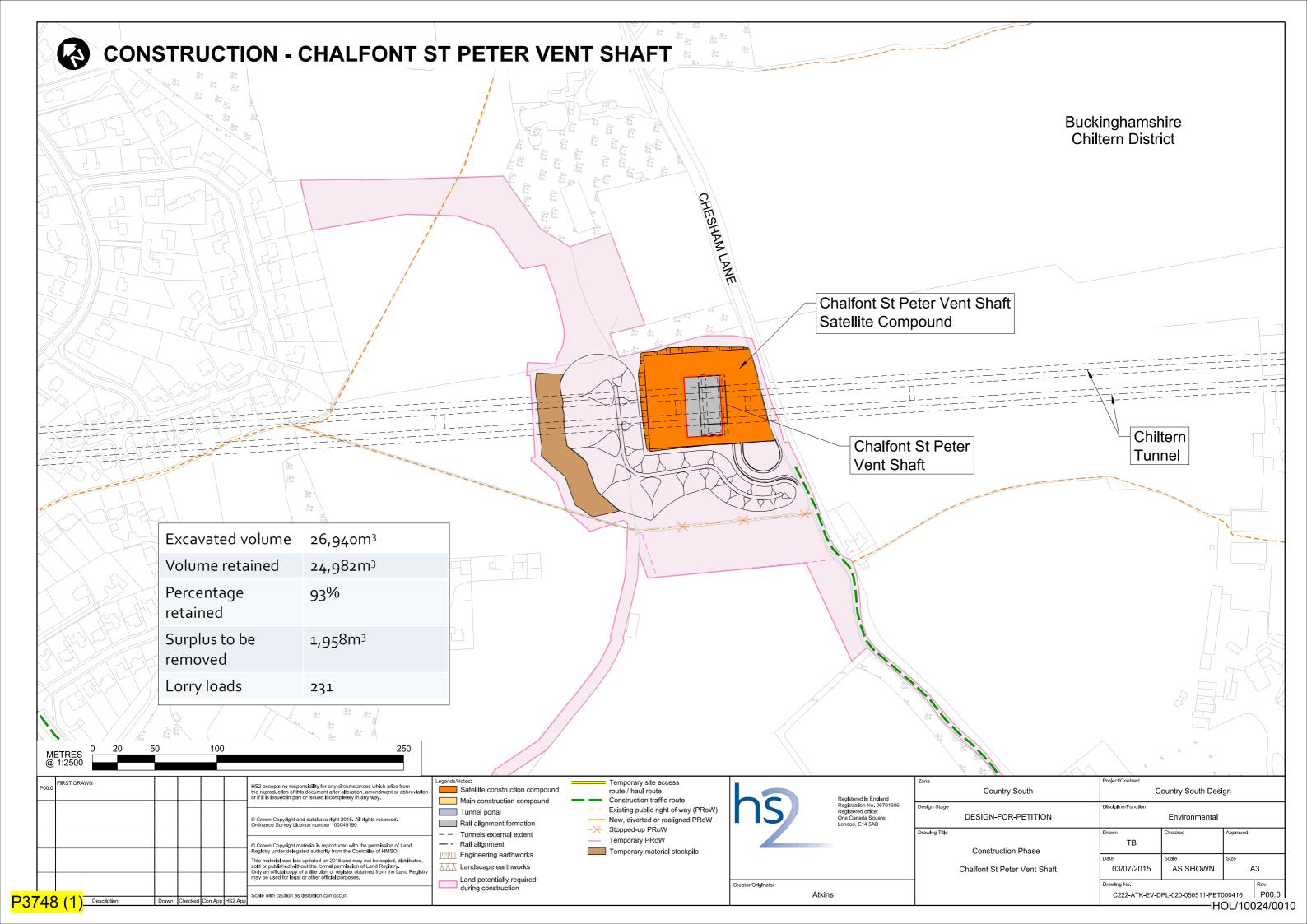
## Petitioner request - further extensions of the Wendover green tunnel

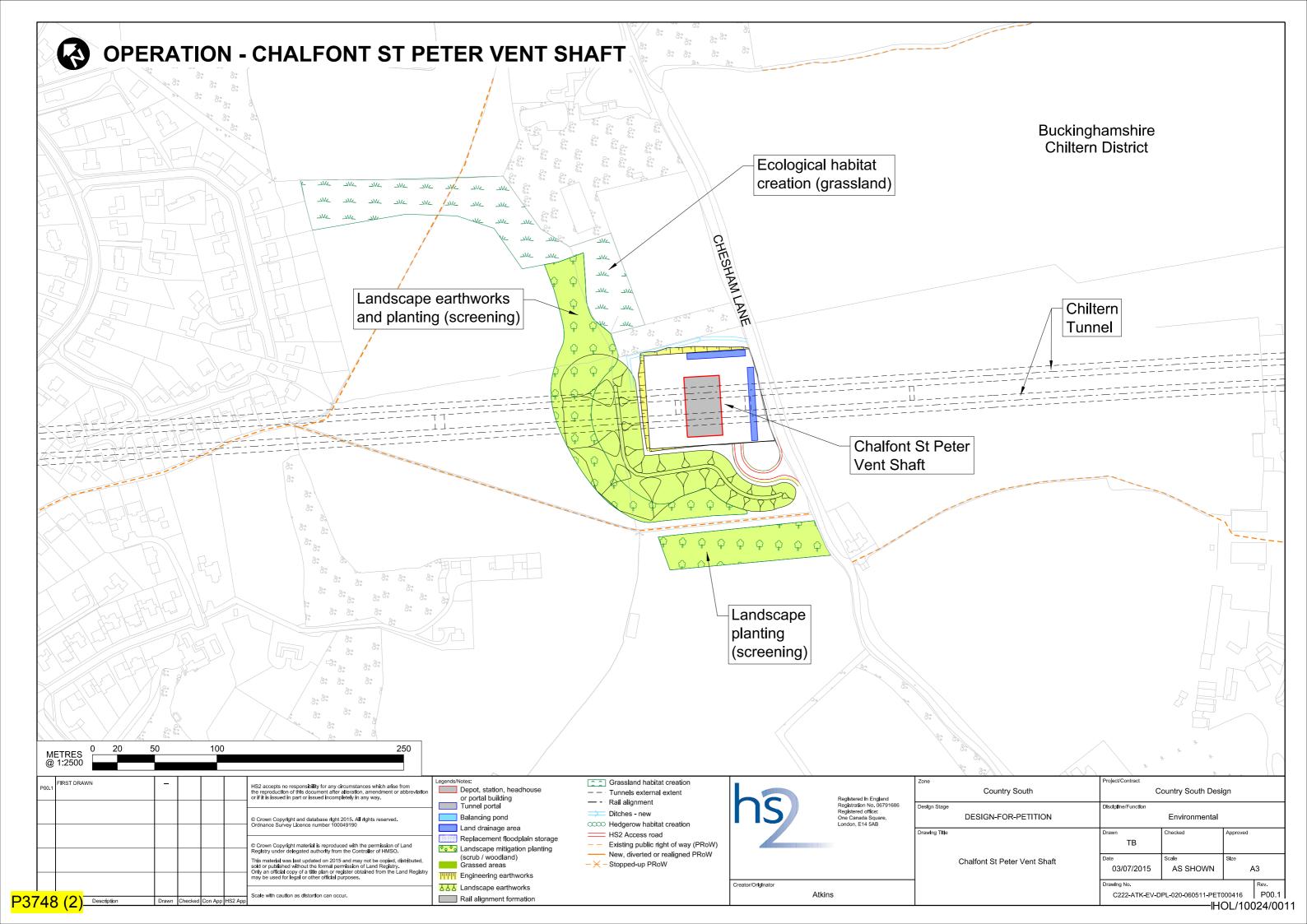
The proposal for further extensions of the Wendover green tunnel, both northwards towards Nash Lee Road and southwards towards the Small Dean viaduct, would require:

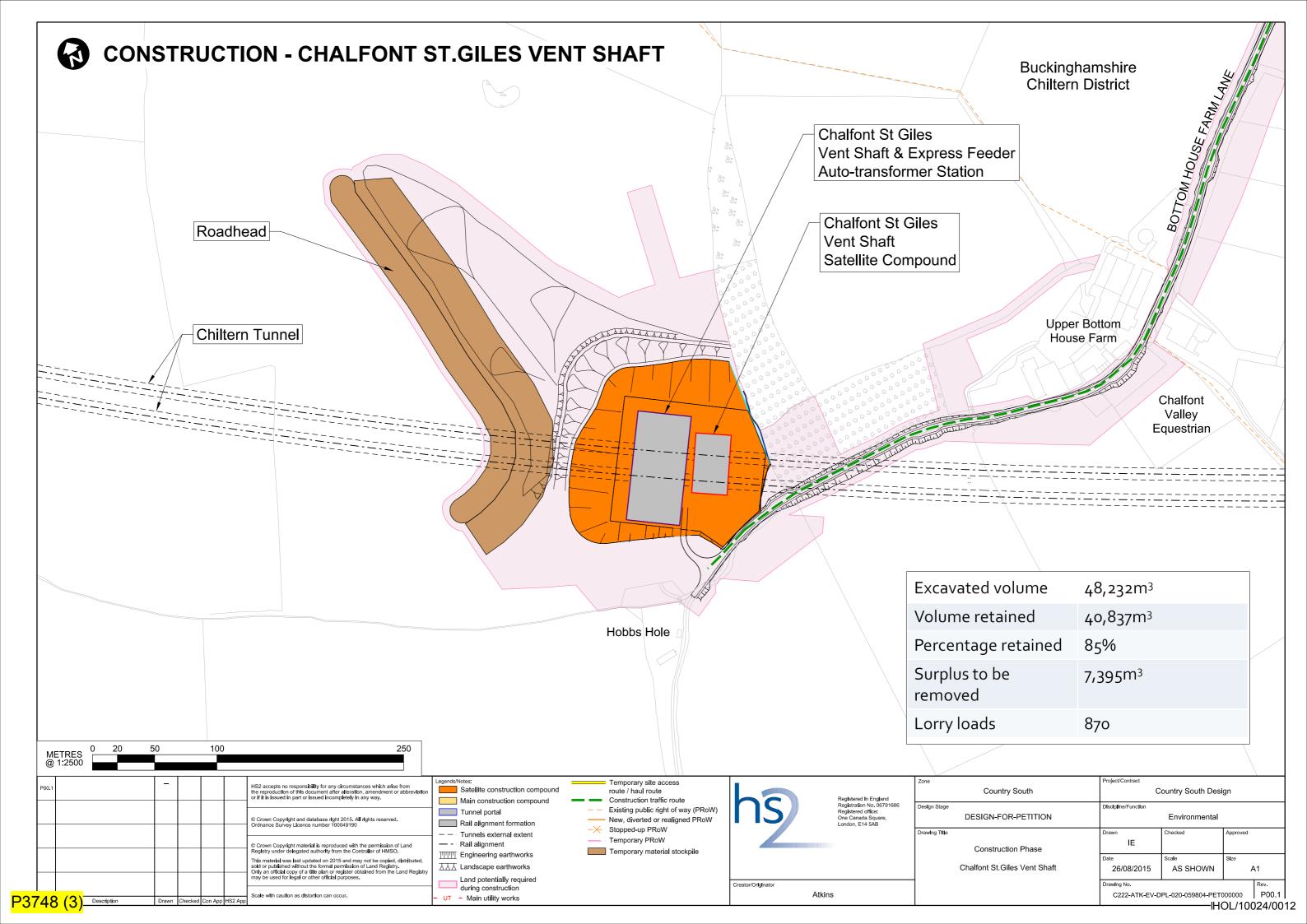
- additional new permanent land take at the revised Wendover north portal to allow for revised permanent vehicular access to track level at the portal and for associated portal buildings; and
- additional new permanent land take at the revised Wendover south portal to accommodate the portal buildings area and associated vehicular access.

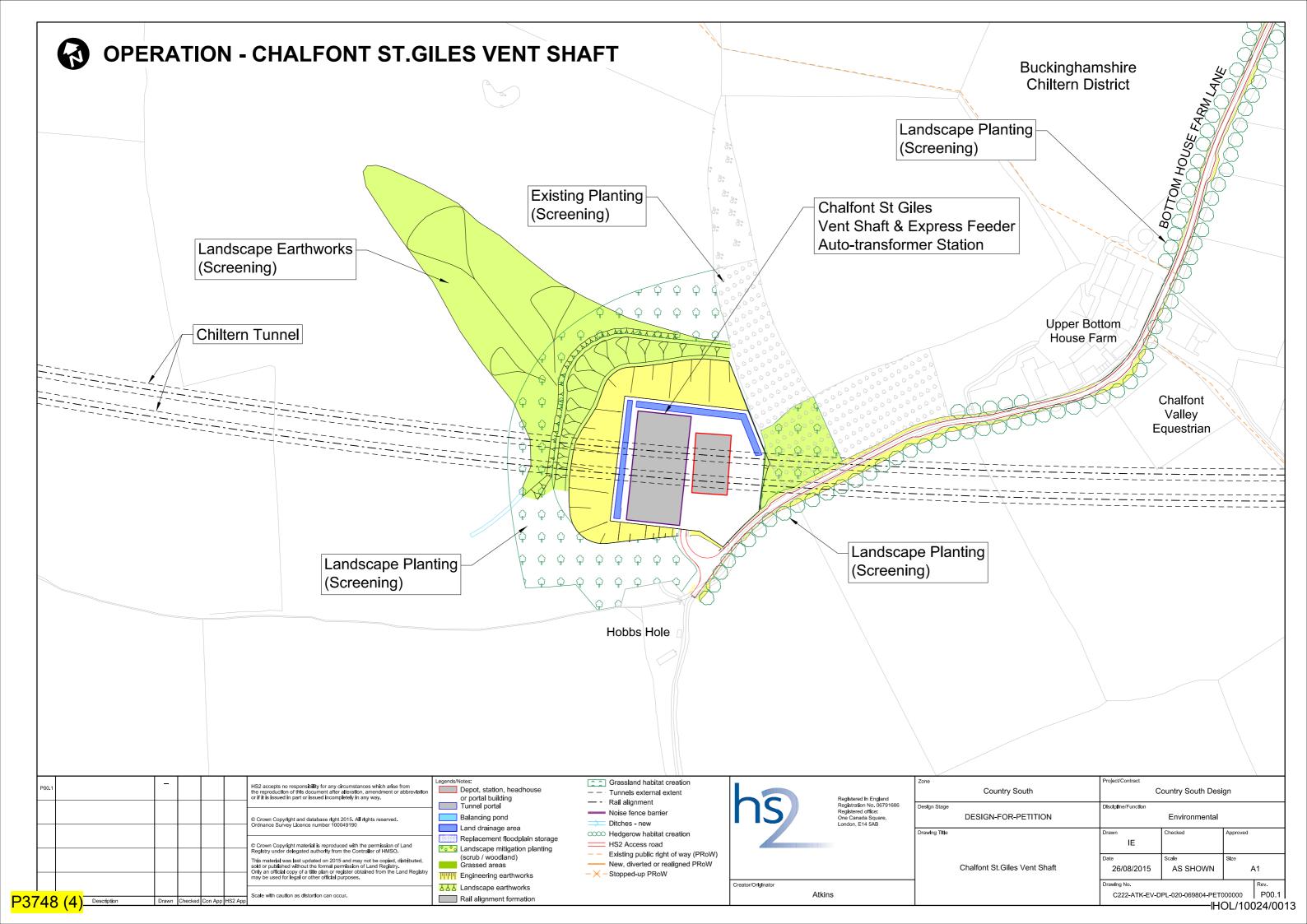
These works would require substantial further land to be brought within Bill limits for which an Additional Provision would be required. There would also be new or different significant environmental impacts arising from the different land take required, revised permanent works and, during construction, from revised materials movements.

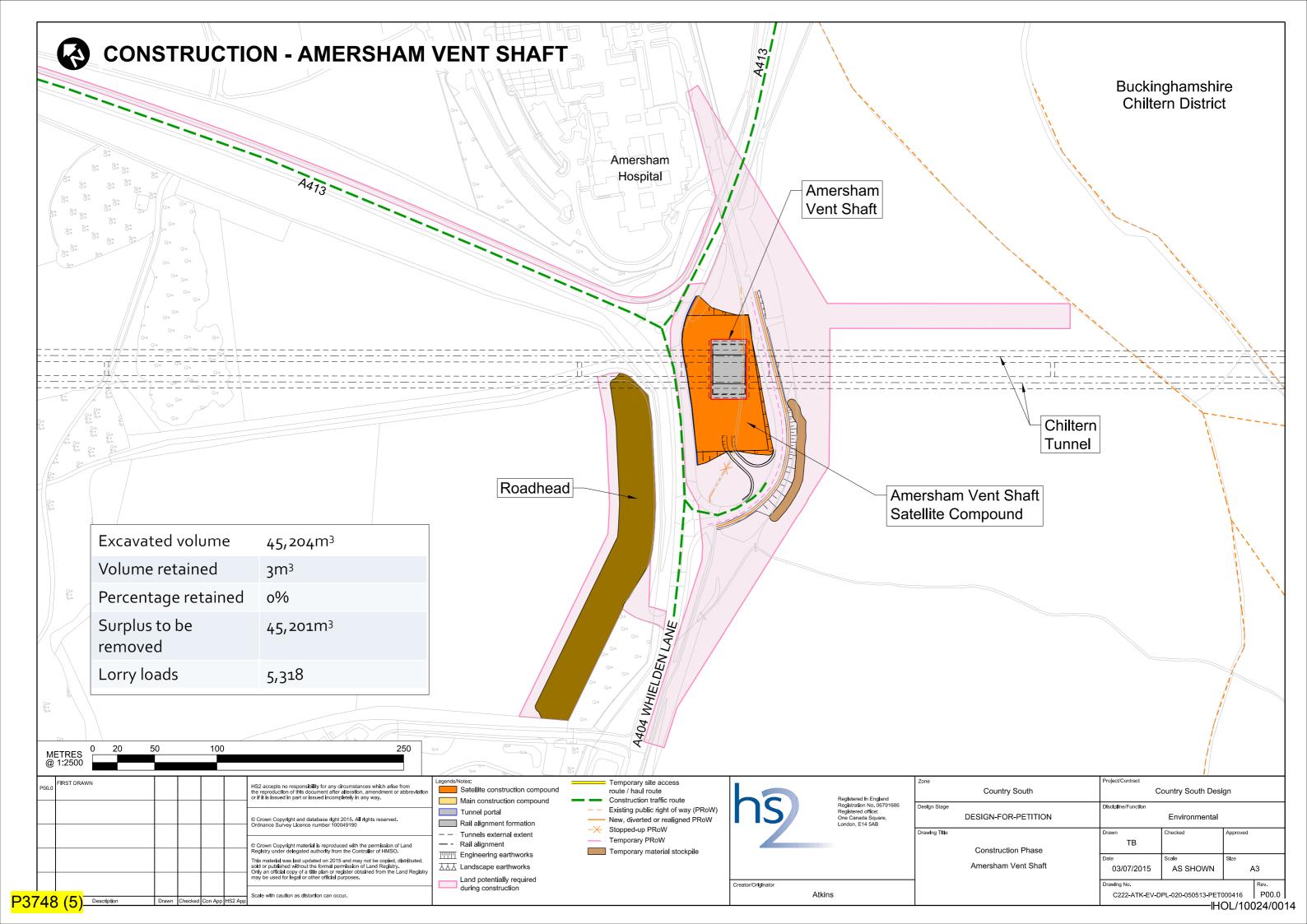


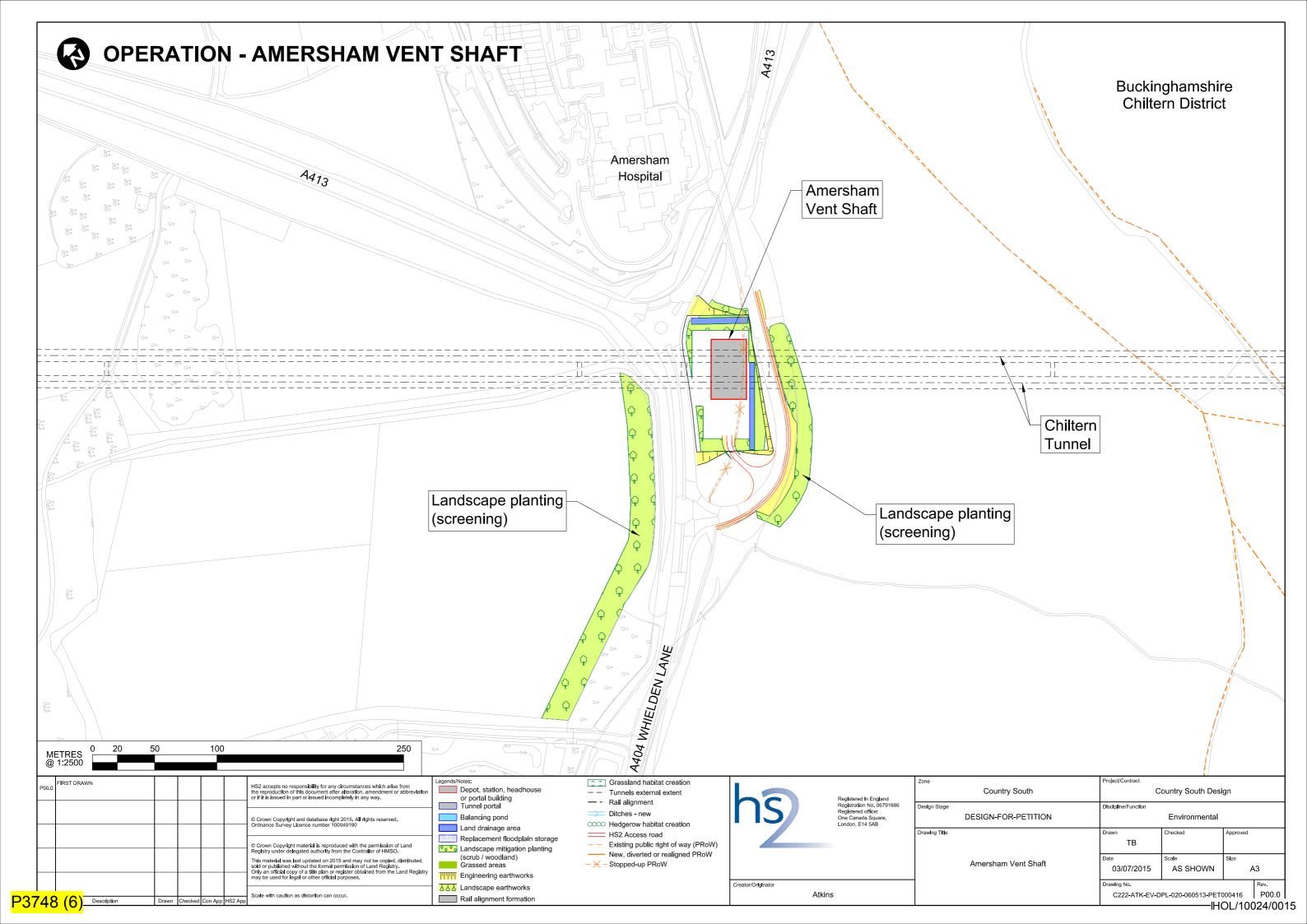


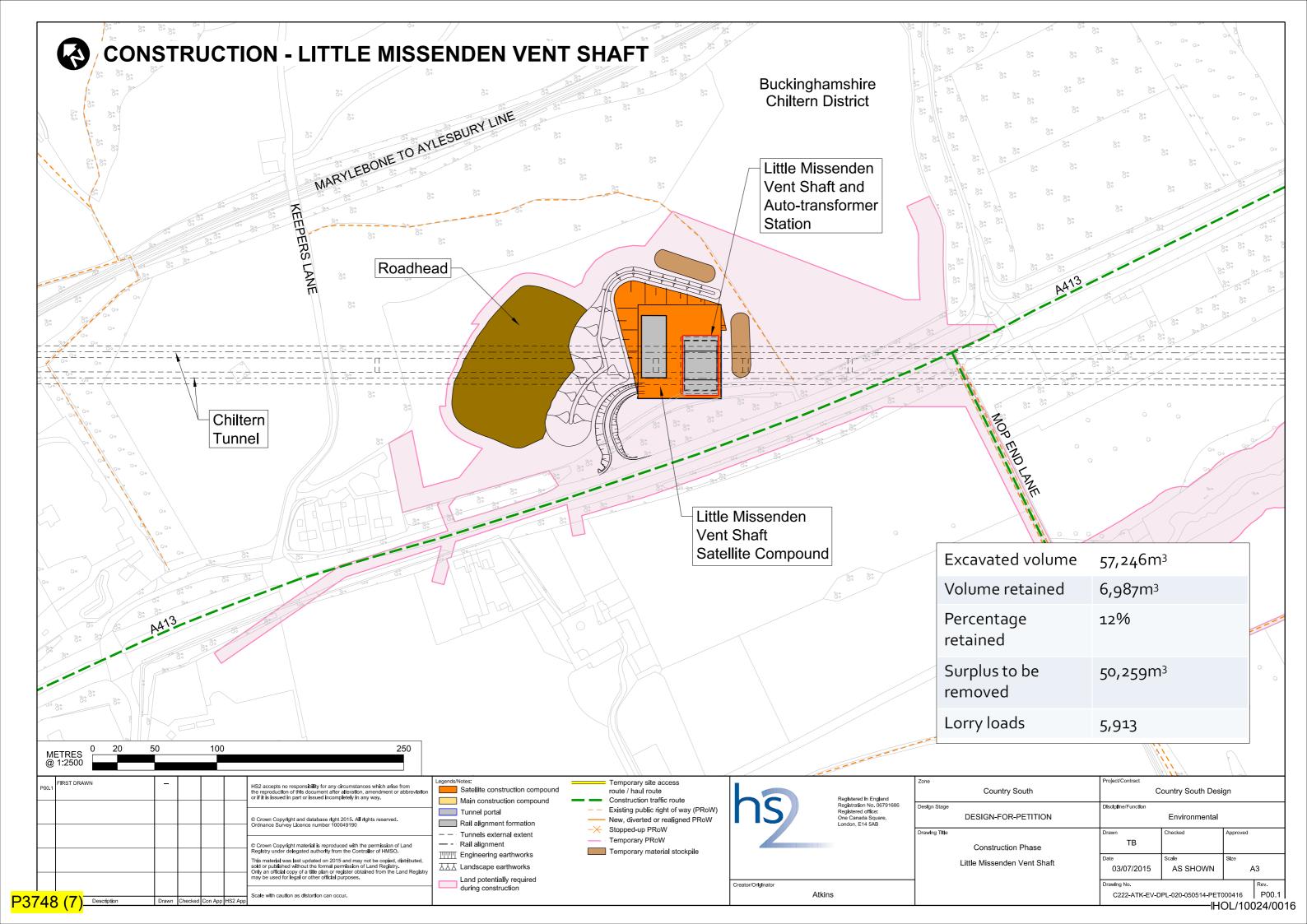


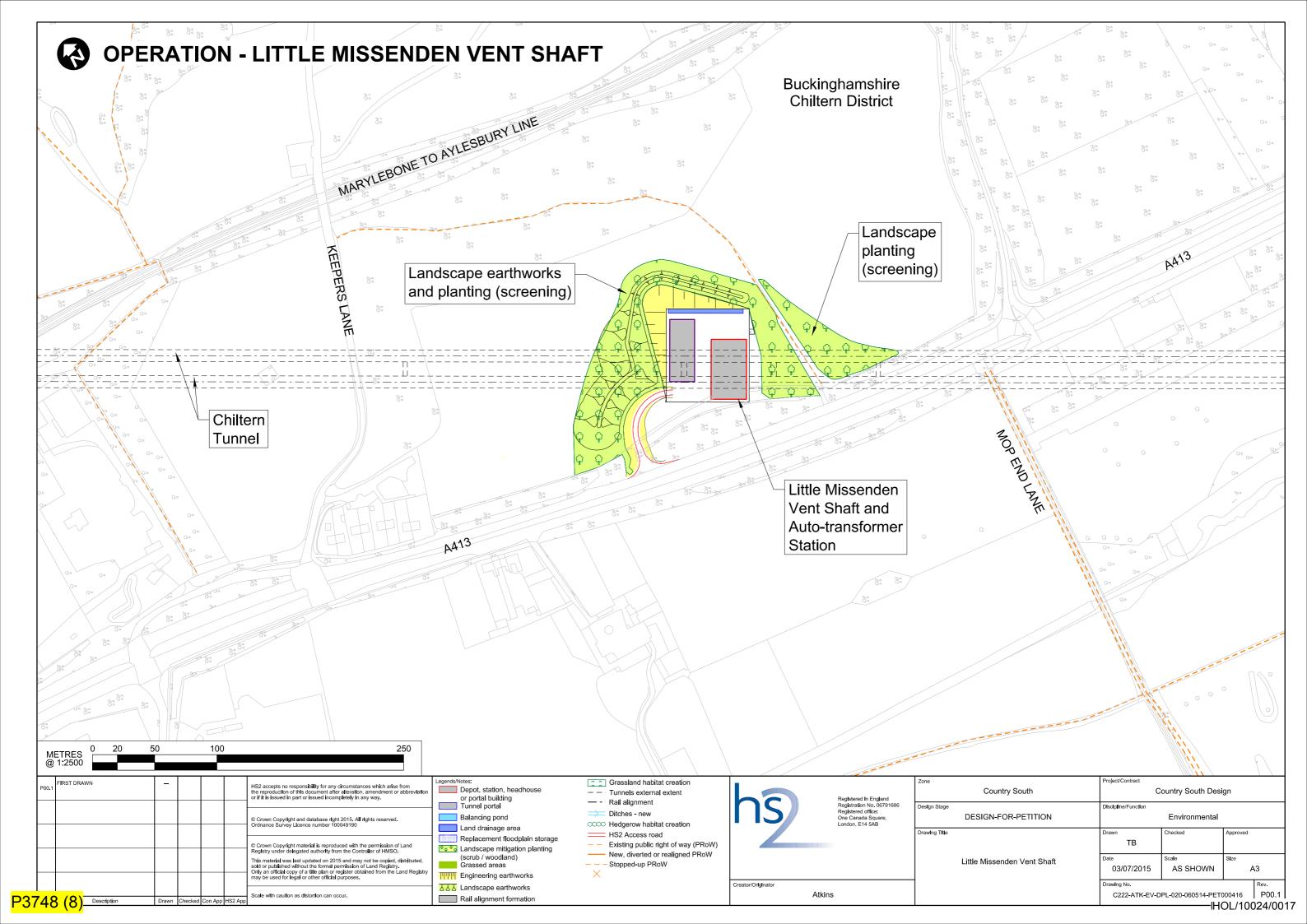


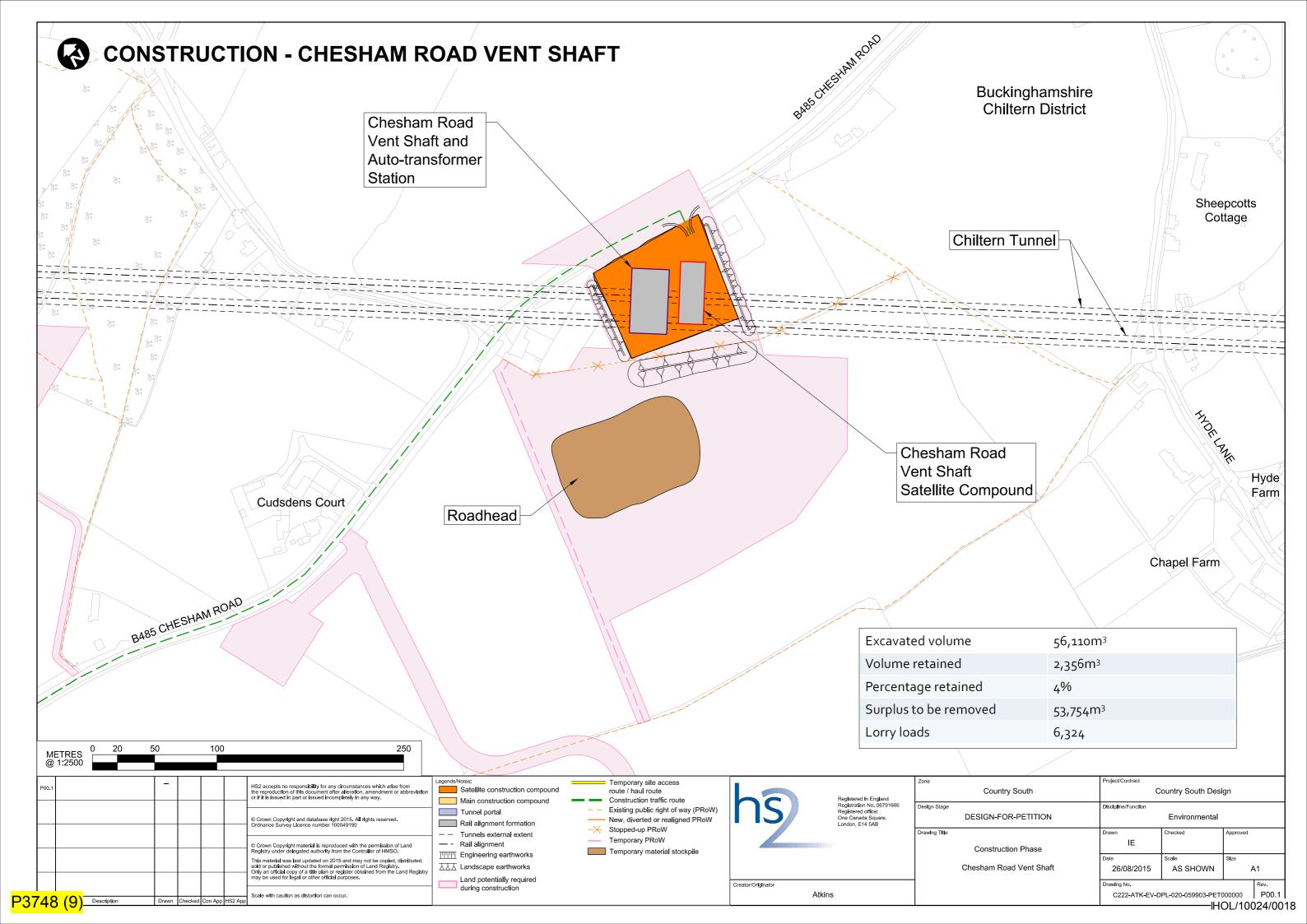


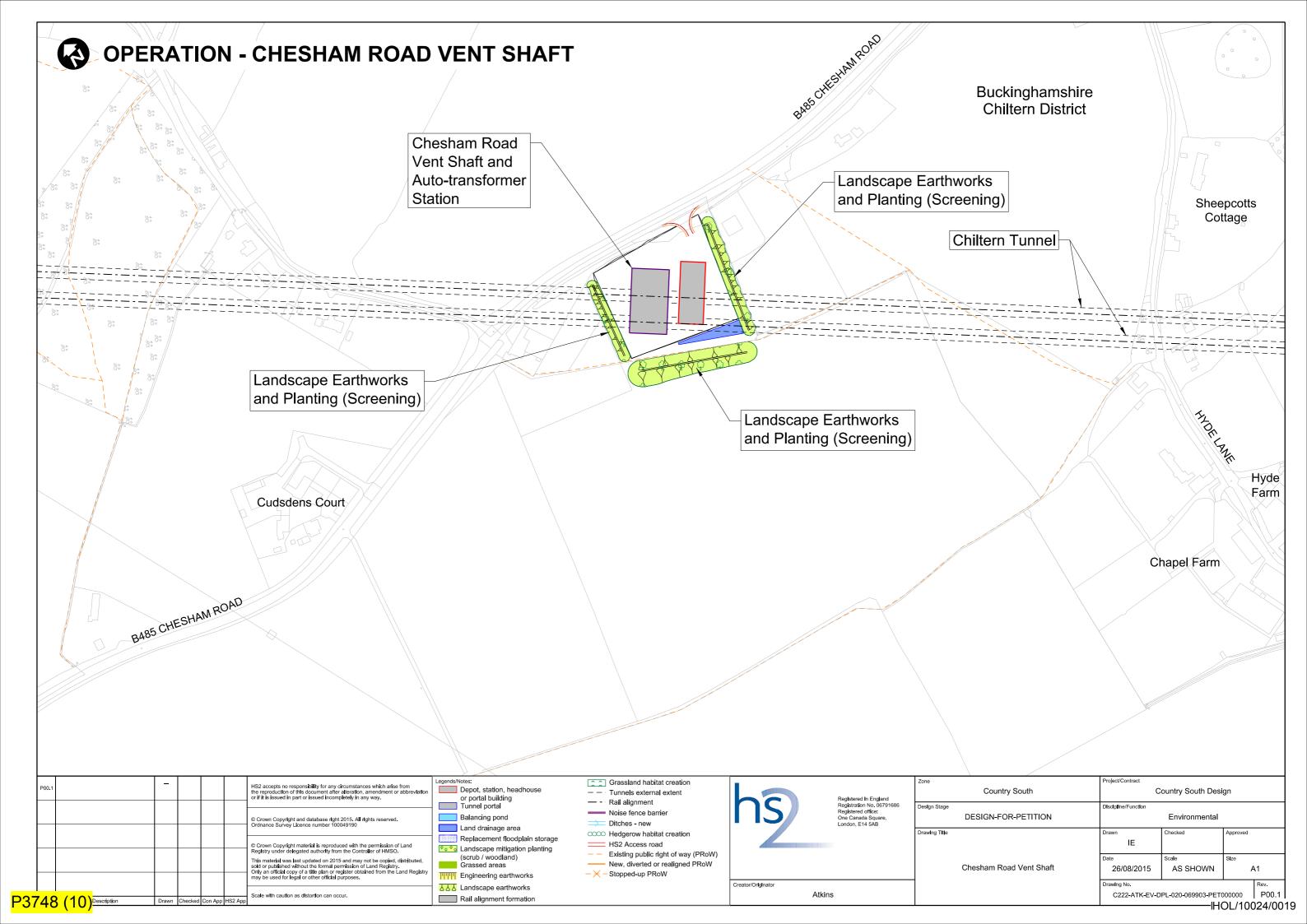












## Viaducts – Proposals in the Buckinghamshire area Sheet 1 of 3

	Viaducts	Location	Design Objective (Why are viaducts necessary?)	Mitigation proposed
1	Wendover Dean Viaduct	Midway between South Heath and Wendover	Viaduct required to cross a natural dry valley, route is in cutting either side of the valley. Alternative of an embankment across the valley discounted on landscape grounds and wide landtake required.	Proposed Scheme vertical alignment requires to balance adjacent cut depths with height of viaduct across the dry valley. Viaduct height varies up to 18m (ground to rail height). Viaduct will be visible from the A413 and from surrounding footpaths and properties/settlements on higher ground. Viaduct is designated a Key Design Element due to visibility on the AONB and will require high quality design and finishes.
2	Small Dean Viaduct	South of Wendover, near Small Dean Lane	Viaduct required to cross over the A413 and adjacent Chiltern Line railway.	Viaduct height will be based on providing appropriate highway clearance to A413 (as railway is in a deeper cutting). Viaduct to have single span across the A413 to minimise impact on road use. Reinstatement of vegetation alongside the road and railway following construction to support integration of structure into road and rail viewpoints



## Viaducts – Proposals in the Buckinghamshire area Sheet 2 of 3

	Viaducts	Location	Design Objective (Why are viaducts necessary?)	Mitigation proposed
3	Thame Valley Viaduct	North west of Aylesbury, south of Waddesdon	Viaduct crosses the River Thame valley and flood plain.	Design will ensure piers avoid main river channel. Viaduct pier spacing and design will aim to support visual appearance of the structure given its low height
4	Twyford Viaduct	East of Twyford	This viaduct carries a length of the Proposed Scheme on embankment over the Padbury Brook and it's flooplain, providing appropriate flood clearance to the watercourse.	The viaduct is approx. 50m long, the design will ensure piers avoid main river channel.  A 4m high noise fence barrier or equivalent will located on the eastern side of Twyford Viaduct
5	Godington East and West Viaducts	Between Twyford and Chetwode	These adjacent viaducts, 80/100m long, carry the Proposed Scheme, which is on embankment in this area, over the Padbury Brook and its flood plain, providing appropriate flood clearance to the watercourse.	Design will ensure piers avoid main river channel. Viaduct pier spacing and deign will aim to support visual appearance of the structure given its low height A 1.4m noise adsorptive parapet or equivalent will be located on the west side of Godington East and West Viaducts



## Viaducts – Proposals in the Buckinghamshire area Sheet 3 of 3

	Viaducts	Location	Design Objective (Why are viaducts necessary?)	Mitigation proposed
6	Westbury Viaduct	South of Westbury	This 300m long viaduct crosses the River Great Ouse and its adjacent flood plain	A 1.4m noise adsorptive parapet or equivalent will be located on the west side of Westbury Viaduct
7	Turweston Viaduct	Adjacent to Turweston	This gom long viaduct crosses the River Great Ouse.	A 4m high noise fence barrier or equivalent will be located on the eastern side of the Turweston Viaduct



### **Viaducts – Design Policy**

### **HS2 Design Vision & Independent Design Panel**

The design of HS<sub>2</sub> will be developed in line with the HS<sub>2</sub> Design Vision.

In addition, the Secretary of State has established an independent Design Panel, so as to ensure that designs of major stations and structures and other related design aspects of the new railway will complement local aspirations and contribute to the natural and built environment. Sadie Morgan has been appointed Chair of the HS2 Design Panel. A pool of panel members covering all design disciplines has been appointed to independently assist the design challenge.



Generic illustration of a high viaduct

The Design Panel will assist HS<sub>2</sub> Ltd through advice, and HS<sub>2</sub> Ltd will work in partnership with a range of organisations, including planning authorities. The aim will be to deliver a high standard of design that is also cost-effective and sustainable.

Source: **HS2 Information Paper D1**: Design Policy



### Viaducts – Design Policy

### **Design Development & Public Engagement**

The Promoter will engage the public on the design development of Key Design Elements - including main viaducts, depot buildings and key ventilation shafts in sensitive areas.

Viaducts within Buckinghamshire which are classified as Key Design Elements are:

- Colne Valley Viaduct;
- Small Dean Viaduct;
- Wendover Dean Viaduct; and
- Thame Valley Viaduct.



# **Stoke Mandeville Maintenance Loop Location Selection**

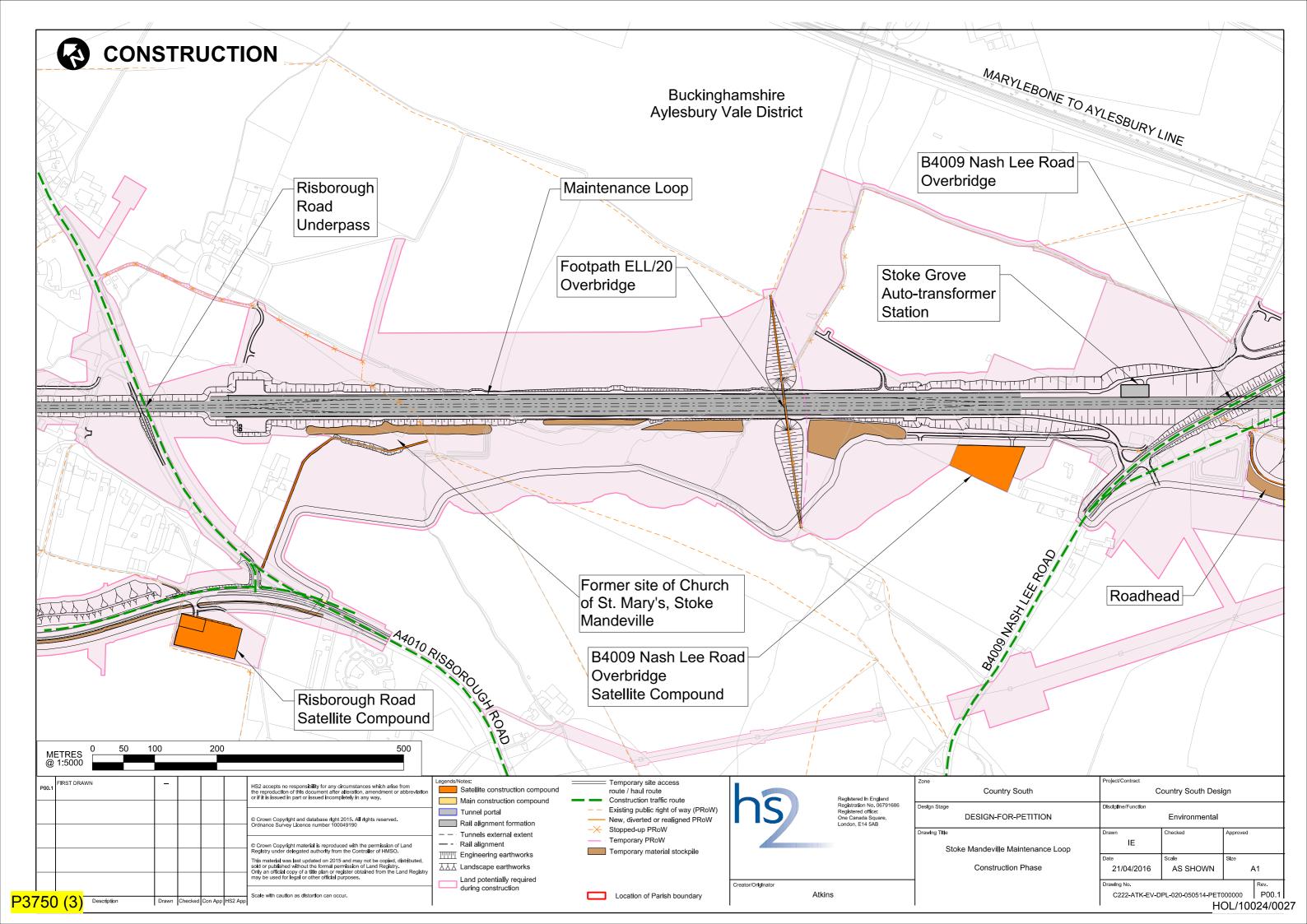
Topic	
Purpose	Maintenance loops are required to enable maintenance trains to reach work sites on the track quickly in the
	limited night closure period. The Stoke Mandeville Maintenance Loop is to be located at Stoke Mandeville, between London and Calvert.
	The principal functions of the loops are to:
	Allow maintenance trains to be kept securely during the day, in readiness for maintenance work during the night
	Have a safe stopping location for any passenger train that develops a fault
	Have no maintenance functions taking place at the loop
Location/	Located between Nash Lee Road and the A4010 Risborough Road, approximately mid-way between
Layout	London and the Infrastructure Maintenance Depot at Calvert.
	• The loop needs to be approximately 1.25km in length to allow passenger trains to be parked clear of the
	main line if necessary.
	Access tracks are located either side of the maintenance loop with access/egress from Nash Lee Lane on
	the east side and B4009 Nash Lee Road on the west side of the proposed scheme.
Scheme	Enhanced screen planting included to screen views of the Maintenance Loop from Coombe Hill
development	Assurance provided to Stoke Mandeville Parish Council to increase the height of the existing noise
	fence barriers at the Maintenance Loop height from 3m to 4m, or equivalent.

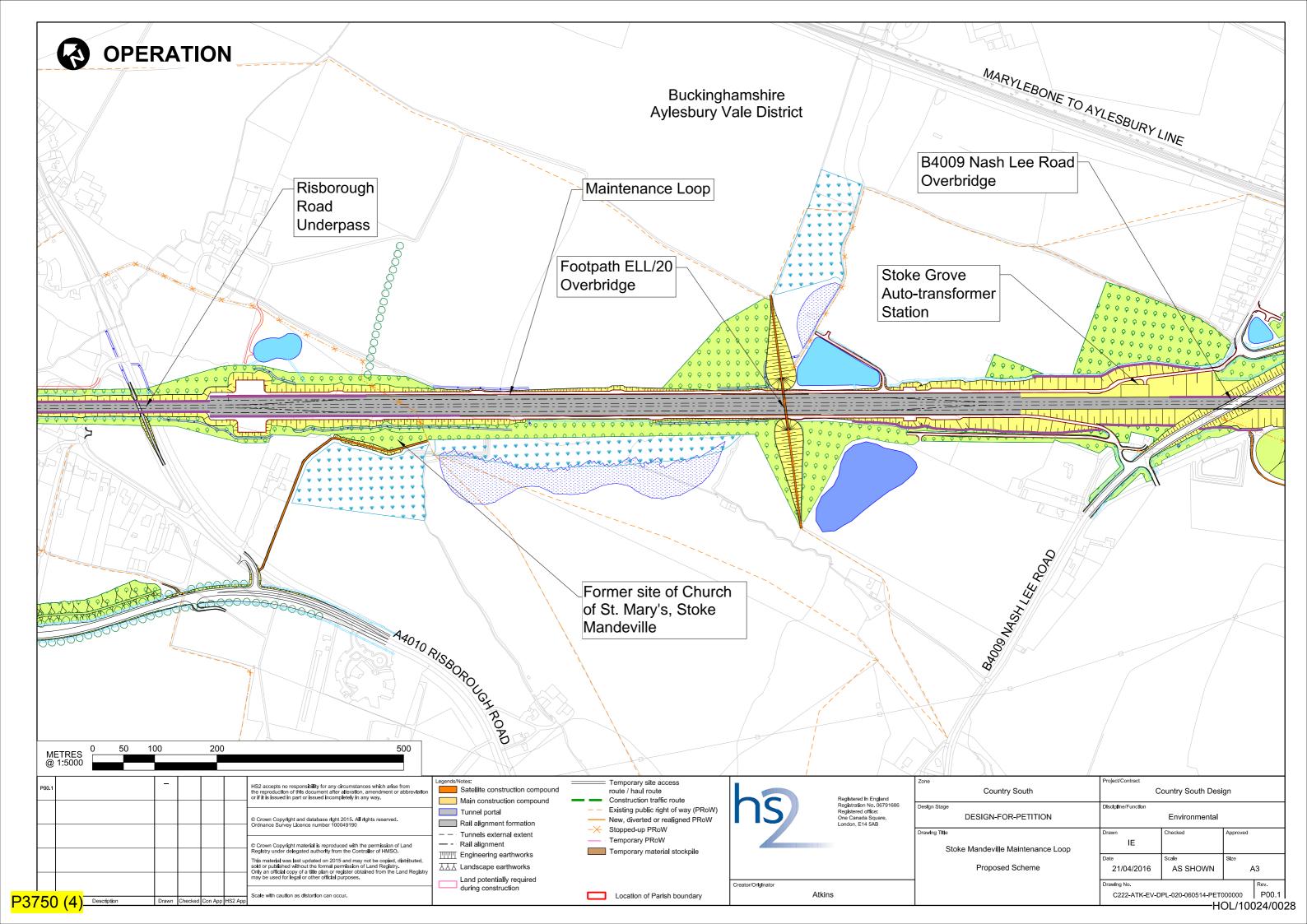


# **Stoke Mandeville Maintenance Loop Location Selection**

	Option located at Stoke Mandeville (Proposed Scheme)
Details	<ul> <li>Located between Nash Lee Road and the A4010 Risborough Road.</li> <li>Access tracks either side of the maintenance loop with access/egress from Nash Lee Lane on the east side and B4009 Nash Lee Road on the west side of the Proposed Scheme.</li> <li>Landscape mitigation and hedgerow planting on either of the maintenance loop to help screen view of the railway and maintenance loop. The inclusion in AP4 of additional areas of woodland planting on both sides to partially screen the sidings from the Chilterns escarpment.</li> </ul>
Benefits	<ul> <li>Avoids visual impacts on the landscape qualities of AONB and loss of ancient woodland</li> <li>Limits the maintenance trains' movements during the night closure period, hence reducing noise and visual effects.</li> </ul>
Mitigation	<ul> <li>Noise fencing is provided either side of the maintenance loops to mitigate noise effects from passenger and maintenance trains.</li> <li>No adverse noise effects have been assessed in the vicinity of the loop.</li> <li>Landscape mitigation and hedgerow planting provided on either of the maintenance loops to help screen view of the railway and maintenance loop.</li> <li>Additional Provision 4 introduced additional areas of woodland planting on both sides to partially screen the sidings from the Chilterns escarpment.</li> </ul>
Lighting	<ul> <li>Consideration will be given to reducing light pollution resulting from working at night</li> <li>Low level lighting will be provided to allow safe access for train drivers to the facility</li> <li>The height of external lighting installations to be designed as low as possible</li> <li>Using automatic lighting control systems with photocells and time clocks to control their operation</li> <li>Using LED or low energy lamps</li> </ul>







## **Construction Compounds - Types**

### Main construction compounds for civil and rail systems works

- Will act as strategic hubs for core project management activities (i.e. engineering, planning and construction delivery) and for office based construction personnel.
- Will include offices, storage for materials (such as aggregates, structural steel, steel reinforcement) and laydown areas, maintenance and parking facilities (for site plant, lorries and staff cars), together with the main welfare facilities for construction personnel.
- Workers' sleeping/residential accommodation may be provided at some of these construction compounds, subject to approval under schedule 17 (Conditions of deemed planning permission) of the Bill.
- Will typically require approximately 3ha of land and support up to 260 construction personnel.

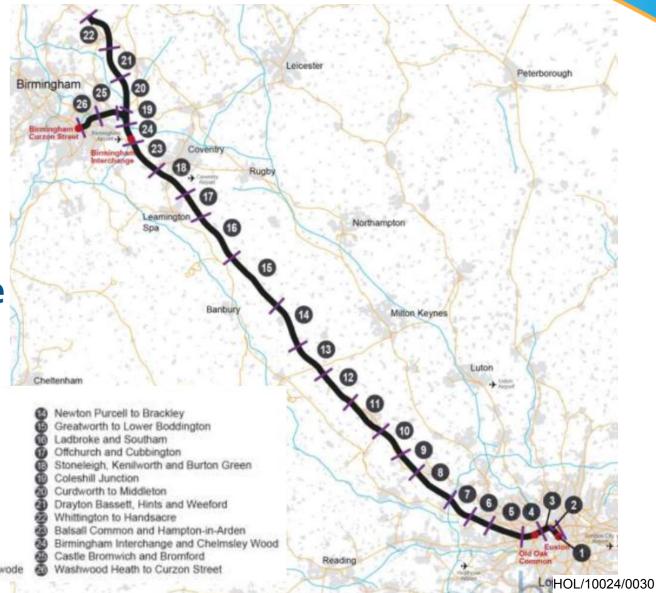
### Satellite construction compounds for civil and rail systems works

- Will generally be smaller, providing office accommodation for a limited number of construction personnel associated with specific construction activities.
- Will typically require approximately 0.75ha of land, supporting up to 100 construction personnel.
- Will include local storage for plant and materials, welfare facilities and limited car parking.
- Will not include provision for sleeping/residential use.

**Ref. HS2 Information Paper D2**: Selection of the location of construction compounds



# Community Forum Area (CFA) along HS2 Phase 1 route



#### Community forum areas

Euston - Station and Approach

Camden Town and HS1 Link

Primrose Hill to Kilburn (Camden)

Kilburn (Brent) to Old Oak Common

Northolt Corridor

South Ruislip to Ickenham

Colne Valley

The Chalfonts and Amersham

Central Chilterns

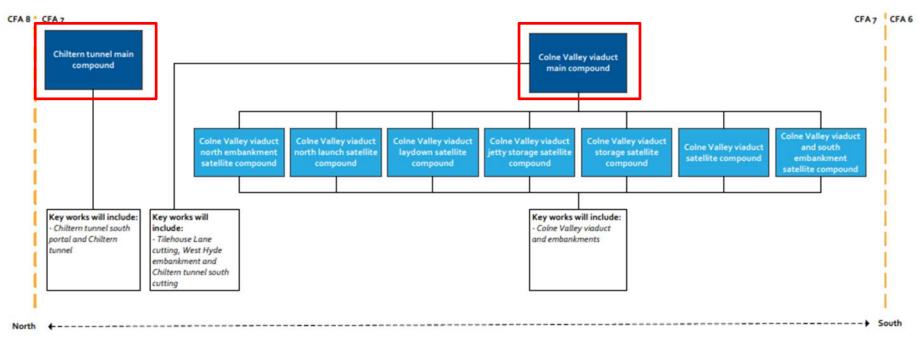
Dunsmore, Wendover and Halton

Stoke Mandeville and Aylesbury

Waddesdon and Quainton

(2) erf. Steepie Claydon, Twyford and Chetwode

## Buckinghamshire Construction Compounds CFA 7 – Civils works compounds



Key

Main construction compounds

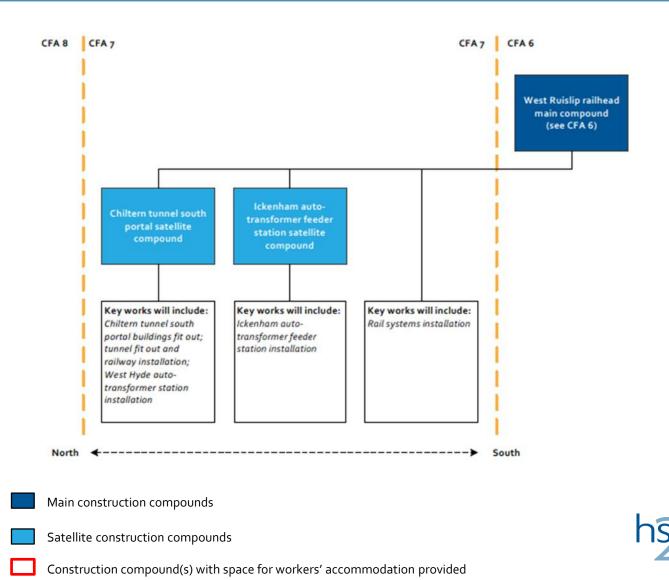
Satellite construction compounds

Construction compound(s) with space for workers' accommodation provided





## Buckinghamshire Construction Compounds CFA 7 – Rail systems compounds

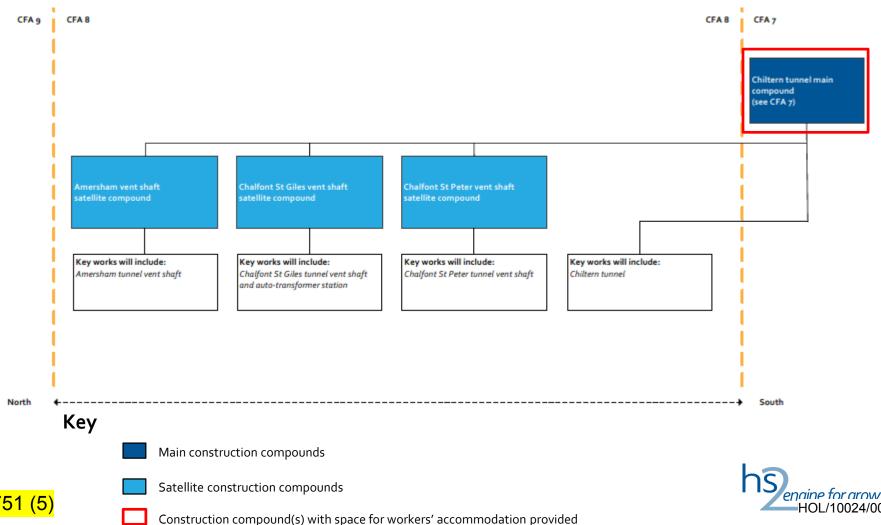


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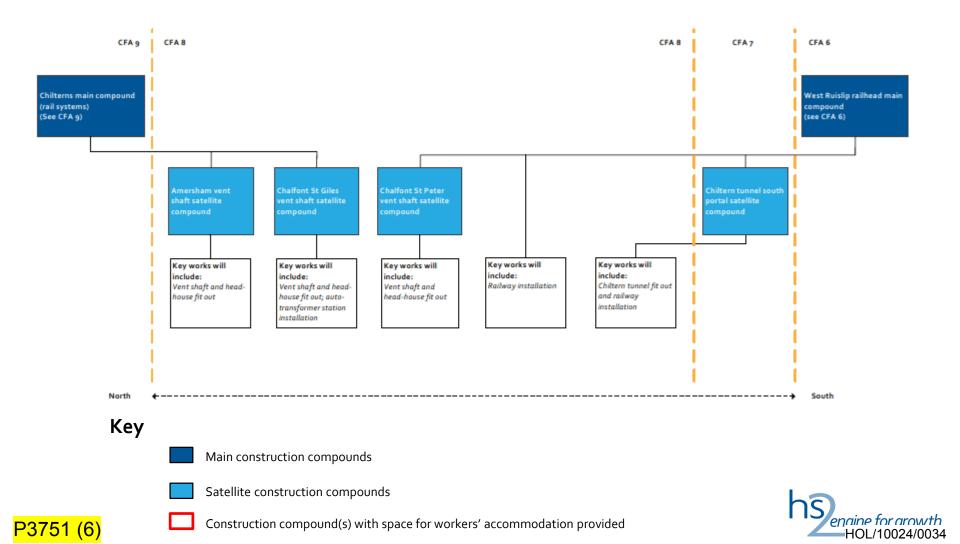
P3751 (4)

Key

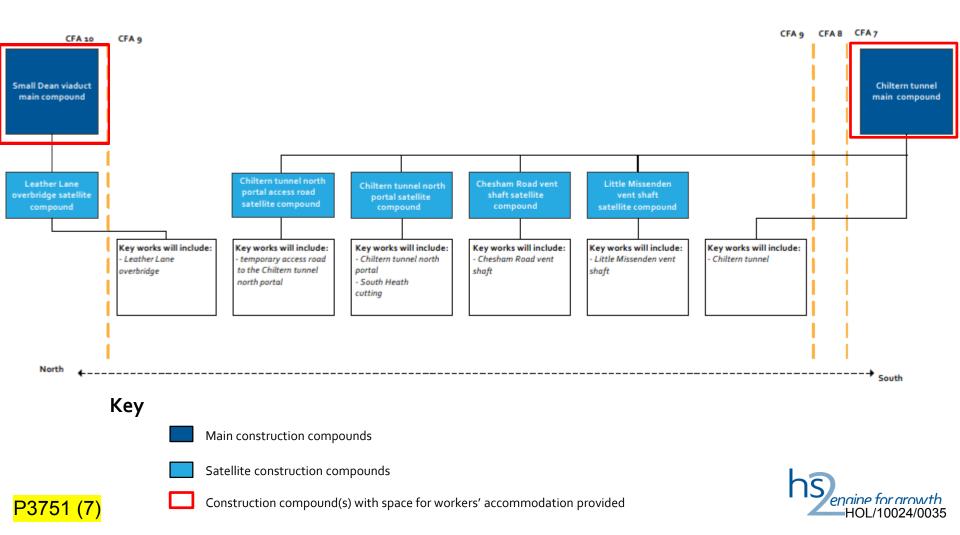
### **Buckinghamshire Construction Compounds** CFA 8 – Civils works compounds



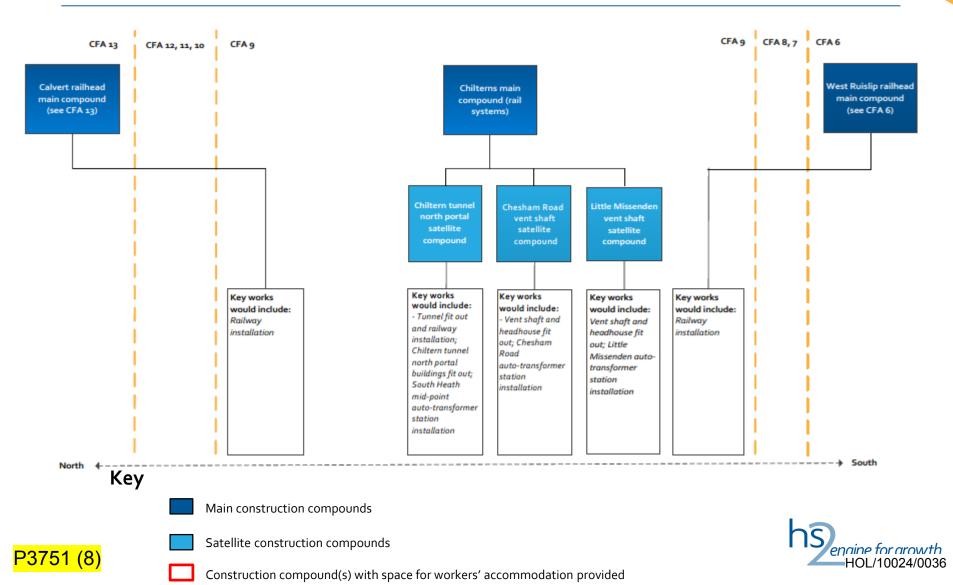
## Buckinghamshire Construction Compounds CFA 8 – Rail systems compounds



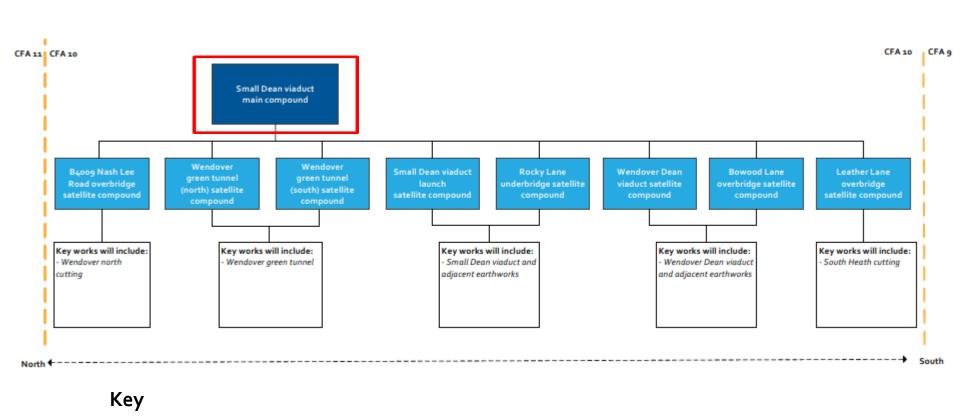
## Buckinghamshire Construction Compounds CFA 9 – Civils works compounds



## Buckinghamshire Construction Compounds CFA 9 – Rail systems compounds



## Buckinghamshire Construction Compounds CFA 10 – Civils works compounds



P3751 (9)

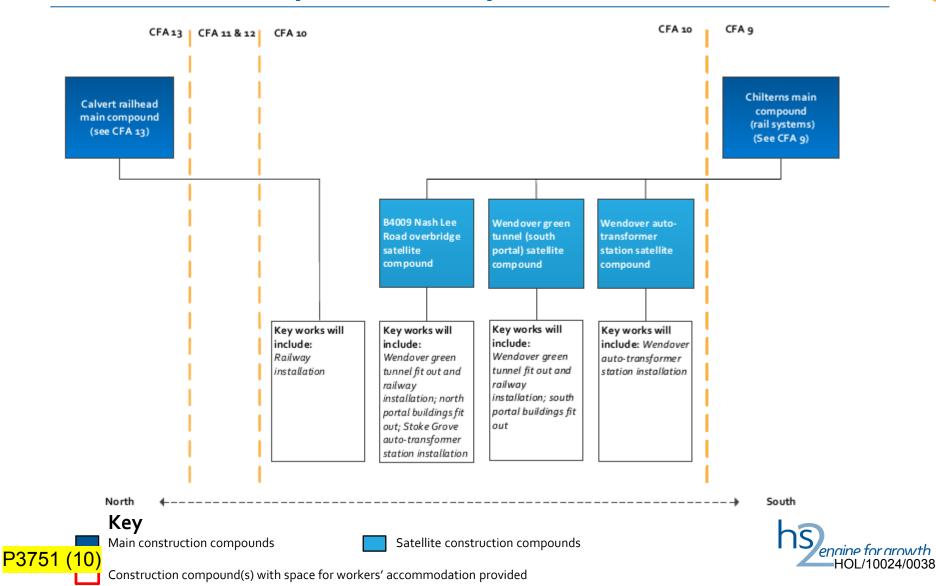
Construction compound(s) with space for workers' accommodation provided

Main construction compounds

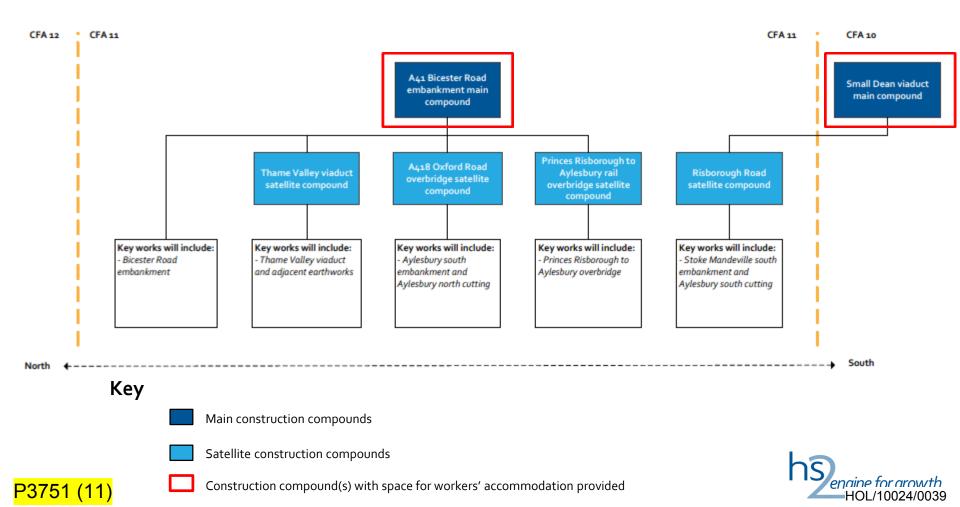
Satellite construction compounds



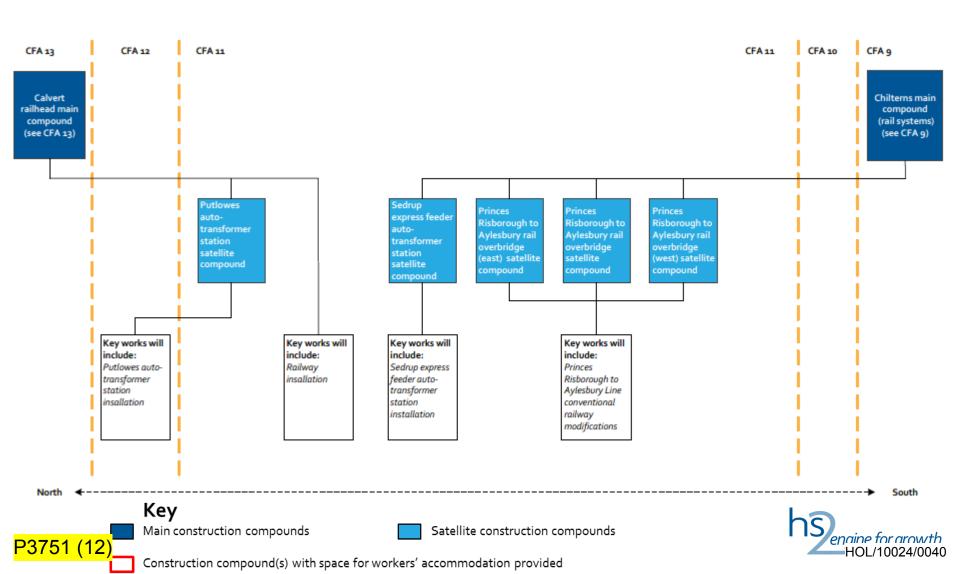
## Buckinghamshire Construction Compounds CFA 10 – Rail systems compounds



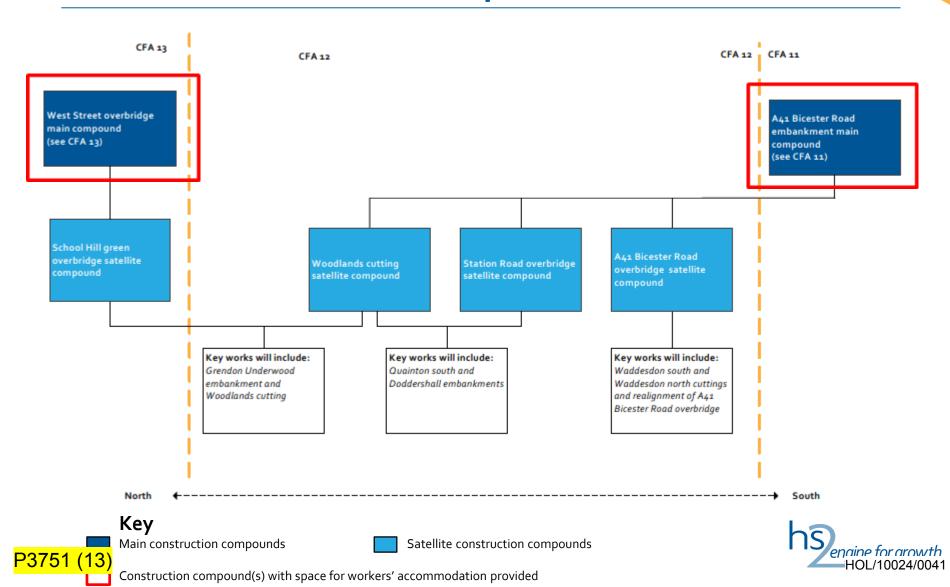
## Buckinghamshire Construction Compounds CFA 11 – Civils works compounds



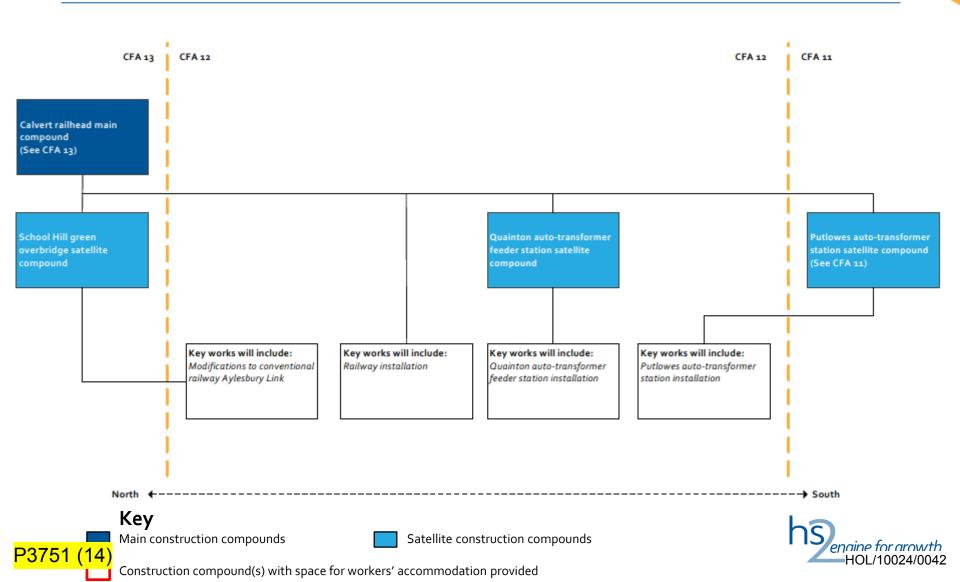
### Buckinghamshire Construction Compounds CFA 11 – Rail systems compounds



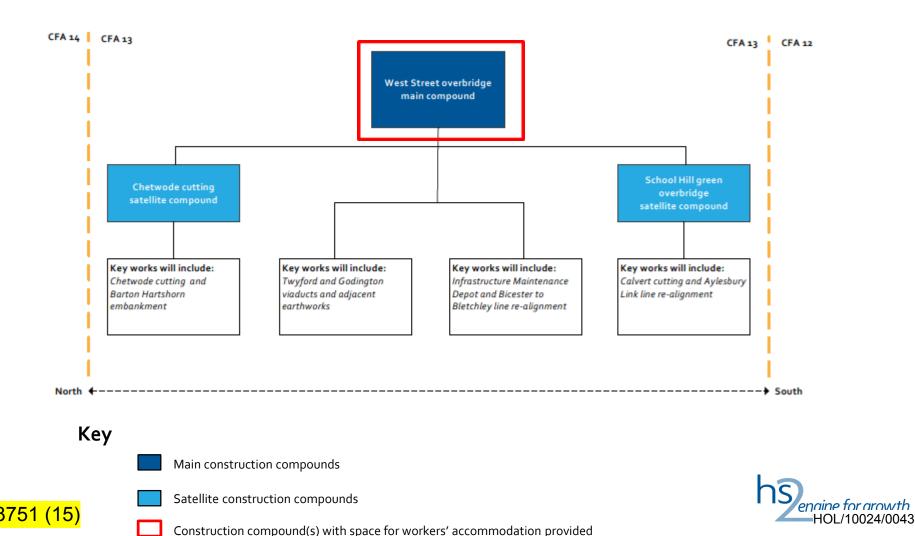
# Buckinghamshire Construction Compounds CFA 12 – Civils works compounds



### Buckinghamshire Construction Compounds CFA 12 – Rail systems compounds



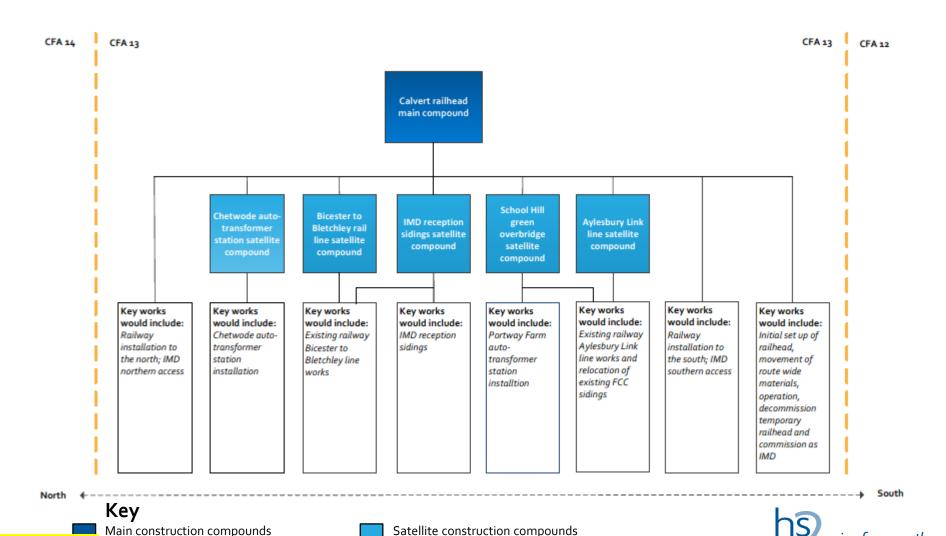
## Buckinghamshire Construction Compounds CFA 13 – Civils works compounds



## Buckinghamshire Construction Compounds CFA 13 – Rail systems compounds

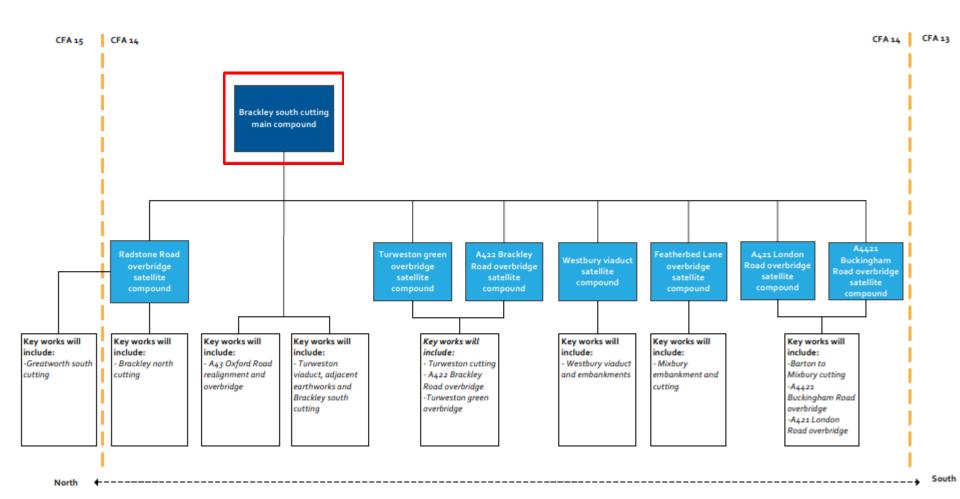
Construction compound(s) with space for workers' accommodation provided

P3751 (16)



HOL/10024/0044

# Construction Compounds – Buckinghamshire (CFA 14)





P3751 (17)

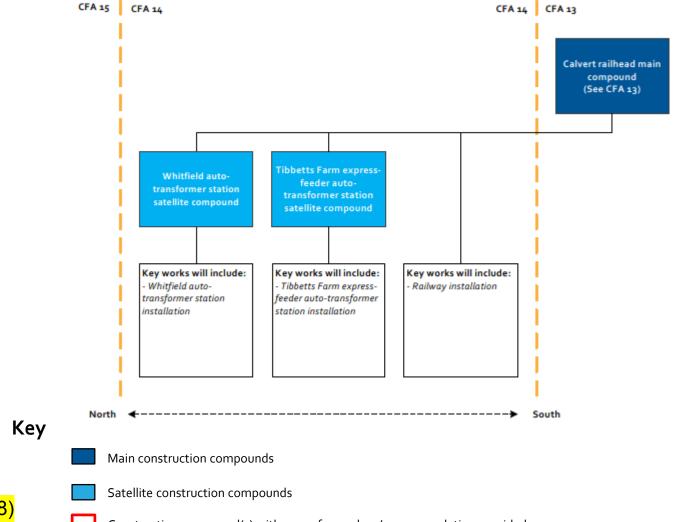
Main construction compounds



Satellite construction compounds



## **Buckinghamshire Construction Compounds** CFA 14 – Rail systems compounds



Construction compound(s) with space for workers' accommodation provided

HOL/10024/0046