



# High Speed Rail (West Midlands - Crewe)

## Environmental Statement

Volume 5: Technical appendices  
Borrow pits restoration strategy (CT-009-000)



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(West Midlands - Crewe)  
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## Department for Transport

High Speed Two (HS2) Limited has been tasked by the Department for Transport (DfT) with managing the delivery of a new national high speed rail network. It is a non-departmental public body wholly owned by the DfT.

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## Executive summary

For construction of Phase 2a of the proposed High Speed Two (HS2) railway line between the West Midlands and Crewe, the Proposed Scheme, there is anticipated to be a shortfall of suitable material from the excavation of cuttings and other works to construct the HS2 railway embankments. If this material were to be imported it would result in significant adverse transport effects during construction on some of the local roads in the vicinity of the Proposed Scheme. To reduce these effects, six borrow pits in proximity to the Proposed Scheme are proposed. A borrow pit is an area from which material is excavated for use in the construction of nearby infrastructure projects.

This Restoration Strategy, referred to as the Strategy, describes the principles to be adopted for the excavation and restoration of the six borrow pits, proposed to be excavated as part of the construction of the Proposed Scheme. The Strategy is presented as part of the High Speed Rail (West Midlands – Crewe) Environmental Statement.

The purpose of the Strategy is to demonstrate that the restoration proposals will be practically achievable and in line with the relevant policy guidance.

The Strategy identifies high level principles for land restoration following excavation of the borrow pits. Further details concerning the planning and implementation of restoration and aftercare will be developed during detailed design and will form part of a site specific restoration plan for each borrow pit. The site specific restoration plans will be developed in accordance with the principles contained in the Strategy.

The objectives of the Strategy for the restoration and aftercare of the borrow pits are to:

- restore land to a condition suitable for its original use, post-excavation;
- provide essential mitigation for local environmental effects, as a consequence of the use of the borrow pits;
- maximise use of cohesive materials arising from construction of the Proposed Scheme in the restoration process, thus avoiding transportation off site; and
- contribute to addressing the impact of climate change by taking opportunities to mitigate pre-existing and potential future flood risk and water stress risk issues.

The borrow pit sites are currently predominantly in agricultural use. Following extraction of construction materials from the borrow pits, the nominated undertaker<sup>1</sup> will restore the land to a condition suitable for its original use. The design objective, where the land is being returned to agricultural use, is to avoid any reduction in long term capability, which would downgrade the quality of the disturbed land, through the adoption of good practice technique in handling, storing and reinstating soils on that

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<sup>1</sup> The body or bodies appointed to implement the powers of the hybrid Bill to construct and maintain the Proposed Scheme

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land and to provide a sufficiently deep soil profile to manage both wetter and drier conditions in the future, due to climate change impacts.

The Strategy forms part of the Environmental Statement, which will be subject to formal consultation by Parliament. The public and regulatory bodies, such as Staffordshire County Council, Cheshire East Council, the Environment Agency, Natural England and other stakeholders will be able to comment, at this stage. There will be further consultation with a wide range of relevant stakeholders as part of the preparation of the site specific restoration plan for each borrow pit.

# 1 Introduction

## 1.1 Background to the Strategy

1.1.1 A borrow pit is an area from which material is excavated for use in the construction of a nearby infrastructure project, which has insufficient site won material.

1.1.2 For construction of the Proposed Scheme, there is anticipated to be a shortfall of suitable granular material (sands and gravels) from the excavation of cuttings and other works (for example, tunnels or balancing ponds) to construct the HS2 railway embankments. The rationale for the use of borrow pits is that they reduce the need for longer distance transport of remotely won materials and thereby reduce the need for and impact of heavy goods vehicles on local roads and communities. To reduce these effects, six borrow pits are proposed in proximity to the Proposed Scheme in order to obtain granular material of an appropriate quality. Cohesive material (for example, silt and clay) from the excavation of the Proposed Scheme, which is unacceptable for the purposes of constructing high speed railway embankments will be used as backfill with the intention of restoring the borrow pits to their original ground levels and land use.

## 1.2 Purpose of the Strategy

1.2.1 The purpose of the Strategy is to set out the principles for restoration and aftercare of land following excavation of the borrow pits, in order to provide assurance to the regulatory bodies, landowners and the local community that the restoration proposals are practically achievable.

1.2.2 The Strategy reflects good practice as applied to minerals extraction and restoration and is in line with relevant minerals policy guidance. The Strategy has been developed to take account of the national and local mineral planning policies applicable in Staffordshire and Cheshire East. These are set out in more detail in Section 6 and Annex B.

1.2.3 The standards that will be applied to the excavation, restoration and aftercare of these borrow pits are comparable to those which the regulatory bodies would expect to apply to a commercial minerals operation.

1.2.4 Further details concerning the planning and implementation of restoration and aftercare will be developed during detailed design. The site specific restoration plans will be developed in accordance with the principles contained in the Strategy.

1.2.5 The excavation (operational) phase of the borrow pits is not set out in detail in the Strategy, as it is addressed in the Environmental Statement (ES) Volume 2: Community area reports and will be bound by the commitments of the Environmental Minimum Requirements<sup>2</sup> (EMR), including the draft Code of Construction Practice (CoCP)<sup>3</sup>.

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<sup>2</sup> EMR set out the environmental and sustainability commitments to be made by the Secretary of State for Transport that will be observed in the construction of the Proposed Scheme

<sup>3</sup> *Draft Code of Construction Practice*, Volume 5: Appendix CT-003-000



## **1.3 Delivering the Strategy through the hybrid Bill**

- 1.3.1 Approval and powers to construct and operate the Proposed Scheme are being sought through a hybrid Bill, the High Speed Rail (West Midlands-Crewe) Bill.
- 1.3.2 Schedule 17 of the hybrid Bill provides for plans and specifications to be approved by the relevant planning authority, including for the excavation of bulk material from borrow pits. The land required for the borrow pits is specified in Schedule 6 of the Bill, except where that land is within the limits of a scheduled work.
- 1.3.3 The excavation of material from a borrow pit cannot commence until a scheme for restoration of the land (which may include aftercare) has been approved by the relevant planning authority. These restoration schemes will include detailed designs, specifications and schedules for implementation of the restoration and aftercare of the borrow pits.
- 1.3.4 Following extraction of construction materials from the borrow pits, the land will be restored to a condition suitable for its previous use, generally agriculture. If any other future uses are proposed, these will require separate planning applications and environmental assessment, if necessary.
- 1.3.5 Schedule 32 of the hybrid Bill requires approval from the relevant body, either the Environment Agency or Lead Local Flood Authority, for works such as water abstraction and discharges, which may affect the water environment. These works, which could affect the water environment, cannot commence until the relevant body is satisfied that any impacts are properly understood and that any necessary mitigation and monitoring has been adopted.

## **1.4 Engagement process**

- 1.4.1 The Strategy forms part of the ES, which will be subject to formal consultation by Parliament. The public and regulatory bodies, such as Staffordshire County Council, Cheshire East Council, the Environment Agency, Natural England and other stakeholders will be able to comment, at this stage. There will be further consultation with a wide range of relevant stakeholders as part of the preparation of the site specific restoration plan for each borrow pit.

## 2 Description of borrow pits

### 2.1 Site selection

- 2.1.1 The borrow pit locations have been selected by identifying areas that are most likely to contain suitable material types, using geological maps and historical borehole records, and which were in a suitable location to meet the requirement for the sustainable transport of the extracted materials to and from the construction works.
- 2.1.2 Further refinement of the borrow pit locations and layouts was then undertaken to reduce impact, where reasonably practicable, on residential properties and other environmentally sensitive receptors.

### 2.2 Borrow pit locations

- 2.2.1 The number of borrow pits and their locations have been selected to ensure that, as far as reasonably practicable, material is excavated as close to where it will be needed in order to reduce the length of site or road haulage and the need for double handling.
- 2.2.2 The locations of the six borrow pits, which are currently predominantly in agricultural use, are shown in Figure 1 and, in more detail, in Figures 2 to 6 in Annex A. Four of the borrow pits are located within the River Terrace Deposits in the southern section of the Proposed Scheme. The other two are located within the glaciofluvial deposits in the northern section of the Proposed Scheme.
- 2.2.3 Site specific ground investigations have yet to be undertaken, therefore, this Strategy is based on preliminary assumptions of the yield of granular material. The borrow pit design and site specific restoration plans will be developed further, once ground investigation has been undertaken, as an early part of the detailed design for Proposed Scheme.
- 2.2.4 A preliminary appraisal of the locations of the borrow pits has been carried out (taking account of the preliminary assumptions of yield) and where appropriate, refinements have been incorporated into the borrow pit layouts. These layouts are the proposed extents of excavation for the borrow pits (subject to confirmation by ground investigation) and are indicated on Figures 2 to 6 in Annex A. The likely significant environmental effects of the borrow pits have been assessed as part of the environmental impact assessment (EIA) and are reported in the ES. The assessments of each borrow pit are reported in the relevant community area reports in Volume 2 of the ES<sup>4</sup>, as noted in Table 1.
- 2.2.5 A summary of each borrow pit in terms of location, approximate size and excavation depths is provided in Table 1.
- 2.2.6 Excavation of sand and gravel to the estimated maximum depths, to avoid sterilisation of mineral resources, for example, would mean excavation could be restricted to less than the full area quoted in Table 1.

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<sup>4</sup> See ES Volume 2, Community area reports: Fradley to Colton (CA1), Whitmore Heath to Madeley (CA4) and South Cheshire (CA5)

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Table 1: Borrow pit location, area and assumed average and maximum excavation depths

Borrow pit location	Community area (CA)	Area (ha)	Assumed average depth of mineral extraction (m) <sup>5</sup>	Estimated maximum depth of mineral extraction (m)
Kings Bromley South, located either side of Crawley Lane and to the south of Ashby Sitch, both sides of the Proposed Scheme	Fradley to Colton (CA1)	35	4.1	12.8
Kings Bromley North, located adjacent to the realigned A515 Lichfield Road	Fradley to Colton (CA1)	12	4.1	8.8
Kings Bromley North, located adjacent to the realigned Shaw Lane	Fradley to Colton (CA1)	19	4.3	8.8
Blithbury, located to the north of the River Trent viaduct	Fradley to Colton (CA1)	20	11.1	15.8
West of Netherset Hey Farm	Whitmore Heath to Madeley (CA4)	28	4.3	17.8
North of Checkley Lane	South Cheshire (CA5)	40	3.8 <sup>6</sup>	—

2.2.7 The total volume of granular material required from the borrow pits for the Proposed Scheme is estimated to be approximately 8.34 million tonnes.

<sup>5</sup> The assumed average and estimated maximum extraction depths include assumed average topsoil and subsoil depths of 0.8m.

<sup>6</sup> If it cannot be confirmed that there is no hydrological connectivity between the proposed borrow pit and Betley Mere SSSI, the extraction of minerals will be restricted to a depth one metre above existing groundwater level.

## 3 Restoration objectives

### 3.1 Introduction

3.1.1 This section sets out the overarching objectives, design principles and environmental provisions that are central to the Strategy.

### 3.2 Objectives of the Strategy

3.2.1 The objectives of the Strategy for the restoration and aftercare of the borrow pits are to:

- restore land to a condition suitable for its original use, post-excavation;
- provide essential mitigation for local environmental effects that occur as a consequence of the use of the borrow pits;
- maximise use of cohesive materials arising from construction of the Proposed Scheme in the restoration process, thus avoiding transportation off site; and
- contribute to addressing the impact of climate change by taking opportunities to mitigate pre-existing and potential future flood risk and water stress risk issues.

### 3.3 Overarching design principles

3.3.1 The borrow pits are an integral element of the Proposed Scheme, and therefore, cannot be considered in isolation from the rest of the Proposed Scheme.

3.3.2 The following design principles apply to the borrow pits and the Strategy:

- all borrow pits will be excavated only for granular material for use within the Proposed Scheme (i.e. not for commercial extraction);
- borrow pits will be backfilled using natural uncontaminated material from Proposed Scheme excavations (including clay / fines which are a by-product of processing the granular material at the borrow pit sites), and restored using subsoil and topsoil stripped from and stored within the Proposed Scheme. Surplus topsoil, whether from within and outside the borrow pit sites, will not be used as backfill. Topsoil and subsoil will normally be stripped and stored separately within the footprint of the borrow pit for use in site restoration;
- it is intended that the borrow pits will be restored to the original ground level and to a condition suitable for their previous land use, except where the land is proposed to be used for other purposes, such as for a replacement floodplain storage area, balancing pond or access track;
- where agricultural uses are to be resumed on land disturbed during the construction of the Proposed Scheme, the design objective is to avoid any reduction in long term capability, which would downgrade the quality of the disturbed land, through the adoption of good practice technique in handling, storing and reinstating soils on that land and to provide a sufficiently deep soil

profile to manage both wetter and drier conditions in the future due to climate change impacts;

- backfill will be compacted as much as necessary to meet the relevant requirements for the intended end use of the land;
- there is currently limited ground investigation data from the borrow pit sites, and therefore the area, volume and suitability of granular mineral for construction uses will be refined as the design develops and site-specific ground investigation data becomes available. The depth and extent of borrow pits assumed may be adjusted in response to environmental factors or construction feasibility during detailed design;
- the hydrogeological regimes are uncertain at this stage, but the need for groundwater control during borrow pit excavation has been assumed;
- it has also been assumed that aggregate screening, and possibly crushing and blending, may be required on site. If washing is necessary, provision for settlement ponds is likely to be required within the borrow pit footprint;
- it is expected that the majority of material excavated from borrow pits will be moved to the place of deposit using site haul routes<sup>7</sup>. However, it will be necessary to use both site haul routes and the public road network to move backfill material, due to the longer distances involved;
- the borrow pits will be excavated for a maximum period of four years, which will include their excavation and backfilling, to be followed by a period of restoration activity. Details of phasing at each borrow pit, which may include progressive restoration, will be developed at detailed design stage; and
- the general commitments to mitigation during construction of the Proposed Scheme are set out in the draft CoCP and, as part of the EMR, will apply to the excavation and restoration of the borrow pits.

3.3.3 Based on the hybrid Bill design for the Proposed Scheme, including the borrow pits, it is anticipated there will be no requirement to import additional materials from outside the Proposed Scheme for backfilling the borrow pits.

## 3.4 Phase 2a hybrid Bill provisions

3.4.1 The Strategy will be implemented in accordance with HS2 Ltd's policies and commitments relevant to the restoration and aftercare of borrow pits. The principal documents that set out those policies and commitments are:

- High Speed Rail (West Midlands – Crewe) Bill;
- EMR, including the draft CoCP;
- High Speed Rail (West Midlands – Crewe) ES;

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<sup>7</sup> Site haul routes are temporary roads provided within the area of land required for construction to allow for the movement of construction material, construction machinery and/or construction workers between the construction compounds and work sites

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- HS2 Ltd Information Papers related to the development of Phase 2a:
  - D12 Borrow pits<sup>8</sup>;
  - E4 Water resources and flood risk<sup>9</sup>;
  - E19 Soil Handling for Land Restoration<sup>10</sup>;
  - D1 Design<sup>11</sup>;
  - E2 Ecology<sup>12</sup>;
  - E13 Management of construction traffic<sup>13</sup>; and
- Landscape Design Approach<sup>14</sup>.

3.4.2 The nominated undertaker and its construction contractors will be subject to these policies and commitments.

3.4.3 An HS2 Phase 2a Farmers and Growers Guide will be provided to all farmers and growers. It sets out how HS2 Ltd and the nominated undertaker will work with agricultural landowners and occupiers.

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<sup>8</sup> HS2 Ltd (2017), High Speed Rail (West Midlands – Crewe), *Information Paper D12 Borrow pits*, [www.gov.uk/hs2](http://www.gov.uk/hs2).

<sup>9</sup> HS2 Ltd (2017), High Speed Rail (West Midlands – Crewe), *Information Paper E4 Water resources and flood risk*, [www.gov.uk/hs2](http://www.gov.uk/hs2).

<sup>10</sup> HS2 Ltd (2017), High Speed Rail (West Midlands – Crewe), *Information Paper E19 Soil Handling for Land Restoration*, [www.gov.uk/hs2](http://www.gov.uk/hs2).

<sup>11</sup> HS2 Ltd (2017), High Speed Rail (West Midlands – Crewe), *Information Paper D1 Design*, [www.gov.uk/hs2](http://www.gov.uk/hs2).

<sup>12</sup> HS2 Ltd (2017), High Speed Rail (West Midlands – Crewe), *Information Paper E2 Ecology*, [www.gov.uk/hs2](http://www.gov.uk/hs2).

<sup>13</sup> HS2 Ltd (2017), High Speed Rail (West Midlands – Crewe), *Information Paper E13 Management of Traffic During Construction* [www.gov.uk/hs2](http://www.gov.uk/hs2).

<sup>14</sup> HS2 Ltd (2017), High Speed Rail (West Midlands – Crewe), *Landscape Design Approach*, [www.gov.uk/hs2](http://www.gov.uk/hs2).

## 4 Site preparation and excavation of the borrow pits

### 4.1 Survey and design

4.1.1 In order to inform both working arrangements and the development of the site specific restoration plans, further surveys will be undertaken, including:

- detailed topographic surveys;
- ground investigations, using boreholes and trial pits, to establish the quality, variability and depth of materials, and the geology;
- evaluation of the presence of soil contamination and, if necessary, ground investigation in order to confirm the full extent of any areas of contamination;
- specific hydrological and hydrogeological investigations using boreholes to establish the appropriate depth of extraction and any necessary mitigation;
- baseline monitoring of groundwater and surface water levels and quality to establish baseline water quality;
- Agricultural Land Classification (ALC) surveys to determine the existing grade of agricultural land;
- soil surveys to determine soil types and properties;
- archaeology surveys; and
- further ecology and landscape surveys, of species, habitats and natural features.

### 4.2 Site preparation

#### *Protection of existing features*

4.2.1 The Proposed Scheme, as shown on Figures 2 to 6, incorporates an offset area of around 25m from the boundaries of the land required to the edge of the extraction area of each borrow pit. This allows for the protection of boundary features, such as hedgerows, utilities and watercourses, and for mitigation planting.

#### *Landscape and ecology*

4.2.2 Within the offset areas, where land is not required for temporary access, existing trees, hedgerows and other habitats will be retained and protected. Where reasonably practicable, trees and hedgerows within the excavation areas will not be removed during the bird nesting season, with site clearance for non-critical design elements phased accordingly. Should works need to be carried out during the bird nesting season, an appropriate working method statement will be completed in advance of clearance works commencing. Relevant protected species and other licences will be obtained (where necessary) from Natural England in advance and following recognised best practice.

### *Archaeology and cultural heritage*

- 4.2.3 No buildings will be required to be demolished within the extents of the borrow pits.
- 4.2.4 A programme of archaeological investigation works will be developed in accordance with the draft CoCP to apply to each borrow pit. Investigation and recording may include archaeological excavation and, if required, the in-situ preservation of assets. In the circumstance, that further archaeological surveys show that valuable archaeological finds cannot be avoided, they will be removed in accordance with the principles, standards and techniques outlined in the draft CoCP.

### *PRoW*

- 4.2.5 Temporary diversions of PRoW are shown on Figures 2 to 6. Any PRoW within the proposed working area will be diverted to a safe route around the borrow pit.

### *Materials Handling*

- 4.2.6 Any waste material will be removed from site for reuse, recycling, recovery or disposal. Topsoil and subsoil will be stripped down to the top of the subsoil layer and base of the subsoil layer respectively and stored in accordance with best practice. The surfaces of stockpiled material will be formed to prevent degradation of the material and will be managed to control weed growth. Stockpiles will be kept away from sensitive features, as far as reasonably practicable. Otherwise, stockpiles are likely to be placed around the site boundary, where they can help to provide temporary noise and visual screening.

### *Water resources*

- 4.2.7 As far as reasonably practicable, the borrow pits have been located to avoid watercourses. The offset areas have been included to protect existing watercourses around the boundaries. In the few cases, where watercourses are within or adjacent to borrow pits, construction measures will be designed and implemented to protect them. Such measures may include temporary channel realignment to prevent loss of water into the excavation. In cases such as these, temporary diversion channels will aim to comprise equivalent hydraulic capacity and hydromorphological condition as the existing watercourse.
- 4.2.8 Where watercourse realignments are required, soft engineering techniques (such as the use of pre-seeded geotextile mats and vegetation rolls) will be applied, where reasonably practicable.
- 4.2.9 Watercourses that require horizontal realignment will generally be constructed by:
- temporarily fencing around the route of the realignment;
  - excavating the realigned channel to the required level, leaving existing ground at each end (a 'plug'), or installing sheet pile walling, sufficient to prevent inflow from the existing watercourse;
  - stabilising the side slopes and channel;
  - lining the channel invert, if required;
  - sealing with clay or constructing a concrete base and walls, if required;



- removing plugs or sheet pile walls, allowing water to flow into the realigned channel;
- sealing up the ends of the original watercourse and backfilling the channel with suitable material; and
- landscaping or finishing as required.

4.2.10 Site activities and working methods will be managed so as to protect the quality of surface water and groundwater. The quality, rate and volume of runoff will be controlled and monitoring systems will be used during the construction works. Emergency procedures will be implemented to deal with the risk of pollution incidents.

### *Soil stripping*

4.2.11 Topsoil and subsoil will be stripped and stored for reuse prior to excavations as set out in the draft CoCP and HS2 Ltd Information Paper E19 Soil Handling for Land Restoration.

4.2.12 Soil Resource Plans will be prepared for each farm holding affected by a borrow pit. The Soil Resource Plans will be based on detailed soil survey and will show the areas and types of topsoil and subsoil to be stripped, the site haul routes, the methods to be used, the location and type of each stockpile and the specification for the restored soil profile in each area.

4.2.13 Topsoil and subsoil stripped for later reinstatement will be stored in stockpiles within the land required for the Proposed Scheme, generally within the perimeter of the borrow pit areas. Stockpile heights for topsoil will be limited to approximately 2m and those for subsoil up to 5m, placed with a 2m clear margin between, for separation and runoff drainage.

4.2.14 Where the borrow pit boundary is in proximity to shallow services and/or utilities, stockpile heights and locations will be reviewed during detailed design to ensure the additional load will not damage the existing infrastructure.

## **4.3 Excavation**

4.3.1 The borrow pits will be excavated in accordance with good practice as set out in the draft CoCP.

### *Phasing of extraction and backfill*

4.3.2 Material from the borrow pits will be excavated to meet the Proposed Scheme construction programme. In some cases, this will mean both excavation and restoration will be phased during construction, but in some cases this may not be practicable.

4.3.3 Material excavated from elsewhere in the Proposed Scheme may have to arrive at the borrow pit location before it can be backfilled. In these cases, a temporary stockpile may need to be formed on a topsoil stripped area of the borrow pit, so that it can be backfilled as soon as possible and prepared for restoration. Four of the borrow pits are partly within areas designated by the Environment Agency as flood zone 3 and, where reasonably practicable, stockpiles will be sited outside flood zone 3.

- 4.3.4 Excavation may be phased by zones, where sufficient space has been retained adjacent to each zone for stockpiling backfill material until the zone is depleted. The exact size and number of zones will be investigated further during detailed design. Excavated material may be temporarily stockpiled on site prior to use.
- 4.3.5 The Proposed Scheme will not include the use of contaminated soils as backfill to the borrow pits. The intentional mixing of contaminated/uncontaminated soils as a means of remediation will not be permitted.

#### *Material handling*

- 4.3.6 Materials will be handled in accordance with the Defra Construction Code of Practice for the Sustainable Use of Soils on Construction Sites (2011) and HS2 Ltd Information Paper E19 Soil Handling for Land Restoration.
- 4.3.7 The stockpiling of material will help to reduce the need for the additional handling of excavated material, particularly soils. The Strategy, generally, seeks to minimise the impact on soils during handling to reduce risks associated with soil degradation on areas of land to be returned to agriculture. Successful soil handling is dependent upon movements being undertaken under appropriate weather and ground conditions using the correct equipment.
- 4.3.8 Topsoil will be handled and stored separately from subsoil. As a general rule, the soil will be handled in the driest condition possible when it is stripped and goes into the stockpile, and stored in such a way that it remains relatively dry and in a suitable state for excavation and re-spreading at the end of the storage period.

#### *Monitoring of water resources*

- 4.3.9 During excavation, monitoring of water quality, flow and levels will be undertaken in order to determine the effectiveness of mitigation measures needed to limit pollution risk. Watercourses and/or groundwater receiving surface water runoff will be monitored to enable the effectiveness of treatment and other sustainable drainage systems measures to be determined and to ensure that an unacceptable rise in groundwater levels does not occur.

## 5 Restoration principles

### 5.1 Approach to restoration

- 5.1.1 The key principle of environmental design for restoration is to provide a landscape that is able to serve the same function as it did before the construction process began, in relation to agricultural land, water, landscape (including the historic landscape) and ecology.
- 5.1.2 It is proposed that the borrow pits will be made available to be returned to their original land use, which is predominantly agricultural land. Other engineering uses, such as balancing ponds or access tracks necessary to the Proposed Scheme, are proposed within the extent of the borrow pit in a limited number of locations.
- 5.1.3 The proposed after uses will not include any formal public access to the borrow pit areas, other than on existing public rights of way (PRoW) and any proposed diversion of those routes, shown on Figures 2 to 6.

### 5.2 Materials to be used for backfill

- 5.2.1 The material within the Proposed Scheme proposed for use as backfill for the borrow pits is anticipated to be predominantly cohesive material.
- 5.2.2 There may also be a need for granular material to be added as part of mitigation works during restoration, for example, to create gravel drains or drainage layers. These will be confirmed during detailed design.
- 5.2.3 Cohesive backfill material is likely to have a lower intrinsic permeability than the original granular material assumed to be present at the borrow pit locations. The order of magnitude of this change will be confirmed at a later date with site specific ground investigation and with reference to changes that will occur in groundwater levels. Section 6.6 describes the approach to mitigating adverse effects on water resources and flood risk.
- 5.2.4 A specification detailing the acceptable backfill material properties will be defined at detailed design.
- 5.2.5 It has been assumed that all borrow pits will be backfilled to approximately 800mm below their original ground level, plus any allowances for long term settlement, using material obtained from Proposed Scheme excavations. The remaining 800mm will be completed, using approximately 500mm subsoil and 300mm topsoil. The actual depths of topsoil and subsoil replaced will need to be confirmed at detailed design stage. The design objective is to avoid any reduction in long term capability, which would downgrade the quality of land restored to agriculture and to provide a sufficiently deep soil profile to manage both wetter and drier conditions in the future due to climate change impacts.
- 5.2.6 The thicknesses of reinstated subsoil and topsoil layers may also be adjusted to match the quality of the land disturbed, with reference to the original ALC grades.

## 5.3 Management and placement of backfill material

- 5.3.1 Placement of fill materials will be carried out in accordance with appropriate technical specifications.
- 5.3.2 During backfilling, records will be kept to provide confidence to owners and occupiers about the quality of backfill materials.
- 5.3.3 The backfill specification to be developed at detailed design may require testing of fill from stockpiles or before placement to confirm material properties and placement requirements. In addition, verification testing of the as-placed fill may be required to confirm the quality of the end-product. These requirements will be developed as part of the Earthworks Specification for the Proposed Scheme.
- 5.3.4 A series of topographical surveys of each borrow pit covering its full extent and depth will be carried out, including, as a minimum, a survey of the existing levels before excavation, a survey of the base of the excavation and an as-restored survey at the end of construction.
- 5.3.5 Trafficability<sup>15</sup> and placement of cohesive materials are likely to be more difficult in the winter months, especially during wet weather, and therefore, backfilling operations may have to be limited to drier months or drier weather.
- 5.3.6 The backfill will be compacted as appropriate taking account of the stability requirements of the restored use. Some long term settlement of the backfill is to be expected.
- 5.3.7 Generally, backfill will be placed in an appropriate way and differential settlement is not expected to be a concern across each borrow pit. The following will be given further consideration during detailed design once the depth of deposit and excavation depths are confirmed:
- differential settlement as a result of varying depths of excavation and consequently backfill in different 'zones' across the site; and
  - interfaces between the backfill and other engineering, for example access tracks, pipe work for balancing ponds and any utilities.

## 5.4 Restoration for agricultural use

- 5.4.1 Where agricultural uses are to be resumed on land disturbed during the construction of the Proposed Scheme, the design objective is to avoid any reduction in long term capability, which would downgrade the quality of land restored to agriculture and to provide a sufficiently deep soil profile to manage both wetter and drier conditions in the future due to climate change impacts.

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<sup>15</sup> The capability of a soil to bear traffic (vehicles, livestock or people) without causing any physical damage to it or impairing its functions

## 5.5 Soil reinstatement

- 5.5.1 The soil will be in the driest condition possible when it is reinstated. This will enable the restored soil profile to promote sufficient aeration, drainage and root growth, which are all necessary for the soil to re-establish its long-term structure.
- 5.5.2 Following reinstatement of the soil profiles and during an aftercare period of generally up to five years, the land will be subsoiled prior to the installation of underdrainage (where this is required) to loosen any below-ground compaction and any surface debris removed. During this period, samples will be collected for nutrient analysis to inform the choice of cropping and fertiliser and organic matter applications. The land will then be cultivated and seeded using standard agricultural equipment for its first crop. The choice of crop/vegetation will vary by site but will need to be agreed with the occupiers. This will take account of the condition of the restored land, the analysis of nutrients, pH and organic matter content, farm practice and the availability of suitable equipment and facilities on the individual farm holdings.

## 5.6 Management of water resources and flood risk

- 5.6.1 The Strategy sets out principles for the active management of surface water, groundwater and flood risk. Groundwater and surface water levels, flow and quality will be managed in accordance with the measures described in the draft CoCP.
- 5.6.2 Four of the borrow pits are partly within flood zone 3. The performance of the floodplain in attenuating peak river flows will be maintained through restoration of land to previous levels. The exception to this is the borrow pit near Kings Bromley North, located adjacent to the realigned Shaw Lane, in CA1, which currently includes a proposed replacement floodplain storage area. This site will not be backfilled to its original level in this area.
- 5.6.3 On restoration, existing baseflow and catchment runoff characteristics will be maintained for surface water features. Similarly, the groundwater regime will maintain baseflow connectivity with the surface water regime. This will be achieved through appropriately designed drainage systems to control groundwater levels to sustain groundwater baseflow to nearby watercourses and the treatment and recirculation of any surface water runoff into the downstream catchment at an appropriate rate and location.
- 5.6.4 Ground investigation and environmental monitoring data will be used to inform the site specific restoration plans, which may require integrated surface water and groundwater drainage systems. These will be prepared in consultation with the EA. These will include piped underdrainage systems, if considered necessary to achieve the required standards of restoration for the agricultural use of the land. Where temporary watercourse channel realignments have been provided, these will, as far as reasonably practicable, be reinstated to their original channels and condition.
- 5.6.5 The borrow pits will be backfilled with cohesive material likely to have lower intrinsic permeability than the material to be extracted. Post restoration monitoring will determine whether drainage will be required should backfill be shown to be impeding groundwater flow. Measures could include the incorporation of passive bypasses within the design, which could comprise a 'blanket' or trench network of permeable material, such as gravel, allowing groundwater to bypass any hydraulic barriers.

## 5.7 Landscape and ecology

### *Landscape*

- 5.7.1 HS2 Ltd seeks to restore landscapes that are disturbed in a sympathetic and appropriate manner consistent with the relevant Landscape Character Area. Appropriate mitigation proposals are set out in the ES. These landscape and planting proposals will be developed further during detailed design.

### *Restoration contours*

- 5.7.2 The Proposed Scheme includes the intention to backfill the borrow pits to the original ground level, except for the borrow pit near Kings Bromley North, which includes a proposed replacement floodplain storage area.
- 5.7.3 Restoration contours will be refined during detailed design in response to final excavation design, volume of materials available for restoration, any expected settlement and further information on groundwater levels and geology.
- 5.7.4 Although the existing landform at the borrow pit sites is fairly level, with the exception of the borrow pit north of Checkley Lane (see Figure 6), the restoration contours will create shallow gradients, of less than 1 in 8, to facilitate drainage of the restored land and minimise opportunities for surface water ponding.

### *Planting schemes*

- 5.7.5 Landscape planting and seeding will be refined during detailed design in response to final excavation design, the volume of materials available for restoration and further information on after use and groundwater levels and geology.
- 5.7.6 Planting and other landscape measures will be implemented as early as is reasonably practicable where there is no conflict with construction activities or other requirements of the Proposed Scheme, in accordance with the draft CoCP.

### *Habitat establishment*

- 5.7.7 HS2 Ltd has committed to the objective of achieving no net loss in biodiversity across the Proposed Scheme and, as such, it is anticipated that the borrow pits will be restored to a standard where the ecological condition of these areas is at least as good as it was prior to the excavation.
- 5.7.8 Typically, this involves restoring features such as hedgerows and field trees, pasture (including grassland margins to arable operations), and water bodies to their previous or equivalent condition, including incorporating physical linkages in order to maintain connectivity between these features where that previously existed.
- 5.7.9 Given the loss of such features during excavation, it may be appropriate to restore them to a better condition than existing, in order to aid in achieving the goal of no net loss in biodiversity. This would typically involve small-scale measures, for example, by:
- including a greater number of native species of biodiversity value than were previously present; and
  - improving the slope profiles of replacement ponds so that they can better provide for protected species.

- 5.7.10 Habitat features (for example, hedgerows) lost from the borrow pit areas will be replaced where reasonably practicable. The specific locations of replacement habitats will be determined following detailed assessment. The design intention will be to replicate the local conditions that gave rise to the original features, for example, a natural dip in the ground which was fed by surface water runoff to become a pond, with the replacement features then left to develop naturally as habitat. To this end, the new habitats will be integrated into the landscape design.

#### *Field pattern and boundaries*

- 5.7.11 The restored field pattern and boundaries will replicate the existing field pattern, where reasonably practicable.

#### *Access tracks and PRow*

- 5.7.12 Access tracks will be provided as appropriate for the future use.
- 5.7.13 Permanent diversions of PRow are shown on Figures 2 to 6. Where PRow have been diverted during excavation, they will be reinstated to a suitable route on restoration.

## **5.8 Aftercare**

- 5.8.1 HS2 Ltd has committed to an aftercare period of generally up to five years following completion of restoration of each borrow pit. An aftercare plan will be set out in the site specific restoration plan for each borrow pit. An extended period may apply where ecological mitigation has been provided, or for land restored to agriculture where this is agreed with landowners or occupiers. This may include monitoring of climate change effects. The period of extended aftercare will be of sufficient length to ensure the long term compensation objectives for any target species.
- 5.8.2 The preparation of aftercare plans will be undertaken by HS2 Ltd or the nominated undertaker, in consultation with stakeholders. A process for agreeing the satisfactory completion of each year's works prior to commencement of the subsequent year of aftercare will be set out in the site specific restoration plans.
- 5.8.3 The method of aftercare delivery at the borrow pits will be determined on an individual basis reflecting land use.

## **5.9 Monitoring**

- 5.9.1 It is anticipated that there will be a period of monitoring of the success of restoration and aftercare works. Whilst the exact nature and extent of monitoring will be agreed with the appropriate qualifying authorities, it will include monitoring newly created habitats.
- 5.9.2 In respect of restored agricultural land where the temporarily displaced soils have been reinstated and supplemented with any surplus soils from elsewhere in the Proposed Scheme, soil drainage and moisture retention will be monitored after the five year aftercare period to ensure that the potential and desired soil profile characteristics have been achieved.

## 6 Compliance with national and local planning policy

- 6.1.1 The Strategy has been developed in accordance with relevant minerals planning policy and related guidance. This section sets out the planning policy framework that supports the principles of the Strategy and will help inform the site specific restoration plans for the borrow pits. The site specific restoration plans will form part of the plans, specifications and construction arrangements submitted for approval by the relevant qualifying authorities.
- 6.1.2 The Strategy has been considered against the provisions of the National Planning Policy Framework (NPPF) March 2012 and the relevant development plans. The NPPF sets out the Government's planning policies for England and how these should be applied. Local Plans need to be consistent with the principles and policies set out in the NPPF, including the presumption in favour of sustainable development. The Strategy is also considered against relevant advice in the National Planning Policy Guidance (NPPG) 2014.
- 6.1.3 The borrow pits are located in Lichfield District and Newcastle-under-Lyme Borough in Staffordshire and in Cheshire East. The development plans which contain policies specifically relevant to minerals restoration comprise:
- Staffordshire County Council, The Minerals Local Plan for Staffordshire (2015 to 2030) (adopted February 2017); and
  - Cheshire County Council, The Cheshire Replacement Minerals Local Plan (adopted 1999 - saved policies).
- 6.1.4 Where development plan policies are referred to, these are set out in full in Annex B.
- 6.1.5 Cheshire East Council has begun the preparation of a Minerals and Waste Development Plan, which will replace the saved policies of the Cheshire Replacement Minerals Local Plan.

### 6.2 NPPF and other national policy guidance

- 6.2.1 The NPPF sets out the Government's approach to planning matters and is a material planning consideration. Paragraph 144 of the NPPF recognises that mineral sites should be restored at the earliest opportunity to high environmental standards. This is a central tenet of the Strategy.
- 6.2.2 The NPPF is supported by the NPPG. The relevant section is the Guidance on the planning for mineral extraction in plan making and the application process<sup>16</sup>. Paragraph 40 states that the 'level of detail required on restoration and aftercare will depend on the circumstances of each specific site including the expected duration of operations on the site. It must be sufficient to clearly demonstrate that the overall objectives of the scheme are practically achievable' (Paragraph: 040 Reference ID: 27-

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<sup>16</sup> Department for Communities and Local Government (2014), *Guidance on the planning for mineral extraction in plan making and the application process*, <https://www.gov.uk/guidance/minerals>.



040-20140306). This provides the flexibility that for long term proposals, a restoration strategy may be sufficient to demonstrate that the proposals are practically achievable. In such circumstances detailed restoration plans are required to be submitted at a later stage. This approach accords with the provisions in the High Speed Rail (West Midlands – Crewe) Bill.

## 6.3 Statutory development plan policy

- 6.3.1 The main policy driver in developing the Strategy is Policy 6 of The Minerals Local Plan for Staffordshire (2015 to 2030), referred to as 'Policy 6' hereafter. Not only are five of the six borrow pits located in Staffordshire, but policies contained in the Cheshire Replacement Minerals Local Plan (1999) predate the NPPF. Policy 41 (Restoration) of the Cheshire Replacement Minerals Local Plan contains high level policy on the required standard of restoration supported by other policies on landscape (Policy 15), nature conservation (Policy 23), agricultural land (Policy 29) and PRoW (Policy 33). Even taken together these policies do not contain the same level of detail as Policy 6.
- 6.3.2 As noted in Section 6.1, Cheshire East Council is preparing a Minerals and Waste Development Plan. The new plan will need to comply with paragraph 143 of the NPPF, which requires that in relation to minerals, local plans should set out environmental criteria (as defined in the NPPF) against which proposals will be assessed and put in place policies to ensure worked land is reclaimed at the earliest opportunity.
- 6.3.3 It is reasonable to expect that emerging policy for Cheshire East will be similar to that contained in Policy 6 and this has been assumed in drawing up the Strategy.
- 6.3.4 Taking the relevant criteria of Policy 6 in turn, it can be clearly demonstrated that the Strategy follows the principles set out in development plan policy. Policy 6 is set out in full in Annex B.

### **Proposals for the restoration of mineral sites are sufficiently comprehensive, detailed, practicable and achievable within the proposed timescales (Policy 6.2)**

- 6.3.5 Policy 6.2 requires that restoration proposals are sufficiently comprehensive, detailed, practicable and achievable. It allows for long term proposals to rely on a restoration strategy in the first instance, in order to demonstrate that the proposals are practically achievable supported by site specific restoration plans at a later stage. The Strategy is in full accordance with this approach and paragraph 40 of the NPPG.

### **The land affected at any one time would be minimised by phased restoration (Policy 6.2(a))**

- 6.3.6 The Strategy makes provision for the phased excavation, backfilling and progressive restoration of each borrow pit to a condition suitable for a return to existing land use. This will ensure that the land affected at any one time will be minimised in accordance with policy.

**The amount of imported backfill is the minimum necessary to achieve satisfactory restoration (Policy 6.2(b))**

- 6.3.7 The Strategy is clear that the Proposed Scheme has no requirement to import materials for backfilling and as such is in accordance with policy.

**Sufficient backfill materials are likely to be available to restore the site within an acceptable timescale (Policy 6.2 (c))**

- 6.3.8 As the borrow pits are to be backfilled from the using material extracted from the Proposed Scheme this will ensure timely restoration is achieved in accordance with policy.

**The long term potential of best and most versatile agricultural land is safeguarded and the soil resources conserved (Policy 6.2 (d))**

- 6.3.9 The borrow pit sites are all currently predominantly in agricultural use. A primary objective of the Strategy is to reinstate land to its existing agricultural grade. A clear aim of the Strategy and design objective is to avoid any reduction in long term capability, which would downgrade the quality of the disturbed land, through the adoption of good practice and to provide a sufficiently deep profile to manage both wetter and drier conditions in the future due to climate change impacts. The Strategy is in accordance with policy, which requires that the best and most versatile agricultural land is safeguarded and that soil resources are conserved.

**The flood risk is not increased and opportunities to reduce flooding maximised (Policy 6.2 (e))**

- 6.3.10 A key objective of the Strategy is to take opportunities to mitigate pre-existing and potential future flood risk and water stress risk issues. The Strategy seeks to ensure that there are no significant effects on flood risk. Part of the restored land is proposed as replacement flood storage in CA1 in accordance with the objective of the Strategy and policy.

**The restoration enhances the natural environment and net gains in biodiversity achieved (Policy 6.2 (f))**

- 6.3.11 The Strategy reiterates the objective of achieving no net loss in biodiversity across the Proposed Scheme. As a consequence, the borrow pits will be restored to an ecological condition at least as good as it was prior to the works. Should further mitigation measures be required by the Proposed Scheme as a whole, the restoration of the borrow pits presents an opportunity to contribute to those requirements. The policy construct acknowledges that this objective may not be relevant in all cases. There is no tension between this policy objective and the commitments in the Strategy.

**The restoration enhances valued landscapes, the setting of heritage assets and is informed by and sympathetic to landscape character (Policy 6.2 (g))**

- 6.3.12 The Strategy intends to restore the landscape in a manner that is consistent with and informed by landscape character assessment in order to ensure that the restoration proposals integrate successfully into the surrounding landscape in accordance with the policy.

- 6.3.13 The Strategy will be delivered in accordance with the Heritage Memorandum, which will be part of the EMR. This seeks to limit the impact on the historic environment and address the elements of works that will have a direct impact on heritage assets. The site specific restoration plans will be informed by further surveys and investigation of archaeology and built heritage prior to the start of the works to further ensure that the restoration proposals are in accordance with policy.

**The aftercare provision is sufficient to secure high quality and sustainable restoration of the site (Policy 6.2 (h))**

- 6.3.14 The Strategy sets out a commitment to an aftercare period of five years following completion of restoration of each borrow pit. An extended period may apply where ecological mitigation has been provided, or for land restored to agriculture where this is agreed with landowners.
- 6.3.15 Aftercare will be for a period of sufficient length to ensure high quality and sustainable restoration in line with the requirement in policy.

**Opportunities to increase the provision of public access, public open space, recreational and sporting facilities are maximised (Policy 6.2 (i))**

- 6.3.16 The proposed after uses do not include any formal public access, other than on the existing PRoW. HS2 Ltd's commitment to restore the land to be suitable for its previous agricultural use may not provide any opportunities for public access and recreation.

**Proposals support the Water Framework Directive (WFD) objectives (Policy 6.2 (j))**

- 6.3.17 The Strategy supports the objectives of the WFD to protect groundwater and surface water. It contains specific measures to prevent any further deterioration of groundwater and surface water resources (for example, the reinstatement of watercourses to their original channels) to ensure compliance with the WFD<sup>17</sup> and in accordance with policy.

## **6.4 Conclusion**

- 6.4.1 The Strategy has been drawn up taking full account of good practice both in relation to mineral working and restoration. It show that the restoration proposals will be practically achievable and in line with the relevant policy guidance.

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<sup>17</sup> See Route-wide Water Framework Directive compliance assessment, Volume 5: Appendix WR-001-000

## 7 References

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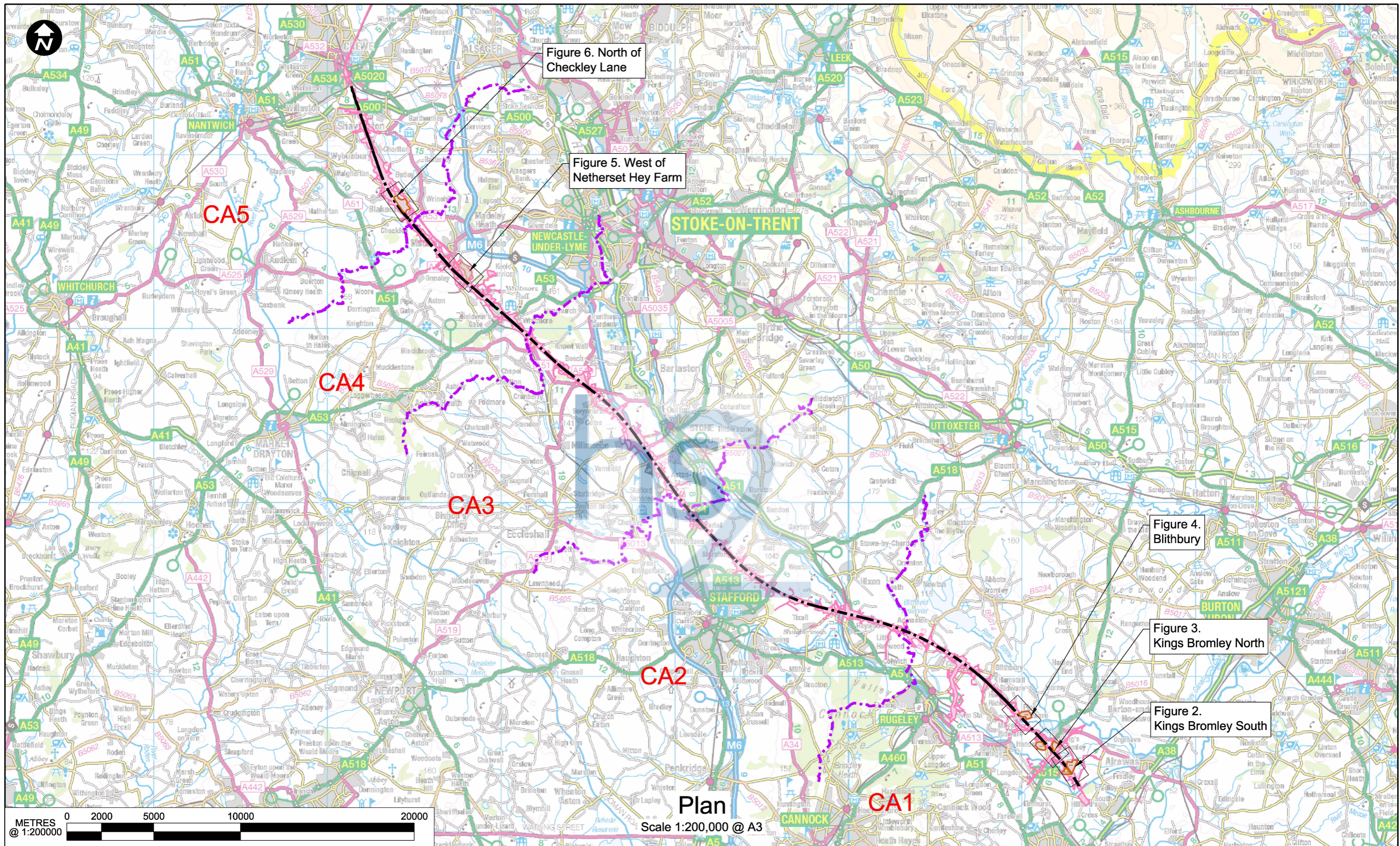
## 8 Glossary of terms

Term	Definition
Aftercare	The ongoing management of the restored site to ensure that the restoration is established, is sustainable and delivers the proposed after use.
Borrow pit	Area within the land required for construction of Phase 2a used for the excavation of construction fills, including surrounding land for associated construction activities and soil storage.
Construction	The works necessary to build the Proposed Scheme.
Detailed design	The process in which the finer details of the design of the Proposed Scheme are developed.
End use	The proposed after use of the restored borrow pit.
Excavation	The removal of construction fills from the borrow pits, including site preparation and the stripping and storage of soils.
Restoration	The works delivered following completion of excavation, including regrading of excavations, the placement and preparation of soils, and landscape treatment.
Site haul routes	Temporary roads provided within the area of land required for construction to allow for the movement of construction material, construction machinery and/or construction workers between the construction compounds and work sites.
Trafficability	The capability of a soil to bear traffic (vehicles, livestock or people) without causing any physical damage to it or impairing its functions.

## 9 List of abbreviations

Abbreviation	Meaning
ALC	Agricultural land classification
BAP	Biodiversity Action Plan
CEC	Cheshire East Council
CoCP	Code of Construction Practice
EIA	Environmental Impact Assessment
EMR	Environmental Minimum Requirement
ES	Environmental Statement
NE	Natural England
NPPF	National Planning Policy Framework
NPPG	National Planning Policy Guidance
PRoW	Public right of way
SCC	Staffordshire County Council
WFD	Water Framework Directive

# Annex A: Borrow pits Figures 1 to 6



Rev	Description	Drawn	Checked	Con App	HS2 App

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Scale with caution as distortion can occur.

Notes:

- All dimensions are in millimetres unless noted otherwise.
- All levels are in metres above ordnance datum unless noted otherwise.

Legend:

- Construction Area
- Borrow Pit
- HS2 Centreline
- Community Area Boundary

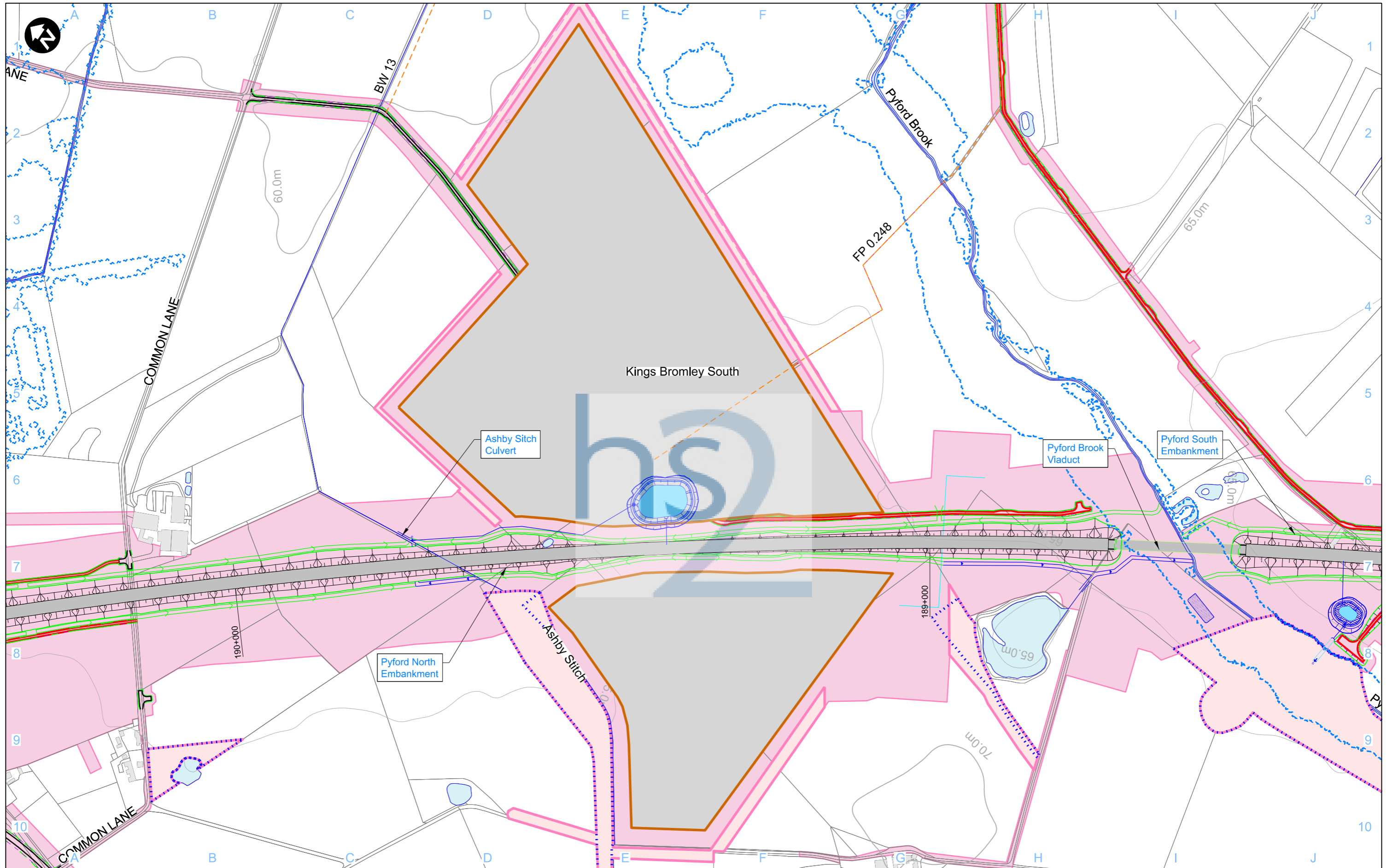
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Creator/Originator  
**Ove Arup & Partners International Ltd**

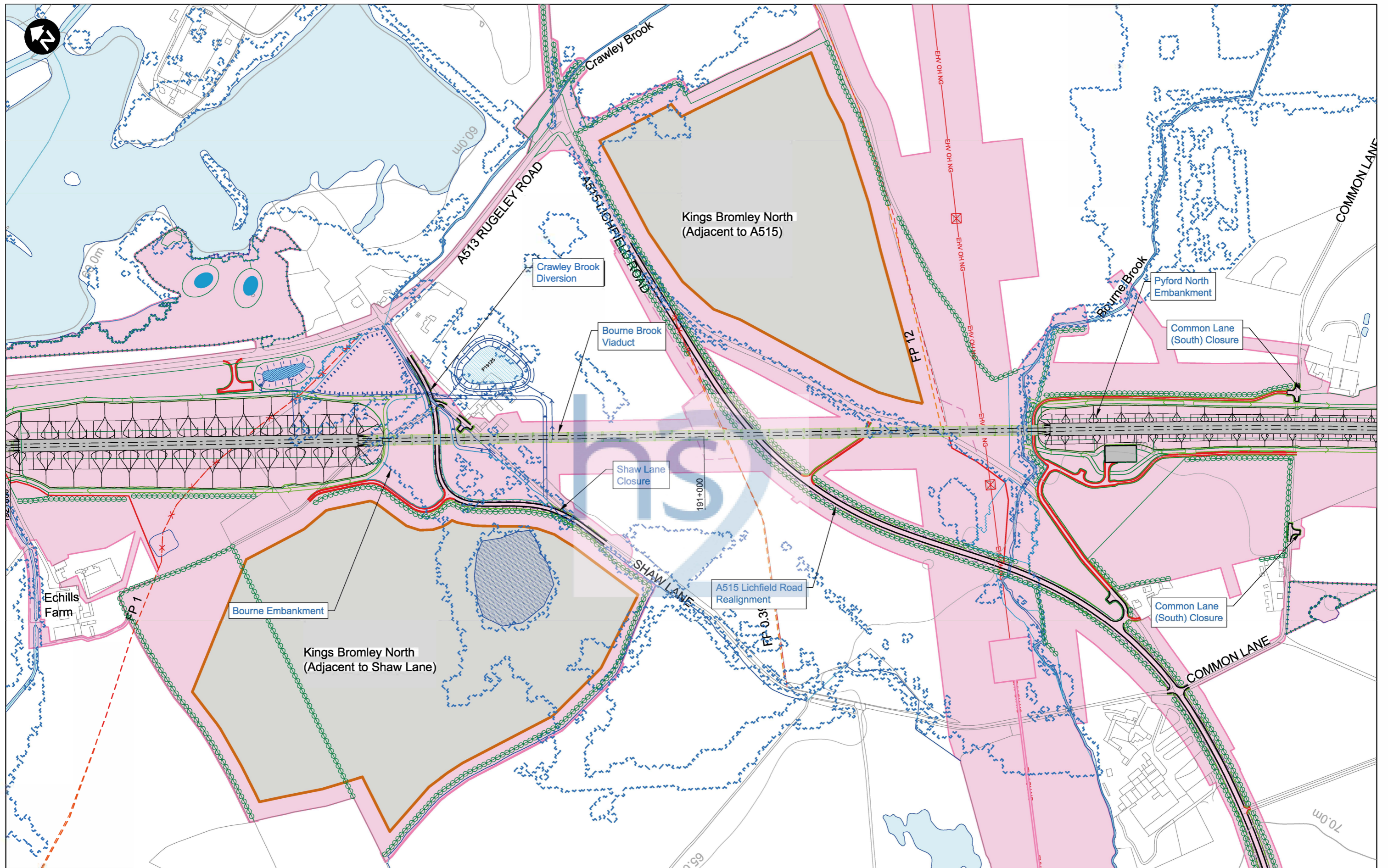
Zone	Route Wide	
Design Stage	Hybrid Bill - Draft Initial Preliminary Design	
Drawing Title	Figure 1 Borrow Pit Location Plan Borrow Pits Restoration Strategy	

Project/Contract	P2A Civils Design & Environmental Services		
Discipline/Function	Geotechnical		
Drawn	Checked	Approved	
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Date	Scale	Size	
01/02/2017	1:20000	A1	
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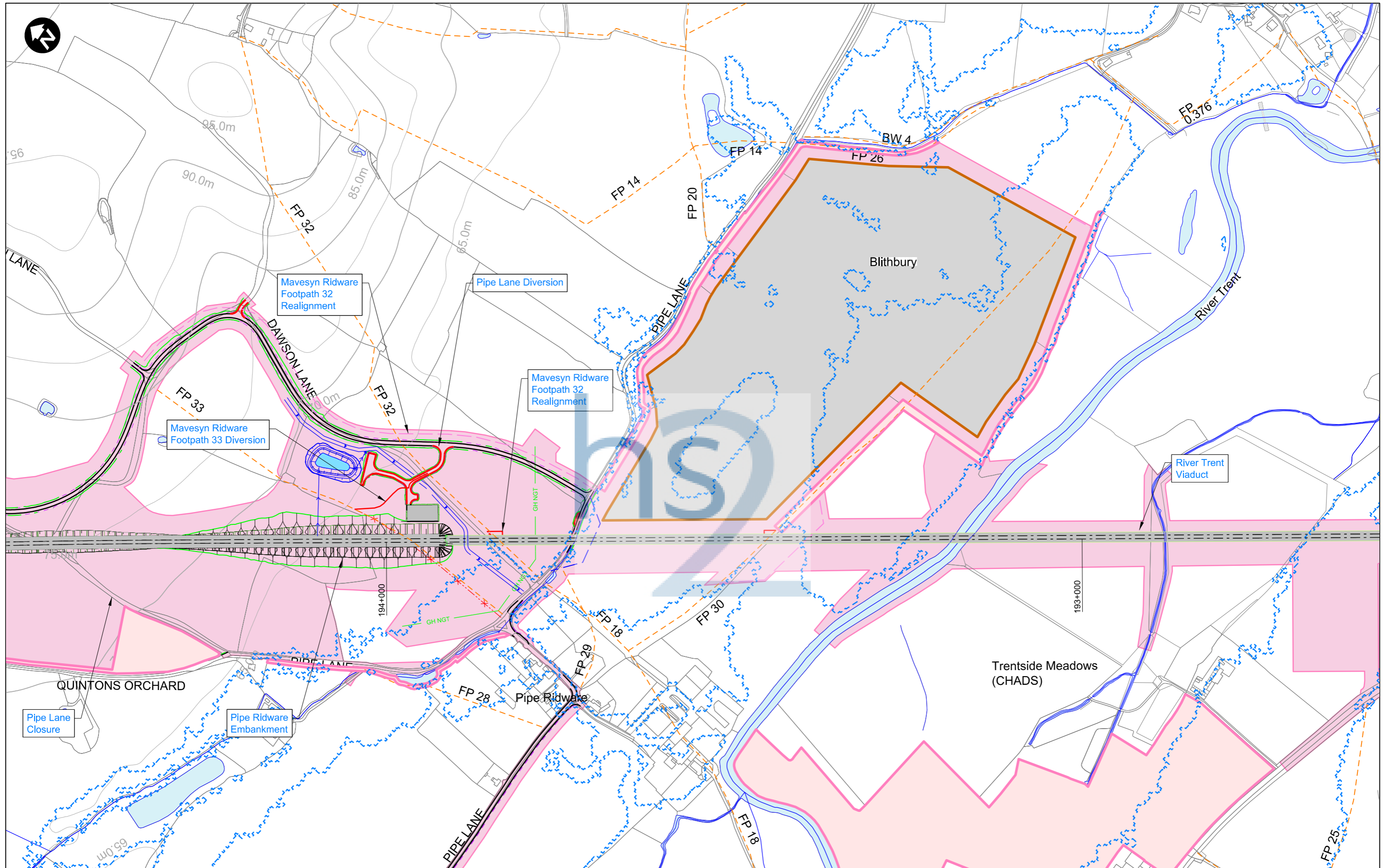




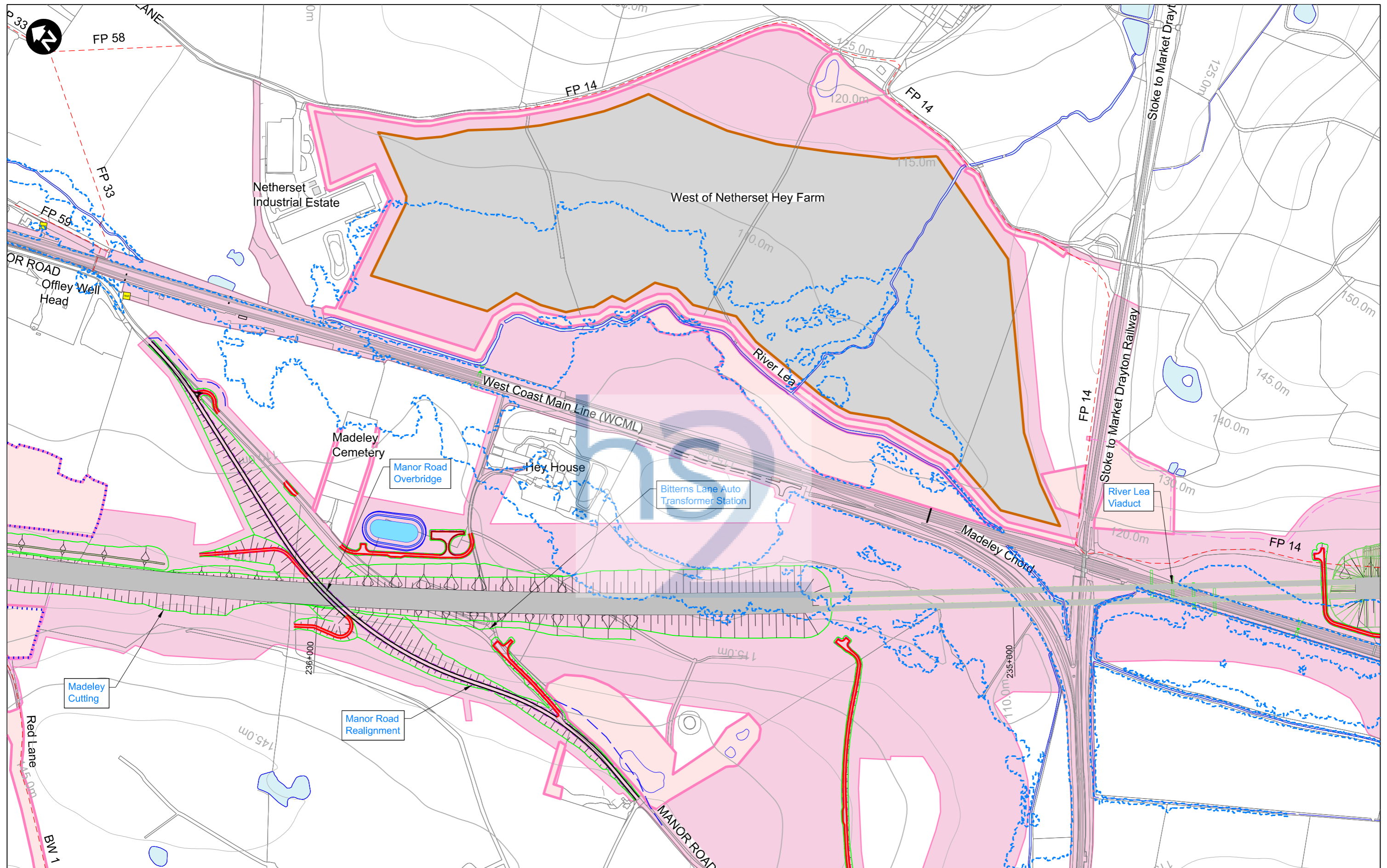
<b>Legend</b> - - - Rail alignment Flood Zone Balancing Ponds Main construction compound Replacement Floodplain Storage Area Borrow Pit Land potentially required during construction Extent of land potentially required during construction for mitigation planting Existing inland water		Community Area boundary Earthworks New Ditch Existing public right of way (PRoW) New, diverted or realigned PRoW Stopped-up PRoW Temporary PRoW diversion / realignment Landscape earthworks Engineering earthworks Earthworks Watercourse Existing contours Rail alignment formation		Map Number Map Name <b>Figure 2</b> <b>Kings Bromley South Borrow Pit</b> Community Area CA1 Fradley to Colton	 HS2 Ltd accept no responsibility for any circumstances, which arise from the reproduction of this map after alteration, amendment or abbreviation or if it is issued in part or issued incomplete in any way. Registered in England, Registration number 06791686 Registered offices: 2 Snow Hill, Queensway, Birmingham, B4 6GA Scale at A3: 1:5,000  © Crown copyright and database rights 2017, Ordnance Survey Licence Number 100049190. <b>Doc Number:</b> C861-ARP-GT-DPL-000-000007 <b>P00.1 Date:</b> 30/06/17
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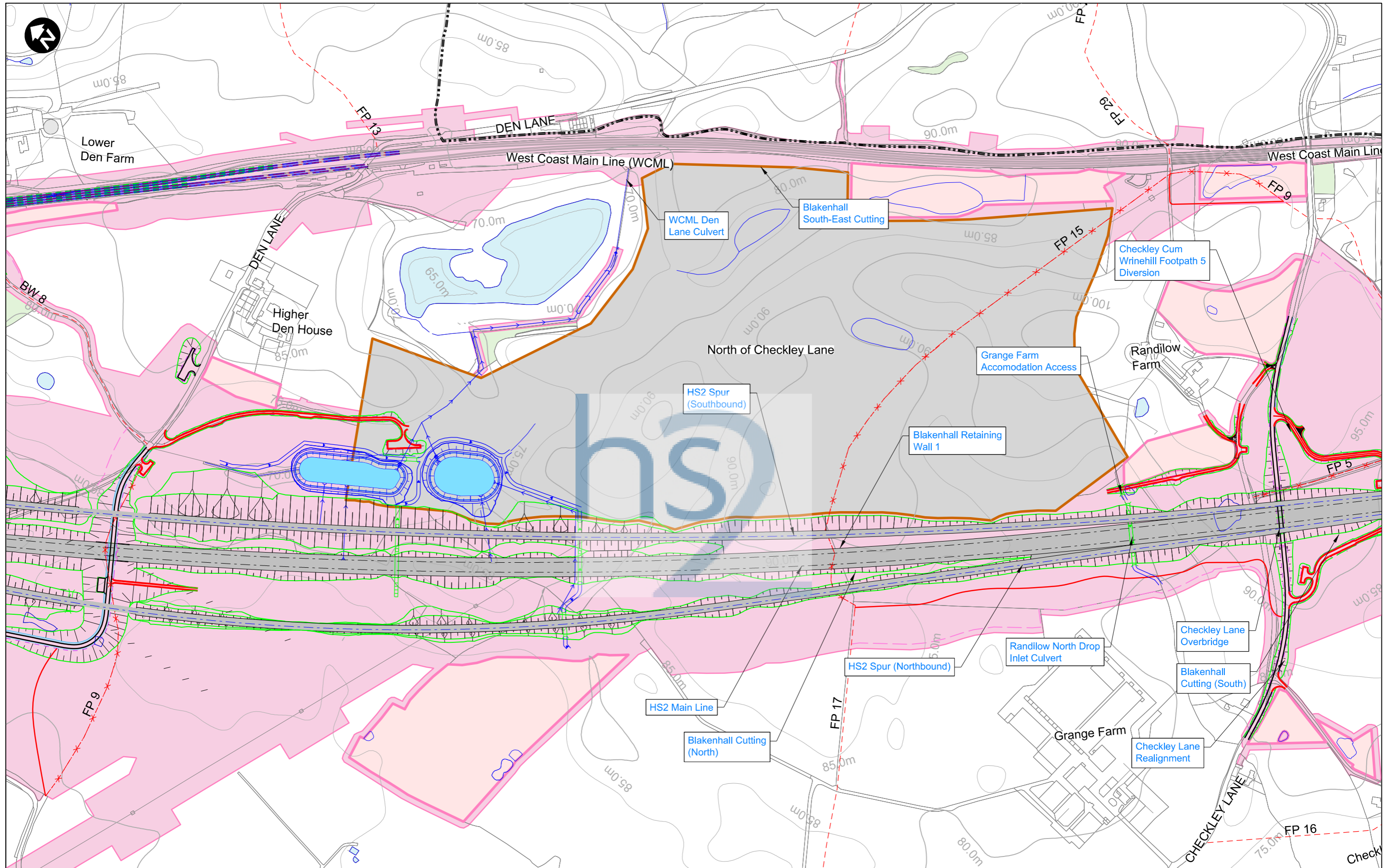
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<b>Legend</b> - - - Rail alignment Flood Zone Balancing Ponds Main construction compound Replacement Floodplain Storage Area Borrow Pit Land potentially required during construction Extent of land potentially required for mitigation planting Existing inland water		Community Area boundary Earthworks New Ditch Existing public right of way (PRoW) New, diverted or realigned PRoW Stopped-up PRoW Temporary PRoW diversion / realignment Landscape earthworks Engineering earthworks Earthworks Watercourse Existing contours Rail alignment formation		Map Number Map Name Community Area	Figure 4 <b>Blithbury Borrow Pit</b> CA1 Fradley to Colton	 Registered in England, Registration number 06791686 Registered offices: 2 Snow Hill, Queensway, Birmingham, B4 6GA Scale at A3: 1:5,000  © Crown copyright and database rights 2017. Ordnance Survey Licence Number 100049190. Doc Number: C861-ARP-GT-DPL-000-000010 P00.1 Date: 30/06/17
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<b>Legend</b> - - - Rail alignment Flood Zone Balancing Ponds Main construction compound Replacement Floodplain Storage Area		Borrow Pit Land potentially required during construction Extent of land potentially required for mitigation planting Existing inland water		Community Area boundary Earthworks New Ditch Existing public right of way (PRoW) New, diverted or realigned PRoW Stopped-up PRoW Temporary PRoW diversion / realignment		Landscape earthworks Engineering earthworks Earthworks Watercourse Existing contours Rail alignment formation	
<b>Map Number</b> Map Name <b>Figure 5</b> Community Area CA4 Whitmore Heath to Madeley		 HS2 Ltd accept no responsibility for any circumstances, which arise from the reproduction of this map after alteration, amendment or abbreviation or if it is issued in part or issued incomplete in any way. Registered in England, Registration number 06791686 Registered office: 2 Snow Hill, Queensway, Birmingham, B4 6GA Scale at A3: 1:5,000  © Crown copyright and database rights 2017. Ordnance Survey Licence Number 100049190. <b>Doc Number:</b> C861-ARP-GT-DPL-000-000012 <b>P00.1 Date:</b> 30/06/17					



<b>Legend</b> - - - Rail alignment Flood Zone Balancing Ponds Main construction compound Replacement Floodplain Storage Area Borrow Pit Land potentially required during construction Extent of land potentially required for mitigation planting Existing inland water		Community Area boundary Earthworks New Ditch Existing public right of way (PRoW) New, diverted or realigned PRoW Stopped-up PRoW Temporary PRoW diversion / realignment Landscape earthworks Engineering earthworks Earthworks Watercourse Existing contours Rail alignment formation		Map Number Map Name <b>Figure 6</b> <b>North of Checkley Lane Borrow Pit</b> Community Area CA5 South Cheshire		 HS2 Ltd accept no responsibility for any circumstances, which arise from the reproduction of this map after alteration, amendment or abbreviation or if it is issued in part or issued incomplete in any way. Registered in England, Registration number 06791686 Registered office: 2 Snow Hill, Queensway, Birmingham, B4 6GA Scale at A3: 1:5,000  © Crown copyright and database rights 2017, Ordnance Survey Licence Number 100049190. Doc Number: C861-ARP-GT-DPL-000-000011 P00.1 Date: 30/06/17	
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# Annex B: Mineral planning policies

## Appendix CT-009-000 – Annex B

Plan	Policy
<p>The Minerals Local Plan for Staffordshire (2015 - 2030) (adopted February 2017)</p>	<p><b>Policy 6: Restoration of Mineral Sites</b></p> <p><b>Restoration requirements</b></p> <p>6.1 Proposals for the restoration of mineral sites will only be supported where it has been demonstrated that they accord with the plan policies, including Policy 4.</p> <p>6.2 Proposals for the restoration of mineral sites, including the review of restoration strategies/ plans will only be supported where it has been demonstrated that the proposals are sufficiently comprehensive, detailed, practicable and achievable within the proposed timescales and where relevant, that:</p> <ul style="list-style-type: none"> <li>a) the land affected at any one time would be minimised by including phased working and restoration;</li> <li>b) the amount of imported backfill would be the minimum necessary to achieve the satisfactory restoration of the site;</li> <li>c) sufficient backfill materials are likely to be available to restore the site within an acceptable timescale;</li> <li>d) the long term potential of best and most versatile agricultural land would be safeguarded and the soil resources would be conserved;</li> <li>e) the flood risk would not be increased and opportunities to reduce flooding would be maximised;</li> <li>f) the restoration enhances the natural environment and net gains in biodiversity would be achieved by contributing to the delivery of local ecological networks; by preserving, restoring, re-creating and joining up habitats of principal importance and enhancing ecological networks; by protecting and supporting populations of species of principal importance; and, by contributing to the national Biodiversity Strategy, the Staffordshire Biodiversity Action Plan and relevant landscape-scale initiatives;</li> <li>g) the restoration enhances valued landscapes, the setting of heritage assets and is informed by and sympathetic to landscape character (including heritage assets and the historic landscape character);</li> <li>h) the aftercare provision would be sufficient to secure high quality and sustainable restoration of the site;</li> <li>i) opportunities to increase the provision of public access, public open space, recreational and sporting facilities would be maximised, particularly where the proposals would contribute towards development plan policies and proposals, or other local initiatives; and</li> <li>j) proposals support the Water Framework Directive objectives by improving river geomorphology and wetland habitat complexity.</li> </ul> <p><b>Regular review of the restoration strategies / plans</b></p> <p>6.3 Developers will be required to regularly review their restoration strategy / plan at least every 10 years to ensure that it is up to date having regard to Policy 6.2 above.</p> <p><b>Financial Guarantees</b></p> <p>6.4 In exceptional circumstances, developers will be required to demonstrate that adequate financial provision has been made to fulfil the restoration and aftercare requirements when proposals are submitted:</p> <ul style="list-style-type: none"> <li>a) for a new mineral site; or</li> <li>b) to change the working, restoration and aftercare of an existing site, particularly when the proposals involve a change to the ownership or control of the site, or part thereof.</li> </ul> <p>Adequate financial provision will also include the security of a Restoration Guarantee Bond or other financial guarantee to cover all or part of the restoration and aftercare costs.</p> <p><b>Overall assessment</b></p> <p>6.5 Having assessed the restoration proposals, permission will only be granted where it has been demonstrated that:</p> <ul style="list-style-type: none"> <li>a) the restoration proposals are sufficiently comprehensive, detailed, practicable and achievable within the proposed timescales; and</li> <li>b) the material planning benefits of the restoration proposals outweigh the material planning objections.</li> </ul>

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Plan	Policy
Cheshire Replacement Minerals Local Plan (adopted 1999 - saved policies)	<p><b>Policy 15 Landscape</b></p> <p>An application for the exploration, and/or winning and working of minerals or associated developments will not be permitted unless during the operational life and on restoration it would satisfy all of the following criteria:-</p> <ul style="list-style-type: none"> <li>i. it would not have an unacceptable impact on the landscape; and</li> <li>ii. the restoration would make a positive contribution to the landscape.</li> </ul>
	<p><b>Policy 23 Nature Conservation</b></p> <p>An application for the exploration and/or winning and working of minerals or associated developments will not be permitted unless it would satisfy all of the following criteria:-</p> <ul style="list-style-type: none"> <li>i. it would maintain the local network of flora, fauna and geological/geomorphological features; and</li> <li>ii. on restoration it would make a positive contribution to the nature conservation and physical environmental resources of the area.</li> </ul>
	<p><b>Policy 29 Agricultural Land</b></p> <p>An application for the exploration and/or winning and working of minerals (excluding silica sand) or associated developments will not be permitted on land classified as Grade 1, 2 or 3a of the Ministry of Agriculture Fisheries and Food Land Classification unless:-</p> <ul style="list-style-type: none"> <li>i. it can be demonstrated that the loss of the amount of agricultural land will be minimal and the quality of agricultural grade retained; and</li> <li>ii. on completion the land is capable of sustaining an agricultural use without recourse to further development requiring planning permission.</li> </ul>
	<p><b>Policy 33 Public Rights of Way</b></p> <p>An application for the exploration and/or winning and working of minerals or associated developments will not be permitted unless during the operational life of the proposal and on restoration, it would satisfy all of the following criteria:-</p> <ul style="list-style-type: none"> <li>i. it would not have an unacceptable adverse impact on public rights of way and their use within, adjacent to and abutting the proposed development;</li> <li>ii. it would not lead to a 'net loss' of public rights of way; and</li> <li>iii. the restoration would where appropriate make a positive contribution to the public rights of way network.</li> </ul>
	<p><b>Policy 41 Restoration</b></p> <p>An application for the exploration and/or winning and working of minerals or other associated developments will not be permitted unless it would satisfy the following criteria:-</p> <ul style="list-style-type: none"> <li>i. The reclamation provides for a high standard of conservation and where appropriate enhancement of the site; and</li> <li>ii. The reclamation provides for the highest practicable standards so as to be suitable for an agreed beneficial after use such as: <ul style="list-style-type: none"> <li>• agriculture;</li> <li>• forestry;</li> <li>• amenity;</li> <li>• nature conservation; and</li> <li>• recreational use.</li> </ul> </li> </ul>



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Plan	Policy
	<p data-bbox="427 230 624 259"><b>Policy 42 Aftercare</b></p> <p data-bbox="427 273 1437 409">The County Council will require the exploration and/or winning and working of minerals or associated developments to be subject to a programme of aftercare management for a period of up to five years following the completion of restoration. The County Council will require schemes to provide for the highest practicable aftercare standards and will require an outline scheme to be submitted as part of the initial planning application.</p>

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