
Construction Environmental Management Plan

For

SWATLANDS FARM





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1.0 Introduction

This Construction Environmental Management Plan (CEMP) provides a code of construction practice for the Construction Phase Enabling Works of Swatlands Farm (the Development).

The scope of the Enabling Works are shown in Appendix 1 and include;

- Pre-start Ecological Works
- S278 Highways improvements to Lucks Lane and permanent site access
- Site establishment (site fencing, temporary site accommodations, site parking, etc)
- Strip top-soil
- Raise site levels to building footprints, site roads and external works
- Install piling platforms
- Statutory Services installations up to site boundary

The balance of the construction of the consented development will likely be undertaken 'by others' and the CEMP will be developed to suit as this progresses.

The Enabling Works for the Development shall be carried out in accordance with;

- The Construction Environmental Management Plan
- BS5228: Noise Vibration and Control on Construction and Open Sites
- Control of Dust from Construction Sites (BRE DTi Feb 2003)
- The DEFRA Construction Code of Practice for Sustainable Use of Soils on Construction Sites

2.0 Programme

The necessary Ecology Assessments have been undertaken and the formation of pre-requisite ecology receptors, designated tree-felling and hedge translocation will take place in Autumn 2023 giving time for establishment before any further works on site.

In January 2024 site accommodations and parking will be installed on site to service the Highways Works that will then take place until the end of March.

With the Highway Works on Lucks Lane complete earthworks will commence on site from April 2024 – it is anticipated that these will be complete in early July 2024.

The Enabling Works Programme provides further detail and is included as Appendix 2.

3.0 Construction Vehicle Movements

Deliveries will be needed for the initial site set-up – but these will be minimal.

At the time of writing the CEMP the full detail of the Highway improvements to Lucks Lane are not fully known so the associated vehicle movements cannot be quantified – however these will not exceed the frequencies of movements needed for the earthworks that follow on the main site.

The earthworks will involve removal of a volume of top-soil from site this is expected to be in the region of 7,000m³ – 800No 8-wheel tipper loads over a period of 5 weeks – an approximate average of 30 movements a day.



This will be timed such that tippers can be delivering stone for the piling platforms and then be loaded with a return load of top-soil.

Subject to testing, we hope to be able to use a 'borrow-pit' technique to win the anticipated volume of excavation arisings in advance of the Works and incorporate these into 'fill' thus reducing the need for importing primary aggregates.

Some topsoil will also be placed in perimeter bunds for re-use later in the works.

A further 37,000T of stone will also be needed for the piling platforms – equating to 1,850 loads over 6 weeks – an approximate average of 60 movements a day.

4.0 Construction Vehicle Routes

Primary fills will be sourced from the nearby Blaise Farm Quarry South of West Malling. This facility is 7.7 miles from the site.

We will use best endeavours to identify a receptor site for surplus topsoil which we hope to transfer under CL:AIRE protocols.

The Off-Site Traffic Management Plan (Appendix 4) shows the route between these two locations via the A228.

5.0 Construction Workers' Travel Plan

All ground and earthworks will be undertaken by Gallagher's own directly-employed staff.

Typically staff are provided with Company transport (e.g. vans or crew-buses) to travel to and from their place of work. Vehicle sharing is deemed a priority when organising working teams for sites.

All Company vehicles are FORS Bronze and low-emissions (ULEZ compliant).

Gallagher's workforce is predominantly from Maidstone and the Medway towns – any suitably skilled employees that live closer to the site will be assigned to the project.

Paddock Wood Railway Station is 1.2 miles from the Development Site. Paddock Wood is 20 minutes from Maidstone (West) by train.

The Arriva No 6 Bus route (Tunbridge Wells < > Maidstone) passes the site.

Cycle storage will be provided on site.

Workers will be encouraged to travel by train, bus or cycle.

6.0 Traffic Management Plan

All deliveries to site will be co-ordinated with our subcontractors and suppliers to ensure that the Highway is not obstructed, with waiting areas designated on site

Where possible/practical traffic movements to/ from site shall be planned outside peak traffic periods.



Any deviation from these hours, which may be necessary to proactively minimise the impact on the surrounding environment, will be agreed with the appropriate person or persons. This may include the Planning Authority, Highways Authority, the Environmental Health Officer and the Police. The operations most likely to cause this deviation are large plant and/or large material deliveries.

It is currently anticipated that all vehicles delivering materials will be parked and then unloaded and stored within the Development Site boundary within pre-arranged and prepared areas. These areas will vary according to the progress and programme at the time.

It is also currently anticipated that all vehicles delivering or retrieving plant will be parked and then unloaded or loaded within the site boundary. All plant will also be stored on site.

As noted in Section 4.0 above, Appendix 4 Off-Site Traffic Management Plan shows the route for the likely majority of transport movements between Blaise Farm Quarry and the Development Site – all via the A228. Most other deliveries are likely to be via an extension of this route to the motorway network at Junction 4 of the M20.

The On-Site Traffic Management Plan is included as Appendix 5.

Both these documents are live documents that will be developed as the Works are further planned and executed.

7.0 Site Parking

A stoned parking area for at least 30 contractors' cars and/or vans will be established on site close to the Site Entrance in the first week of the Enabling Works.

A separate area will also be set-up close to this for Site Construction Vehicles & Plant.

Refer to the Site Set-Up Plan (Appendix 3) for location.

8.0 Temporary Site Accommodations

For these works, site accommodation will consist of the below, we expect additional accommodation will be required for later superstructure works

- Site Canteen/Office (10m x 3m)
- Drying Room (10m x 3m)
- Site WCs (10m x 3m)
- Storage Container (6m x 2.5m)

Initially site accommodation will be powered by a combination solar/ diesel generator set but these will be transferred to mains power as soon as it is available

Similarly temporary arrangements will be made for potable water and foul drainage connections but again these will be transferred to permanent connections as soon as they are available

Refer to the Site Set-Up Plan (Appendix 3) for location and layout.

9.0 Measures to minimise and control noise, vibration, dust, odour, exhaust, smoke and fumes during construction

Noise

Given the nature of the early enabling we do not expect issues of this nature to arise, however where in a few isolated cases there is cause to work close to some isolated industrial and commercial receptors – in these locations we shall, where necessary and/ or possible:

- Make use of machinery which has inherent isolation or dampening of vibrating components.
- Modify the paths by which the noise travels through the air to the people exposed – e.g. erect acoustic enclosures around machines to reduce the amount of noise emitted.
- Use barriers and screens to block the direct path of sound.
- Position noise sources further away from workers.
- Keep noisy machinery and processes away from quieter areas.
- Proper and regular maintenance of machinery and equipment is essential.
- make use of quieter plant
- When possible reduce and/or stagger the noise timings throughout the day.

Vibration

Operations that cause high levels of vibration such as demolition, piling, etc are not planned for this phase of the Development.

To minimise the risk of vibration from the planned activities effecting neighbouring properties as far as reasonably practicable;

- Vibration cycles of rollers and compactors will not be used when in close proximity to neighbouring receptors – heavier equipment or more passes will be used as an alternative.
- Haul roads will be sited away from neighbouring receptors
- Movement and tracking of plant close to the site boundary will be minimised as far as reasonably practicable
- A site speed limit of 10mph will be enforced

If any concerns are raised a programme of vibration monitoring shall be implemented.

Dust

Haul Routes

- Suitable Haul routes will be selected away from sensitive areas wherever possible.
- The Site Entrance will be base course surfaced as soon as is practicable.
- The width of haul roads will be reduced (while still allowing two-way traffic) to minimise surface area from which dust may be produced.
- Access and adjacent public roads will be swept when necessary (whilst still allowing two-way traffic) using a road sweeper.
- Vehicle speeds will be limited - the slower the vehicles the less the dust generation.
- Haul roads will be dampened, ensuring that any associated run off is properly controlled.
- **See also "Protection of groundwater and surface water" later*

Vehicles / Plant

- The wheels of all Vehicles and Plant leaving the site will be inspected and cleaned so that mud is not spread on surrounding roads - dry mud turns to dust....
Wash down points will be available.
- Plant exhausts will be checked to ensure that their exhausts do not discharge directly at the ground.
- Plant re-fuelling areas will be kept away from sensitive locations and boundaries.

Earthworks and excavations

- Earthworks will be completed as soon as is practicable.
- Earthworks will be kept damp as far as is practicable.
- Avoidance of exceptionally dry weather periods will be considered during the programming of all potentially dust generating works operations.

Materials handling and storage

- We will refrain from creating stockpiles of fine-grained material with materials being placed straight to fill whenever possible
- If stockpiles become necessary, these will be kept to the minimum practicable height and will be located away from the site boundary and downwind of sensitive areas.
- All dust-generating materials transported to and from site will be covered by sheet.
- Fuel will be stored in double banded tanks

Cutting / Grinding

Cutting / grinding is not envisaged to be necessary as part of the proposed scope, in the event that it is then, we shall ensure;

- Cutting and sawing equipment will be supplied with dust extractors to minimise dust. Wet cutting will be used wherever possible.
- Materials shall be selected to minimise the requirement for cutting wherever possible.

Emissions, Smoke & Odours

- Vehicles and plant used on site will be well maintained and regularly serviced. Ensuring that all vehicles used by contractors comply with MoT emissions standards.
- Deliveries to site will be managed, to minimise queuing.
- Engines will be switched off when they are not in use.
- Car parking will be managed to minimise queuing and engines will be switched off when vehicles are not in use.
- Waste materials will not be burnt on site.
- Covered containers will be used for organic waste and removed frequently before it begins to decompose.
- All fuels and chemicals and other dangerous substances will be stored in the appropriate manner.
- The wind conditions will be taken account of when arranging activities that are likely to emit aerosols, fumes, odours and smoke.
- Site toilets will be sympathetically positioned away from public and any other potentially sensitive areas.
- The agreed transport routes will be issued and managed to ensure full compliance.
- Queuing will be minimised at all times by managing all deliveries to site.

10.0 Construction Delivery Hours

Deliveries will be received from 07:00 to 17:30 Monday to Friday and 07:00 to 13:00 on Saturdays. The site will be closed on Sundays and Bank Holidays unless agreed otherwise with the Local Planning Authority.

11.0 Site Hoardings

The perimeter of the site will generally be secured by 2m high temporary fencing (e.g. Heras) erected in accordance with the manufacturer's guidance and also our Temporary Works Design.



A pair of locking 6m wide site gates will be provided at the Site Entrance off Lucks Lane.

The existing fence along the Western boundary will be checked for integrity, but for the purpose of this CEMP is deemed as adequately secure.

The proposed temporary fence-lines are shown on the Site Set-Up Plan (Appendix 3).

Permanent fencing shall be erected as soon as practicably possible

12.0 Details of Noise Mitigation

Refer to Noise in Section 9.0 above.

13.0 Measures to minimise the potential for pollution of groundwater and surface water

- Silt traps will be installed adjacent to the wheel washing area to ensure that silt is restricted from entering the storm water drainage system.
- All fuel storage tanks will be double skinned and bunded to 110% capacity.
- Spill kits will be made available and Emergency Action Plans implemented in accordance with the relevant risk assessments.
- Do not pump directly from excavations into drains or watercourses – discharge to grassland/soakaway or to settlement.
- Do not strip away more topsoil than necessary – the remaining topsoil will prevent run-off.
- Manage soil stock-piles carefully. Avoid siting them close to water courses and consider the need for silt fences.
- Refer to the Earthworks Strategy (Appendix 5) for the location of stockpiles.
- Avoid excessive spraying of roads to control dust. Keep roads swept.
- Ensure that any discharge that is made to a watercourse or to sewer is authorised by the relevant authority.
- Concrete wash outs to be controlled.
- No water, whether it is surface water or other, is to be discharged into drainage or ducts anywhere on site, except for agreed storm outfalls.
- Comply with the regulatory requirements and wherever possible the good practice advice outlined in the Environment Agency's Pollution Prevention Guidance notes -

PPG1 (Environmental Responsibilities), PPG5 (Works In, Near or Over Watercourses) and PPG6 (Construction & Demolition Sites).

- All manholes to be colour code marked for retained storm and foul water respectively.
- Ensure existing drainage drawings are maintained and displayed.

The S278 Works include the realignment of the ditch and replacement of the existing culvert beneath Lucks Lane at the junction with Maidstone Road – the management of groundwater will form part of the Method Statement associated with these works.

Across the site as a whole, dependant on site conditions, weather, and actual run-off, various measures may be implemented to mitigate against sediment-laden run-off entering the existing watercourses;

Typical examples are shown in the pictures below;

Silt Fencing;



Silt traps;



Silt mats;



Check dams;



Settlement lagoons;



14.0 Measures to protect water resources

- Monitor and record all usage
- Set targets
- Display graphically information within site canteen
- Good signage reminding all to ensure all taps are fully turned off.
- Consider low water use fixtures wherever possible.
- Consider using recycled water for wheel washing.
- Provide adequate and well maintained on/off valves for water stops and pipes.

15.0 Measures to Protect Ecology;

Background

Surveys completed in 2020 and 2021 found the following ecological interest:

Habitats	
General summary	The Site supports three priority habitat types: deciduous woodland, traditional orchard and species rich native hedgerows. Mitigation relating to protection of retained habitats is required
Species	
Bats	No roosts recorded although trees with bat roost potential were identified. Precautionary mitigation required including surveys prior to site clearance
Reptiles	Low population of slow worm recorded, mitigation required
GCN	Not present no mitigation required
Dormice	Not present no mitigation required
Birds	Present across the site mitigation in terms of timing of vegetation clearance required

Mitigation Required;

Habitats	Mitigation before and during construction
Deciduous woodland	A 3 – 5.5m protected buffer is to be provided throughout construction – this needs to be fenced with Heras fencing.

	<p>During the construction phase, the woodland will be protected from the indirect impacts of construction activities:</p> <ul style="list-style-type: none"> • dust screens or hoarding will be used to prevent dust entering the woodland, • discharge of surface water run-off to the wet ditch on the western edge of the woodland will be prevented through the implementation of the drainage strategy. • No materials will be stored within 5m of the woodland edge, and signposted Heras fencing will be installed to ensure people and vehicles do not enter the woodland. • The tree root protection zone on the eastern woodland edge will be clearly marked and enforced
Traditional orchard	<ul style="list-style-type: none"> • the orchard will be protected from the indirect impacts of construction activities by the use of dust screens or hoarding. • No materials will be stored within the orchard • No construction activity or access will be allowed within the orchard
Hedgerow H1a north of Lucks Lane	<p>This hedgerow is to be relocated to the north of units 2 and 3 and to the eastern part of the Site to allow Lucks Lane to be widened. The methods for this relocation are:</p> <ul style="list-style-type: none"> • coppice the existing hedgerow, • create a trench at the hedgerow receptor site and prepare soil, • scoop the hedgerow and roots using large bucket on JCB, • re-planting the hedgerow in the same order as existing, and back-filling with topsoil from around the original hedge. <p>A detailed methodology is to be provided which will also include specialist arboricultural assessments of how the semi mature oaks may be moved as a component of the hedge.</p>

Other hedgerows	The retained hedgerows and their root zones in the east of the Site will be protected during the construction phase by Heras fencing and dust screens, where required
Grassland	All areas of retained grassland are to be protected from incursion during construction by Heras fencing
Stream	the stream and wet ditch need to be protected from silt, debris or chemicals entering the channels. Sustainable drainage, and/or suitable water treatment, should protect the watercourses from any surface water discharges from the site
Species	
Bats	<p>Tree G1a – a fruit tree with ‘Moderate’ bat roost potential is due to be removed. This tree will be subject to two elevated inspections in the bat active period (late May – September) to determine if a bat roost is present. If a roost is found, an EPSM licence will be required to fell the tree, and mitigation for the loss of the roost will be provided in the form of a bat box on a retained tree.</p> <p>A tree with ‘Low’ suitability for roosting bats in the central tree line (one of T7-9) is proposed for removal. The ivy will be cut at the base, allowed to die back, and the tree will be soft felled under ecological supervision.</p> <p>Prior to felling all trees will be re-assessed by the ecologist to ensure no new features with bat roost potential have been felled. The trees to be felled will be marked up on site prior to the inspection.</p>
Reptiles	<p>Implementation of the following Reptile Mitigation Strategy to avoid the killing and/or injury of reptiles and common amphibian species, and the retention and/or provision of sufficient terrestrial habitat and connectivity to ensure long term viability of the reptile population. Mitigation will include the following measures (see Figure 8):</p> <ol style="list-style-type: none"> 1. Creation of a reptile receptor area in the east of the Site, close to where the one slow worm was recorded. This eastern section of the Site is to be enhanced to create a meadow, which will provide higher quality habitat for reptiles than the existing grazed field. The grazing pressure will be removed as soon as possible and the grassland left to grow long. The grass will be subject to a single cut in late summer to a minimum height of 150mm. Once established, the rotational management regime for the meadow habitat will be implemented; this will also be suitable for reptiles. 2. Four log piles will provided at the base of the hedgerows in the receptor area. These will be constructed using logs with a maximum diameter

	<p>of 200mm. Each log pile will be secured with stakes to prevent collapse, and with wire to prevent removal or dismantling.</p> <ol style="list-style-type: none"> 3. As only one slow worm was recorded on one occasion at the base of the eastern hedgerow, reptile exclusion fencing is not considered necessary. 4. Instead, the grassland to be removed both within the fields and at the margins of the development footprint will be cut in a two-step process during the reptile / amphibian active period (April – October). The first cut will be to c.20cm, then the second cut will be to c.5cm approximately one week later. This will discourage reptiles and amphibians from the field margins and into the retained habitats at the bases of the tree lines and woodland. Although a slow worm has only been recorded on the eastern boundary, the hedgerows are connected throughout the Site and the species may move throughout these habitats; this precautionary method of vegetation removal is therefore required. 5. The grass in the development area will be kept short, at ground level, until works commence. This will ensure there are no opportunities for reptiles / amphibians to rest or shelter within the construction zone. 6. When the hedgerow along Lucks Lane is relocated, this will be supervised by the project ecologist. Any animals found will be relocated to the receptor area. The digging of the trench for the hedgerow and use of machinery in the eastern field will also be supervised. The works area will be mown short to minimise the risk of encountering animals. 7. In the long-term, the meadow and long grass at the base of the central tree line will provide suitable habitat for reptiles and amphibians. These will link to the woodland to the west via the long grass at the base of the south-western boundary tree line. 8. Monitoring of the reptile population is not considered necessary due to the presence of only one slow worm on one occasion. However, ongoing monitoring and management of the habitats post-development will be undertaken, and any recommendations in relation to reptiles and amphibians will be made.
Birds	<p>Sensitive timing of all vegetation clearance works to avoid the bird breeding season (March - August inclusive). Where this is not possible, any vegetation to be removed</p>

	will be checked by a suitably experienced ecologist; where active nests are present works will need to be delayed until all chicks have fledged and the nest is no longer in use.
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Refer to the attached drawings;

- Mitigation Strategy for Habitats (Appendix 7)
- Mitigation Strategy for Species (Appendix 8)

16.0 Measures to Protect Trees, Woodland and Planting

Refer to Habitats in Section 15.0 above.

17.0 Public Consultation and Liaison during the Enabling Works

An introductory letter will be hand-delivered to all nearby businesses and residential properties. This will outline the content of the Enabling Works and provide contact details for the Development Site.

Quarterly updates will also be provided.

Site contact details will also be displayed at the Site Entrance.

The site will be registered with the Considerate Constructors Scheme and will conform to the associated Code of Considerate Practice.

18.0 Measures to prevent the transfer of mud onto the Highway

The new permanent access to the development off Lucks Lane will be constructed as early as possible in the project. This will assist with our efforts in maintaining the highest possible levels of cleanliness, to ensure that the potential for earth or mud adhering to the wheels of vehicles in a quantity which may introduce hazard or nuisance on the adjacent Highway is minimised as far as is practically possible. However, whilst this will reduce the risk of vehicles wheels becoming contaminated with mud to an absolute minimum, a wheel washing area will still be set up.

The adjacent Highway and Footpaths will also be regularly inspected and maintained to the standard normally expected within this environment.

The Site Entrance will be kept clean and clear at all times to ensure as far, as is practically possible that no site materials can contaminate the adjacent Highway. This will be continuously monitored.

Avoidance of exceptionally wet weather periods will be considered during the short-term programming of all earthmoving/construction works.



In the event that mud or debris arising from the development is found present on the Highway, it shall immediately be removed and cleaned and returned to the standard normally expected within this environment.

The site entrance and adjacent roads will be swept when necessary [whilst still allowing two-way traffic] using a mechanical road sweeper from Gallagher's own fleet or an appropriately authorised company.

This facility will be provided on stand-by, if an appropriate risk assessment dictates that it is necessary. This would be applicable, if extreme and variable weather conditions were forecast.

19.0 Soil Management

Soil will be managed in accordance with the DEFRA Construction Code of Practice for Sustainable Use of Soils on Construction Sites.

The Earthworks Strategy drawing (Appendix 5) should be referred to as a guide, however a volumetric assessment will be undertaken to arrive at more accurate volumes.

Once volumes are known the strategy will be developed further and incorporated into the Material Management Plan (MMP) and Site Waste Management Plan (SWMP)

The completed strategy will show the type of topsoil and any subsoil to be stripped or excavated, haul routes, the methods to be used, and the location, type and management of each soil stockpile.

- Stripping, stockpiling and placing of soil, will be carried-out in the driest condition possible and tracked equipment will be used to reduce compaction.
- Traffic movement will be confined to designated routes.
- Soil storage periods will be kept as short as possible.
- Stockpiles of any different soil materials will be clearly defined

Sustainable drainage systems will be considered for use in the final design to provide more long-term protection of soils beyond the Construction Phase by facilitating the infiltration and attenuation of surface water.

20.0 Details of the storage and removal of spoil from the site

The overall Earthworks Strategy is to retain on site as much as possible of the top-soil from the strip – this will be placed in the locations shown on the Earthworks Strategy Drawing (Appendix 5).

There will however be a balance that will have to be removed from site – this will be in the region of 7,000m³ – 800No vehicle trips

Subject to results of soil surveys conducted in August 2023, it may be possible to 'borrow pit' forecast soils arisings from a suitable location on site to mitigate some of the need for imported soils.

21.0 Wheel-washing

In the event that plant and wheel washing is required, a dry wheel wash facility, as shown in the example photograph below will be provided to prevent (as far as is practicable) mud and debris being carried from within the Development site onto the public road.

Signage will be put in place to direct all vehicles to use the wheel wash. The track section between the wash facility and the public road will be surfaced with tarmac or clean hardcore and the area surrounding the facility will be kept clean and in good condition.

Loose debris will also be periodically removed from on-site tracks. Also, all HGVs taking construction materials to and from the Development site will be sheeted to prevent the spillage or deposit of material on the Highway.

Example of a Dry Ramp Wheel Wash Facility;



22.0 Temporary Traffic Management / Signage

Traffic Management Plans for the S278 Highways Improvement of Lucks Lane will be developed once full details are received. It is likely that 2-way signals will be implemented for the duration of these works along with all necessary Chapter 8 signage for working on the Highway.

Refer to the Traffic Management Plans (Appendices 4 & 5) for details of Traffic Management for the On-Site Enabling Works.



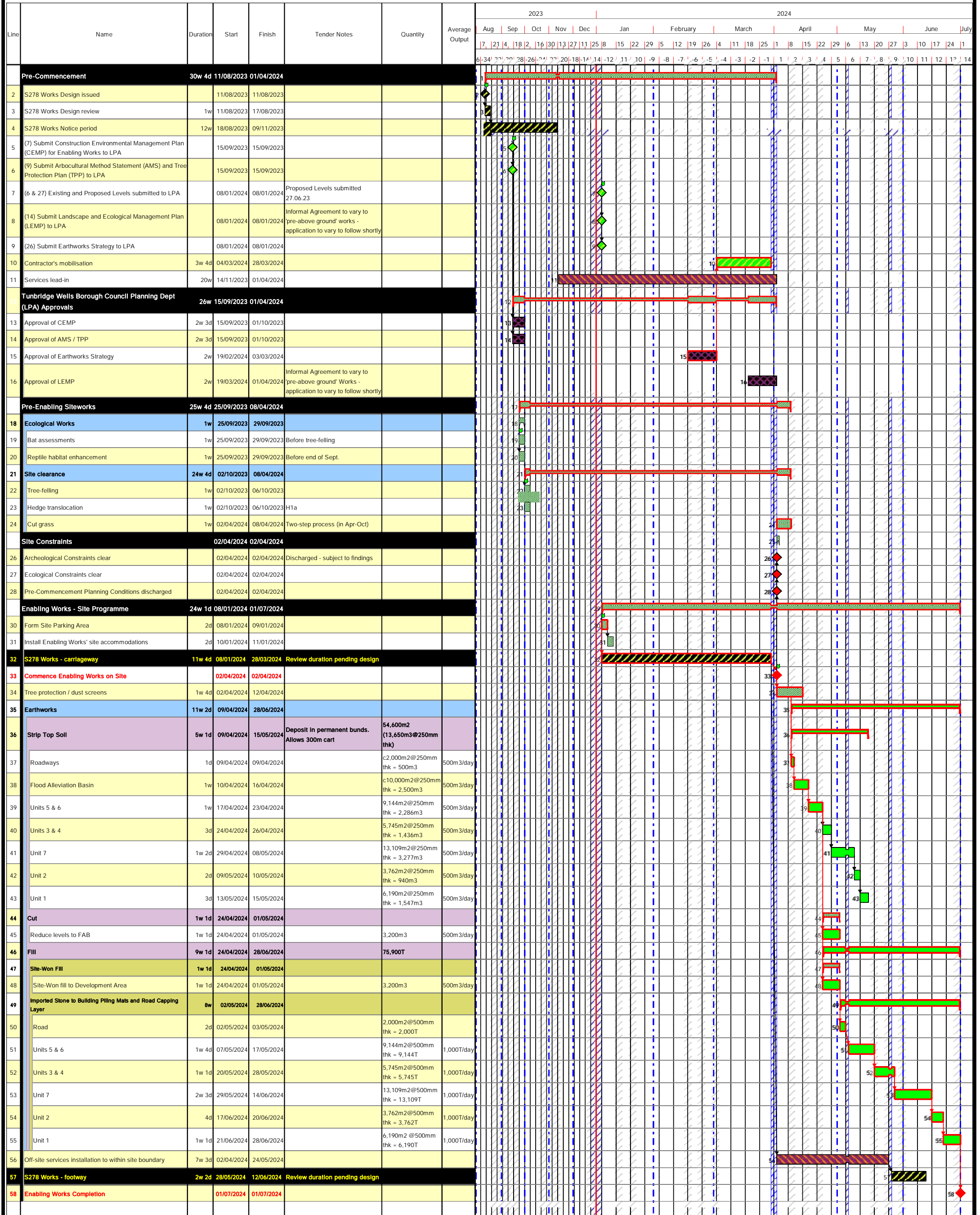
Throughout this phase of the project a trained Traffic Marshall shall be stationed at the Site Entrance controlling vehicle movements in this location.

23.0 Measures to prevent the discharge of surface water onto the Highway

The site perimeter is predominantly bounded by existing ditches – a maintenance regime will be implemented to ensure that these remain free-flowing such that rainwater is not able to discharge from the site onto the Highway.

The new Site Entrance will be designed such that surface water cannot discharge beyond the site boundary onto Lucks Lane (by means of drainage channels, road gullies or creating a water-shed at the boundary).

SWATLANDS FARM, PADDOCK WOOD

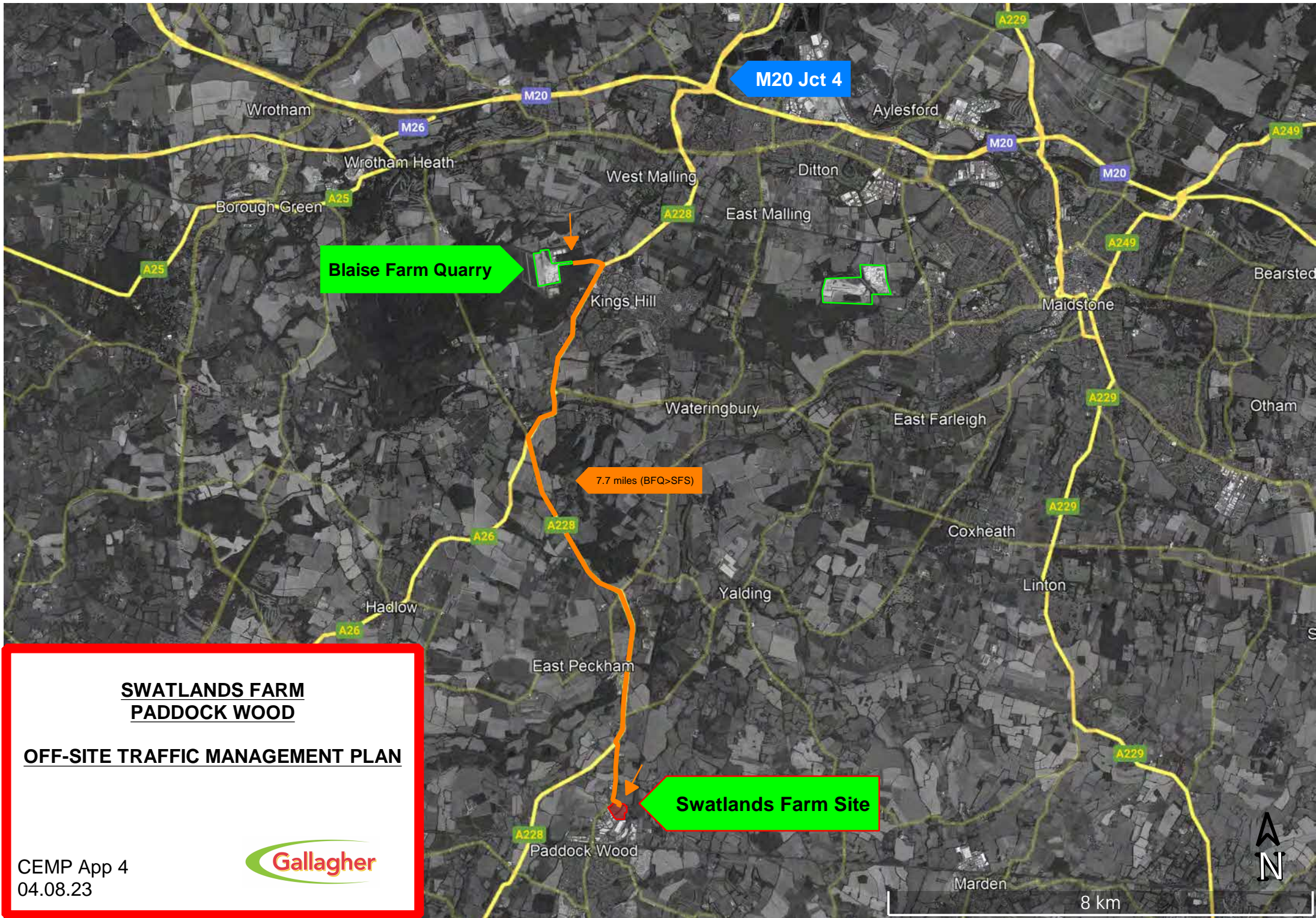


Resources: Earthworks (Green), Key Date (Red), TWBC (Purple), Services (Blue), S278 (Yellow), Pre-Commencement (Light Green)

Programme Ref : 752GP/EW/001.	Revision : Rev 3	Revision Date : 08/09/2023
Enabling Works Programme		

Revision Comment : Later CEMP and Pre-Enabling

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M20 Jct 4

Blaise Farm Quarry

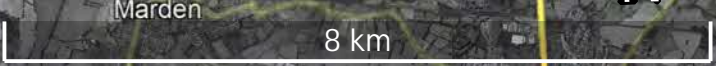
7.7 miles (BFQ>SFS)

Swatlands Farm Site

SWATLANDS FARM
PADDOCK WOOD

OFF-SITE TRAFFIC MANAGEMENT PLAN

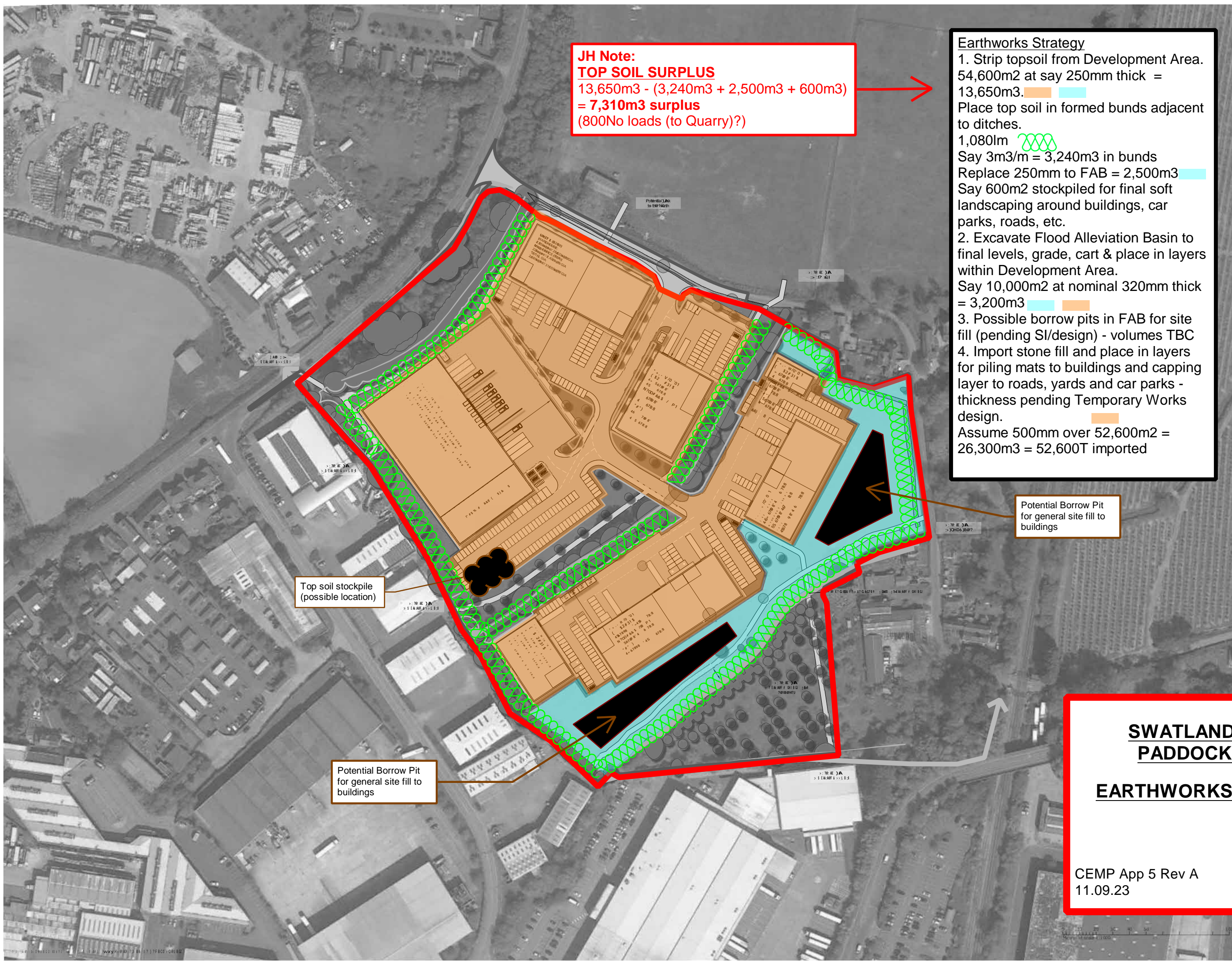
CEMP App 4
04.08.23

JH Note:
TOP SOIL SURPLUS
 13,650m³ - (3,240m³ + 2,500m³ + 600m³)
 = 7,310m³ surplus
 (800No loads (to Quarry)?)

Earthworks Strategy

- Strip topsoil from Development Area. 54,600m² at say 250mm thick = 13,650m³. Place top soil in formed bunds adjacent to ditches. 1,080lm Say 3m³/m = 3,240m³ in bunds Replace 250mm to FAB = 2,500m³ Say 600m² stockpiled for final soft landscaping around buildings, car parks, roads, etc.
- Excavate Flood Alleviation Basin to final levels, grade, cart & place in layers within Development Area. Say 10,000m² at nominal 320mm thick = 3,200m³
- Possible borrow pits in FAB for site fill (pending SI/design) - volumes TBC
- Import stone fill and place in layers for piling mats to buildings and capping layer to roads, yards and car parks - thickness pending Temporary Works design. Assume 500mm over 52,600m² = 26,300m³ = 52,600T imported



Top soil stockpile (possible location)

Potential Borrow Pit for general site fill to buildings

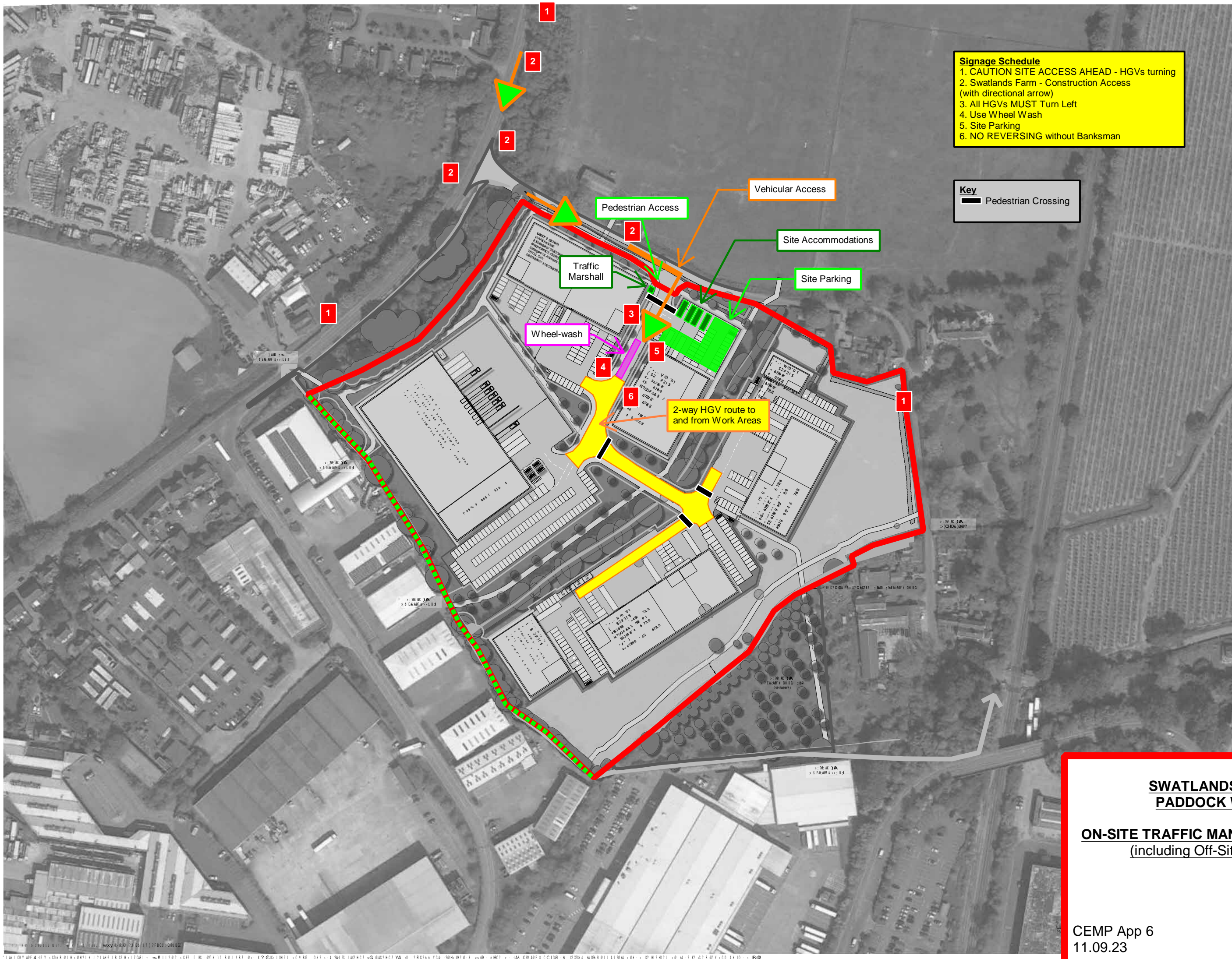
Potential Borrow Pit for general site fill to buildings

**SWATLANDS FARM
 PADDOCK WOOD**

EARTHWORKS STRATEGY

CEMP App 5 Rev A
 11.09.23

Scale: 1:1000
 North arrow pointing up.



Signage Schedule

1. CAUTION SITE ACCESS AHEAD - HGVs turning
2. Swatlands Farm - Construction Access (with directional arrow)
3. All HGVs MUST Turn Left
4. Use Wheel Wash
5. Site Parking
6. NO REVERSING without Banksman

Key

— Pedestrian Crossing

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 □ 8 2B ' 8 = H
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**SWATLANDS FARM
PADDOCK WOOD**

ON-SITE TRAFFIC MANAGEMENT PLAN
(including Off-Site Signage)

CEMP App 6
11.09.23



Figure 7 - Mitigation Strategy for Habitats



INDICATIVE PLANT SCHEDULE

Tree Schedule

PLANT NAME	COMMON NAME	NOTES - HEIGHT and CROWN SPREAD AFTER 25YRS
Acer campestre "Streetwise"	Field Maple "Streetwise"	2m clear stem, semi-mature. Mature height - 7m. Mature spread - 3m
Acer campestre	Field Maple	2m clear stem, semi-mature. Mature height - 10m. Mature spread - 7m
Ailun glutinosa	Common Alder	2m clear stem, semi-mature. Mature height - 8m. Mature spread - 5m
Amelanchier lamarckii	Juneberry	Multi-Stem min. 5 breaks. Mature height - 8m. Mature spread - 2.5m
Betula nigra	River Birch	2m clear stem, semi-mature. Mature height - 10m. Mature spread - 5m
Betula pendula	Silver Birch	2m clear stem, semi-mature. Mature height - 10m. Mature spread - 5m
Betula utilis "Jaquemontii"	West Himalayan Birch	2m clear stem, semi-mature. Mature height - 10m. Mature spread - 4m
Carpinus betulus "Streetwise"	Common Hornbeam "Streetwise"	2m clear stem, semi-mature. Mature height - 9m. Mature spread - 3m
Carpinus betulus	Common Hornbeam	2m clear stem, semi-mature. Mature height - 10m. Mature spread - 5m
Corulus avellana	Hazel	2m clear stem, semi-mature. Mature height - 8m. Mature spread - 5m
Crataegus laevigata "Pauls Scarlet"	Hawthorn "Pauls Scarlet"	2m clear stem, semi-mature. Mature height - 6m. Mature spread - 4m
Crataegus monogyna	Common Hawthorn	2m clear stem, semi-mature. Mature height - 6m. Mature spread - 4m
Fagus sylvatica	Common Beech	2m clear stem, semi-mature. Mature height - 10m. Mature spread - 6m
Magnolia soulangeana	Saucer Magnolia	2m clear stem, semi-mature. Mature height - 8m. Mature spread - 4m
Malus "Cox's Orange Pippin"	Apple Cox's Orange Pippin	2m clear stem, semi-mature. Mature height - 6m. Mature spread - 4m
Malus "Bramleys Seedling"	Apple Bramley's Seedling	2m clear stem, semi-mature. Mature height - 6m. Mature spread - 4m
Malus "Evereste"	Crab Apple Evereste	2m clear stem, semi-mature. Mature height - 6m. Mature spread - 3m
Malus trilobata	Japanese Wild Apple	2m clear stem, semi-mature. Mature height - 6m. Mature spread - 2.5m
Malus sylvestris	Crab Apple	2m clear stem, semi-mature. Mature height - 10m. Mature spread - 4m
Prunus "Snow Goose"	Flowering Cherry	2m clear stem, semi-mature. Mature height - 6m. Mature spread - 3m
Prunus "Sunset Boulevard"	Cherry "Sunset Boulevard"	2m clear stem, semi-mature. Mature height - 10m. Mature spread - 3m
Prunus avium "Plena"	Double Gean Cherry	2m clear stem, semi-mature. Mature height - 10m. Mature spread - 6m
Prunus avium	Wild Cherry	2m clear stem, semi-mature. Mature height - 12m. Mature spread - 7m
Prunus padus "Albertii"	Bird Cherry	2m clear stem, semi-mature. Mature height - 7m. Mature spread - 3.5m
Prunus communis	Common Pear	2m clear stem, semi-mature. Mature height - 12m. Mature spread - 8m.
Quercus robur	English Oak	2m clear stem, semi-mature. Mature height - 12m. Mature spread - 8m.
Quercus rubra	Red Oak	2m clear stem, semi-mature. Mature height - 12m. Mature spread - 8m.
Sorbus aucuparia	Rosyn	2m clear stem, semi-mature. Mature height - 7m. Mature spread - 4m
Sorbus terminalis	Wild Service Tree	2m clear stem, semi-mature. Mature height - 8m. Mature spread - 4m
Tilia x europaea	Common Lime	2m clear stem, semi-mature. Mature height - 12m. Mature spread - 6m

NATIVE HEDGE MIX

%	PLANT NAME	COMMON NAME	STOCK	SIZE
25%	Corylus avellana	Hazel	B Trans	60-80cm
25%	Crataegus monogyna	Hawthorn	B Trans	60-80cm
25%	Prunus spinosa	Blackthorn	B Trans	60-80cm
5%	Rhamnus frangula	Buckthorn	B Trans	60-80cm
15%	Rosa canina	Dogrose	B Trans	60-80cm
5%	Sambucus Nigra	Elder	B Trans	60-80cm

To be planted in species groups of approximately 5.
To be planted @ 4m in a Double Staggered Row.

- Species rich hedgerow translocated from northern boundary to eastern boundary
- All hedgerows to be protected during construction phase
- New species rich hedgerows planted throughout development

- Stream corridor enhanced
- Stream protected during construction phase

Legend

- Tree
- Grassland
- Hedge
- Stream
- seed mixes
- 1m
- 2.4m Palisade Fencing and gates
- #: <

0 10 50m

Figure 8 - Mitigation Strategy for Species



- BATS**
- Enhance woodland, orchard, tree lines and stream
 - Bat roosting features to be integrated into new buildings / retained mature trees
 - Sensitive lighting strategy implemented
 - Ivy cut at base of tree proposed for removal in central tree line before felling
 - Update bat tree assessments of all trees proposed for removal if works have not commenced by early 2024

INDICATIVE PLANT SCHEDULE

Tree Schedule

PLANT NAME	COMMON NAME	NOTES - HEIGHT and CROWN SPREAD AFTER 25YRS
Acer campestre "Streetwise"	Field Maple "Streetwise"	2m clear stem, semi-mature. Mature height - 7m. Mature spread - 3m
Acer campestre	Field Maple	2m clear stem, semi-mature. Mature height - 10m. Mature spread - 7m
Ainus glutinosa	Common Alder	2m clear stem, semi-mature. Mature height - 10m. Mature spread - 5m
Amygdalier lamarckii	Juneberry	Multi-Stem min. 5 breaks. Mature height - 8m. Mature spread - 2.5m
Betula nigra	River Birch	2m clear stem, semi-mature. Mature height - 10m. Mature spread - 5m
Betula pendula	Silver Birch	2m clear stem, semi-mature. Mature height - 10m. Mature spread - 5m
Betula utilis "Jaquemontii"	West Himalayan Birch	2m clear stem, semi-mature. Mature height - 10m. Mature spread - 4m
Carpinus betulus "Streetwise"	Common Hornbeam "Streetwise"	2m clear stem, semi-mature. Mature height - 9m. Mature spread - 3m
Carpinus betulus	Common Hornbeam	2m clear stem, semi-mature. Mature height - 10m. Mature spread - 5m
Corulus avellana	Hazel	2m clear stem, semi-mature. Mature height - 8m. Mature spread - 5m
Crataegus laevigata "Pauls Scarlet"	Hawthorn "Pauls Scarlet"	2m clear stem, semi-mature. Mature height - 6m. Mature spread - 4m
Crataegus monogyna	Common Hawthorn	2m clear stem, semi-mature. Mature height - 6m. Mature spread - 4m
Fagus sylvatica	Common Beech	2m clear stem, semi-mature. Mature height - 10m. Mature spread - 6m
Magnolia soulangeana	Saucer Magnolia	2m clear stem, semi-mature. Mature height - 8m. Mature spread - 4m
Malus "Cox's Orange Pippin"	Apple Cox's Orange Pippin	2m clear stem, semi-mature. Mature height - 6m. Mature spread - 4m
Malus "Bramleys Seedling"	Apple Bramley's Seedling	2m clear stem, semi-mature. Mature height - 6m. Mature spread - 4m
Malus "Evereste"	Crab Apple Evereste	2m clear stem, semi-mature. Mature height - 6m. Mature spread - 3m
Malus trilobata	Lebanese Wild Apple	2m clear stem, semi-mature. Mature height - 6m. Mature spread - 2.5m
Malus sylvestris	Crab Apple	2m clear stem, semi-mature. Mature height - 10m. Mature spread - 4m
Prunus "Snow Goose"	Flowering Cherry	2m clear stem, semi-mature. Mature height - 6m. Mature spread - 3m
Prunus "Sunset Boulevard"	Cherry "Sunset Boulevard"	2m clear stem, semi-mature. Mature height - 10m. Mature spread - 3m
Prunus avium "Plena"	Double Gean Cherry	2m clear stem, semi-mature. Mature height - 10m. Mature spread - 6m
Prunus avium	Wild Cherry	2m clear stem, semi-mature. Mature height - 12m. Mature spread - 7m
Prunus padus "Albertyl"	Bird Cherry	2m clear stem, semi-mature. Mature height - 7m. Mature spread - 3.5m
Prunus communis	Common Pear	2m clear stem, semi-mature. Mature height - 12m. Mature spread - 8m.
Quercus robur	English Oak	2m clear stem, semi-mature. Mature height - 12m. Mature spread - 8m.
Quercus rubra	Red Oak	2m clear stem, semi-mature. Mature height - 12m. Mature spread - 8m.
Sorbus aucuparia	Rowan	2m clear stem, semi-mature. Mature height - 7m. Mature spread - 4m
Sorbus torminalis	Wild Service Tree	2m clear stem, semi-mature. Mature height - 8m. Mature spread - 4m
Tilia x europaea	Common Lime	2m clear stem, semi-mature. Mature height - 12m. Mature spread - 6m

REPTILES & AMPHIBIANS

- Creation of reptile receptor area (marked in orange) with 4 log piles
- Grassland in development area cut in two-step process between April and October
- Grass in development area then kept short (<5cm) until works commence
- Relocation of Lucks Lane hedgerow to be supervised by ecologist
- Grassland in receptor and at base of central tree line to be managed to ensure suitability for reptiles
- Onsite pond enhanced

BREEDING BIRDS

- Vegetation clearance to avoid the bird breeding period, or vegetation to be checked prior to removal for active nests
- Retention and enhancement of woodland, orchard, tree lines and hedgerows to benefit breeding birds
- New hedgerow and tree planting
- Range of bird boxes to be incorporated into development on buildings and trees

Luck Lane hedgerow

WETLAND 3.7

tolerant meadow mix

seeding enhancement to orchard area

WETLAND 3.7

ORCHARD

Legend

- Tree
- Grass
- Meadow
- seed mixes
- 2.4m Palisade Fencing and gates
- # : <

