

## Method Statement Template

Site / Depot / Office:	Greenway			MS No:	TWG0001_MC01 - South
Name of Author <i>(print &amp; sign)</i> :	<b>Marty Conlon</b>			Date:	20/10/2021
Name of Approver <sup>1</sup> <i>(print &amp; sign)</i> :	<b>Tim O'Donoghue</b>			Date:	20/10/2021
Activity Title:	<b>Construction Method Statement - South</b>				
RA / MS Revisions / Confirmation of Review or Changes:					
No:	Reason	Author <i>(print &amp; sign)</i>	Date	Approved <i>(print &amp; sign)</i>	Date

## Section 1 - Method Statement

### 1.0 References

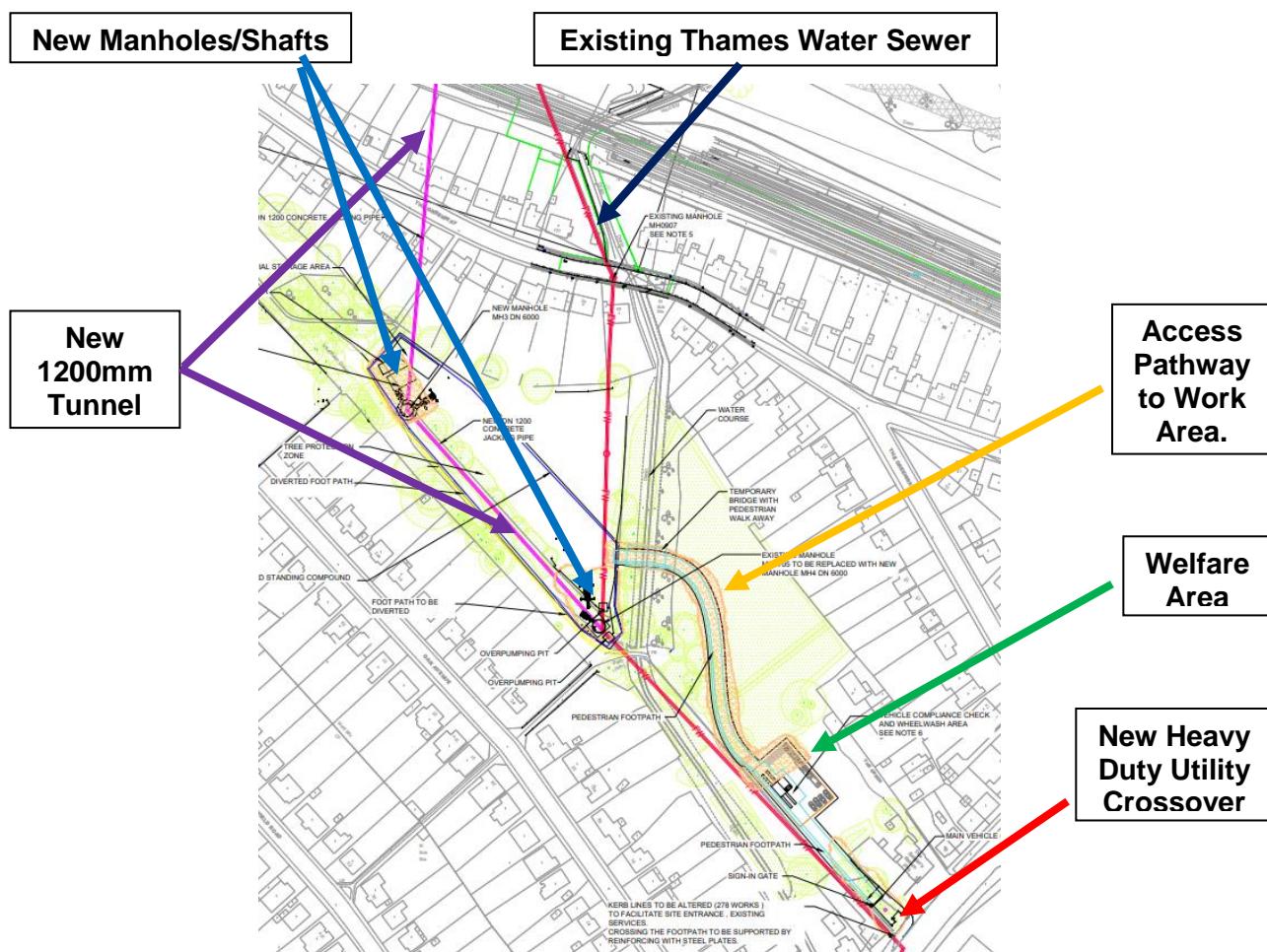
All work will be carried out in accordance with the Health & Safety at Work Act 1974, and Barhale Health & Safety Plan (MAN/HSP) and Environmental Plan as per U&A compliance

- Buried Services Action Card – CG632-03 – Version 1
- HSG47 – Avoiding danger from Underground Services
- Mandatory Code of Practice for Site Set up and Maintenance of corporate image
- PUWER Regulations
- LOLER Regulations
- Control of Vibration at work Regulations
- Control of Noise at work Regulations
- The Control of Substances Hazardous to Health Regulations
- The Working at Height Regulations
- Site Drawings
- Site Induction
- HS2 Code of Construction Practice
- Euro 6 Compliance Vehicles/NRMM Compliance
- Approved Construction Environmental Management Plan - J923.01-DN-LON-004-RP-Z-0003
- Approved Soil Management Plan - J923.01-DN-LON-004-RP-Z-0001
- Approved CONTROL OF POLLUTION ACT 1974 - Section 61
- Dust Risk Assessment
- Copies of the relevant documents are retained on-site for inspection. Any queries relating to the design documents or drawings must be directed to the issuing party for further clarification

## 2.0 Scope of Work

This Construction Method statement covers the activities that will be carried out on the Greenway South Compound in order to divert an 1143mm diameter existing Thames Water sewer. The proposed works are located near to The Green, Ickenham, Ruislip. The existing concrete sewer flows in a southerly direction beneath the existing Chiltern mainline railway, and across the residential cul-de-sac, called the Greenway, further south into The Allotments and then flow east towards High Road Ickenham. The existing sewer will be diverted via the installation of a new 1200mm sewer via tunnelling techniques, this will also involve the construction of two shafts/manholes. There is to be some auxiliary works to allow access and subsequent some reinstatement works. This document will include the sequence of work, site management and quality controls.

See overview image below, which shows the location of the two manhole/shafts, tunnel section, and access road from High Road Ickenham and the compound area.



*Fig. Overall view of the South compound.*

The southern compound will be used to manage the works for Manholes 3 and 4 and associated works. As the majority of construction works in this southern compound is located within the existing allotment area, it will be reinstated as per the agreed standard once the project has been completed.

### 3.0 Principal Health and Safety Considerations

- Underground Services – including unknown services
- Plant movement
- Manual Handling
- Fall from height.
- Damage to local assets
- Lifting Operations
- COSHH
- Fuel Spillage
- HAVS
- Slips, trips and falls
- Environmental nuisance

#### 3.1. Barhale Site Management

##### Barhale

TITLE	NAME	CONTACT DETAILS
CONTRACTS MANAGER	James McKenzie	07944374713
PROJECT MANAGER	Tim O'Donoghue	075508395079
FOREMAN	Michael Green	07966231500
SITE AGENT	Robert Chihaiia	07976 312757
SITE AGENT	Marty Conlon	07977260296
SITE ENGINEER	Andreea Mutescu	07970810180
OPERATIONS MANAGER	Tony Boyle	07432682041

#### 3.2. Community Engagement

- Information will be communicated to the residents and businesses, through information sheets, including details relating to the works themselves, traffic management, site hoarding and compounds. Such information sheets will be distributed at least 2 weeks prior to commencement of works.
- HS2 will operate the HS2 Ltd Public Helpdesk (contact details below) 24 hours per day, 7 days per week for the duration of the works, to handle enquiries, manage complaints and coordinate incident response. A common point of contact in coordination with HS2 will be offered to residents via the HS2 Public Helpdesk to avoid potential confusion and repeated communications with residents during relevant work phases.
- Details of any site investigation and subsequent actions taken will be recorded by the Contractor site supervisor and passed back to the HS2 and Thames Water community engagement team for close out via the HS2 Ltd Public Helpdesk.
- All enquiries, correspondence and complaints received directly from the public or any other organisation or authority will be logged and reported to the HS2 Ltd Public Helpdesk, the HS2 Project Manager and the HS2 community relations team as soon as reasonably practicable, and within 24 hours of receipt.
- On receipt of any complaints an investigation will be made by the contractor (Barhale) to identify the source of the complaint and address the cause of the issue.

- Where the complaint relates to noise and vibration due to construction works all existing BPM and mitigation measures will be reviewed to determine their effectiveness as control measures.
- All measures will be reviewed and implemented to minimise noise and vibration impacts where practicable and prevent future complaints.

***Public enquiries / complaints:***

***HS2 Ltd Public Helpdesk, 24 hours/day:***

***Tel: 08081434434***

***Email: HS2enquiries@hs2.org.uk***

### **3.3. Pre-start consideration**

- Barhale will not commence any works until all the necessary permits and documents are in place and the confirmation from the client has been received.
- No works will commence until all operatives have been briefed on RAMS, understood the scope of works and signed a briefing attendance register which will be attached to the RAMS. (Barhale will complete more details RAMS for the specific construction activities).
- A start of shift briefing will be delivered before works commence on a daily basis. If any changes occurs during the day, works are to stop, inform the supervisor and an updated briefing covering the change will be delivered.
- The start of shift will be at 7:30am. No works involving power tools nor machines will take place before 8:00am or after 6:00pm. This 30min period will be for daily briefings, Toolbox Talks and non-noisy maintenance tasks.
- All areas are to be left, clean and tidy throughout the works and in the end of shift.
- Heras panels and hoarding will be installed around the site perimeter as detailed later in this document.
- Vegetation clearance works will be undertaken to remove/prune trees and bushes as required. This activity will be undertaken during the site mobilisation by a specialist subcontractor, under the supervision of the arboriculturist. The specialist subcontractor works will be covered under their specific RAMS. Root protection measures will be installed on site.
- Two number towable welfare units will be brought on site with 4x4 vehicles. These welfare units will be 24ft units with canteen, office and toilet, to be used temporarily until the main welfare units are setup.
- Temporary site electrical and water supplies will be installed for the welfare facilities from Affinity Water and SSE Networks.

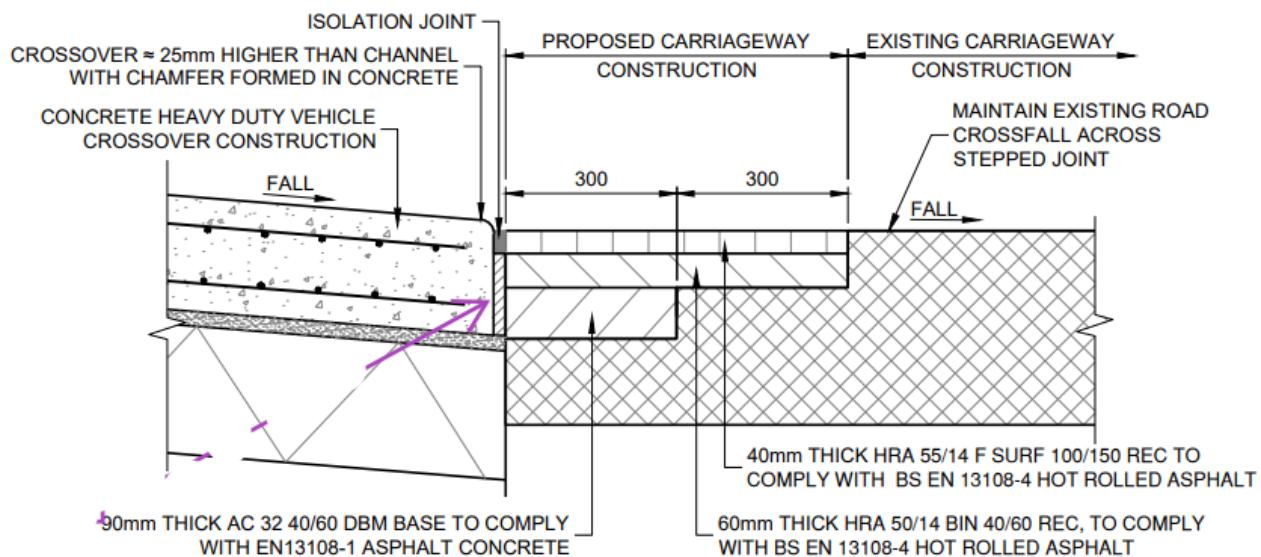
## 4.0 Sequence of works

### Bell mouth Protection Slab

- A concrete Heavy Duty Utility Crossover will be install at the entrance to the southern compound area, at the point of entrance from high Road, Ickenham.
- The Heavy Duty Utility Crossover is to protect existing utilities located within the footpath.
- A design of the Heavy Duty Utility Crossover has been completed by our design partners
- The existing footway material will be removed, with new concrete cast in position as per the design developed.
- The concrete Heavy Duty Utility Crossover will be in position for the duration of the works.



*Fig. Heavy Duty Utility Crossover.*



*Fig. Cross Section of Heavy Duty Utility Crossover.*

### **Tree and Vegetation removal**

- A specialist tree removals company will be the subcontracted for the tree and vegetation removal on the South compound.
- A safe cordon will be established on site before any tree and vegetation works commence.
- The specialist will then safely remove all identified vegetation to ground level, and remove all stumps that are required to be removed.
- An Arboriculturalist will be present to supervise for the duration of the works.
- All cut vegetation will be chipped and removed from site.
- Chipped materials will be taken back to the contractor's depot to be stored/sorted/and recycled as appropriate for grade of material.

*See google image below of a specialist tree removal works*



## Hoardings Installation

- Where required, 2.4m high hoarding will be erected around the South compound.
- See purple outline in diagram below showing hoarding location both around the welfare compound and the allotment area.
- 1.8meter heras fencing will be provided along the access routes, see orange outline in the diagram of the heras fencing locations



*Fig. Hoarding and Heras Fencing locations surrounding the works.*

- The hoarding and fencing will provide a safety barrier to prevent members of the public entering the site.
- The hoarding will be green in colour, to be aesthetically pleasant on the eye and to minimise visual impact on the scheme.
- A flower design, as shown below will be on the outside of the hoarding around the compound area. This design was chosen after engagement with the local residents who live on The Green.



*Fig. Hoarding and Heras Fencing locations surrounding the works.*

## **Top-Soil Removal**

- All the topsoil on and around the welfare compound area will be stripped using a tracked excavator and placed into a dumper.



- The topsoil will be stockpiled on site in designated areas.
- The stripped topsoil will be seeded with grass seeds to protect the soil why been stored on site.
- The topsoil will be relayed upon completion of the works.
- The topsoil in the allotment area will not be stockpiled on site. It will be removed from site as it is made up of various different soils and would not be practical to replace the allotments with different soil types.
- After engagement with the allotment holders, the allotment area will be replaced with new fertile top soil on completion of the works.

## **South Welfare compound**

- A South welfare compound will be set up to accommodate offices, welfare units, wheel wash and WC facilities for the site team, clients and visitors to the site.
- The compound will also contain small number of parking facilities for the site team, however the site will encourage work force to use public transport where possible.
- There will be a key clamp (or similar) barrier around the walkway to segregate vehicles and people in the compound area.
- The stripped topsoil will be stored on the side closest the local resident to avail of the noise mitigation properties off the bunded soil.
- See welfare compound layout below:



### *Fig. Compound Layout.*

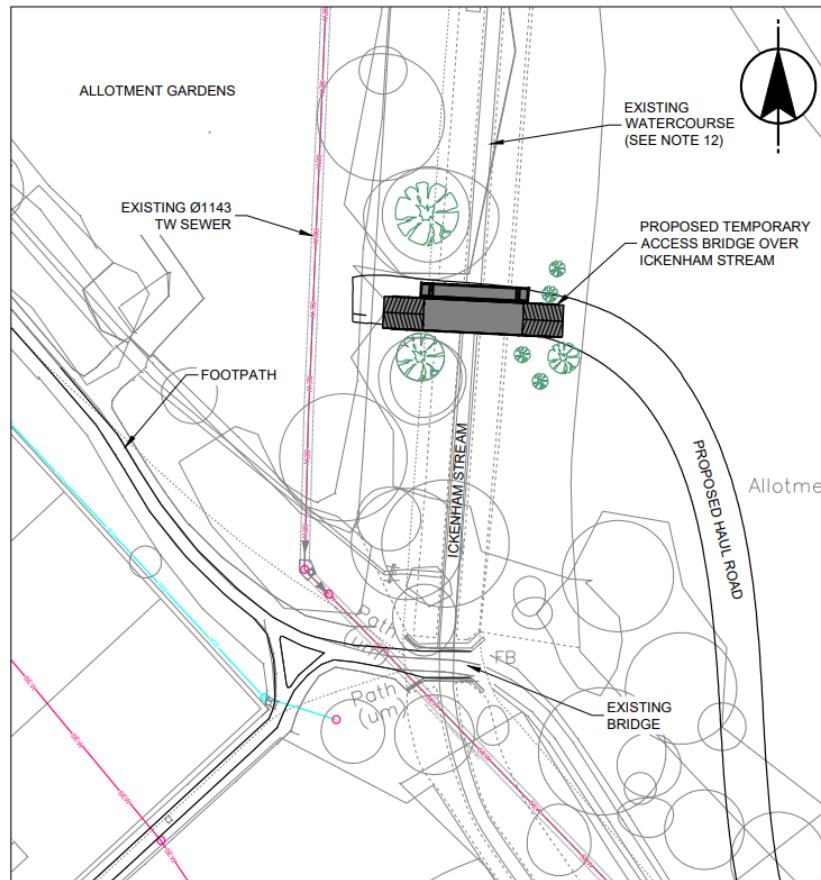
## **Working area within the allotment area**

- A large part of the allotment area will be used as the southern compound which will accommodate construction activities for Manholes 3 and 4, tunnelling equipment, piling rigs, over pumping equipment, excavators, cranes, stockpiles and muck bays.
- Hard standing to be placed on entire compound to allow for manoeuvre of heavy plant.
- On the completion of all works the allotment is to be reinstated as per its existing condition.

## **Temporary Bridge Installation**

- A temporary vehicle and pedestrian bridge will be installed across the Ickenham Stream to gain access into the allotment area.
- Engagement has been had with the Environmental Agency and the necessary consents have been applied for prior to the installation of this bridge.
- This bridge will span the existing water course known as the Ickenham stream, and allow us to cross with vehicles and plant needed for the works.
- The temporary bridge has been designed to accommodate the maximum anticipated vehicle weight for the project, including the proposed crane.

- The bridge will be wide enough to accommodate the haul road and a pedestrian footpath.
- This will eliminate the need for an additional crossing point for pedestrians.
- Once the work has been completed, the bridge will be removed leaving the stream unscathed and in a natural state as it previously was.



*Fig. Temporary Bridge across Ickenham Stream.*

### Haul Road Construction

- A temporary haul road, approx. 4m wide, will be constructed from the site entrance up to Manhole 3 location.
- The topsoil will firstly be stripped and a geotextile layer will be placed over it.
- There will be two types of haul road utilised, both will be porous to allow rainwater to filter through to eliminate any surface water run-off.
- The haul road as far as the welfare area will be made up of a 200mm compacted layer of crushed stone, beneath a 150mm layer of hot rolled tarmac.
- This will be allowed to set before any site traffic passes over it.
- From the compound area to the last manhole location, a shingle based road construction will be used, with a geo-cell product to increase its structural strength.
- Suitable passing places will be incorporated into the layout to accommodate two-way vehicle movements.
- The porous nature of the haul roads will prevent any risks of local flooding as a result of the works.



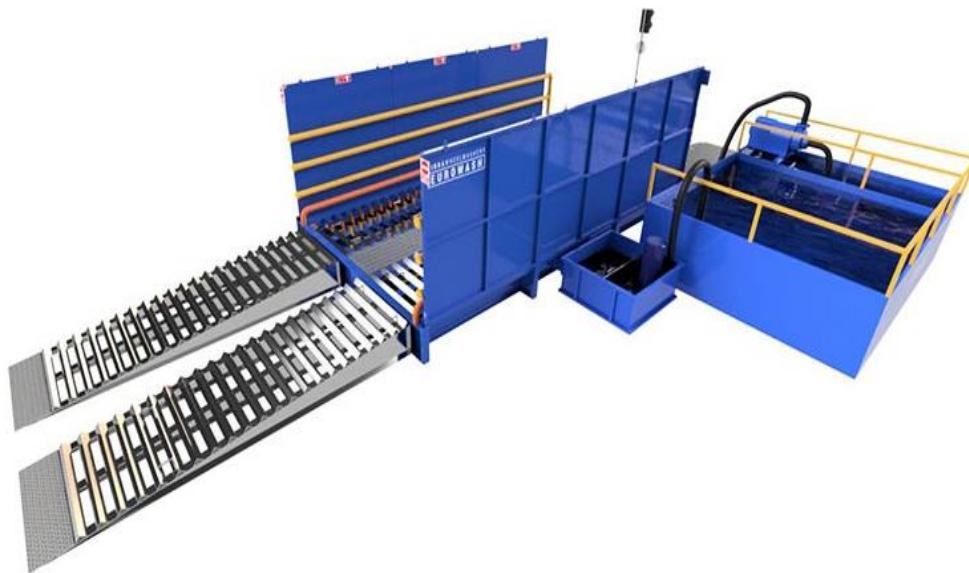
*Fig. Typical Cross Section of Haul Road.*

### **Pedestrian Walkway**

- A 1.5m pedestrian footpath will be constructed alongside the haul roads. These footpaths will be segregated from the haul roads and pedestrian crossing points will be added where necessary.
- Wider vehicle crossing points will be incorporated with the pedestrian footpaths at locations where the haul road crosses the water course.

### **Wheel-Wash**

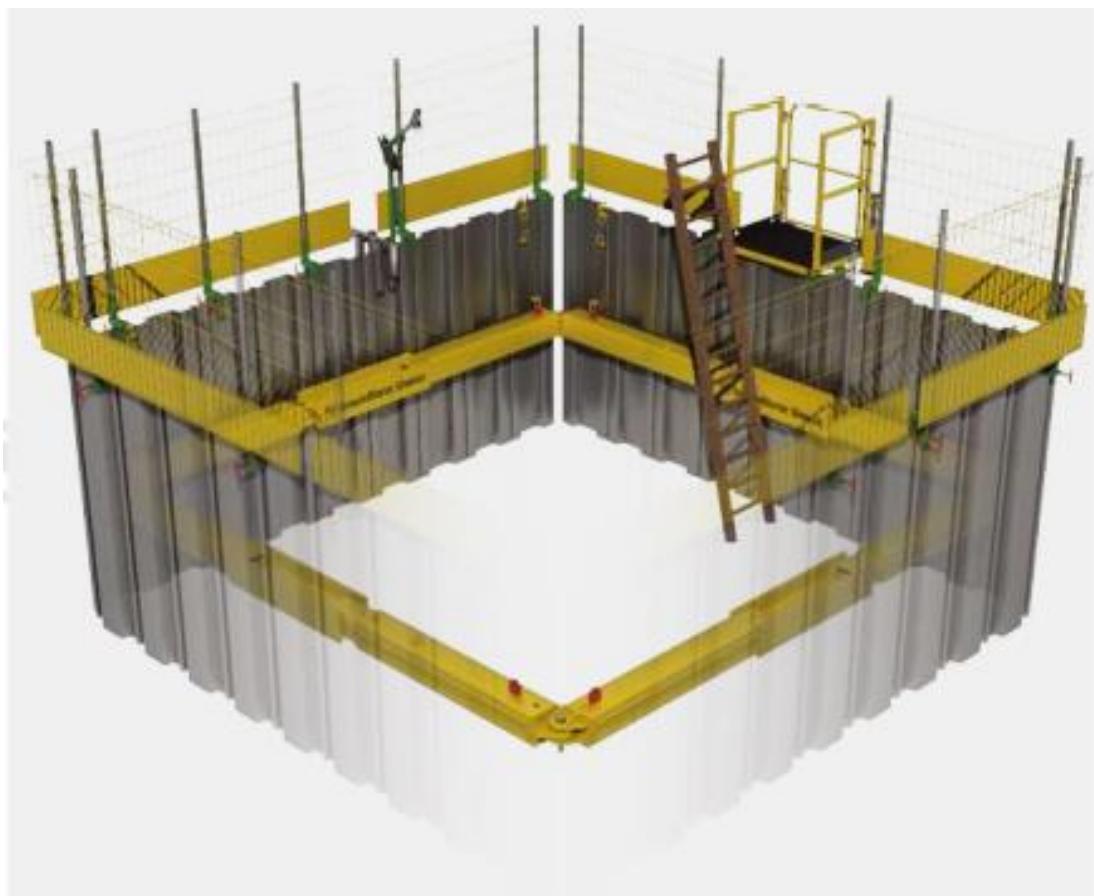
- An eco-wheel wash system will be installed on the southern compound.
- All vehicles must pass through the wheel wash before leaving the site.
- This will prevent transport of construction debris onto the public road.
- The site security will check the state of the vehicles wheels before allowing them to leave site and onto High Road, Ickenham.
- The wheel wash system will operate a water recycling system to minimise the water usage.



*Fig. Wheel Wash system or similar to be positioned in Southern Compound.*

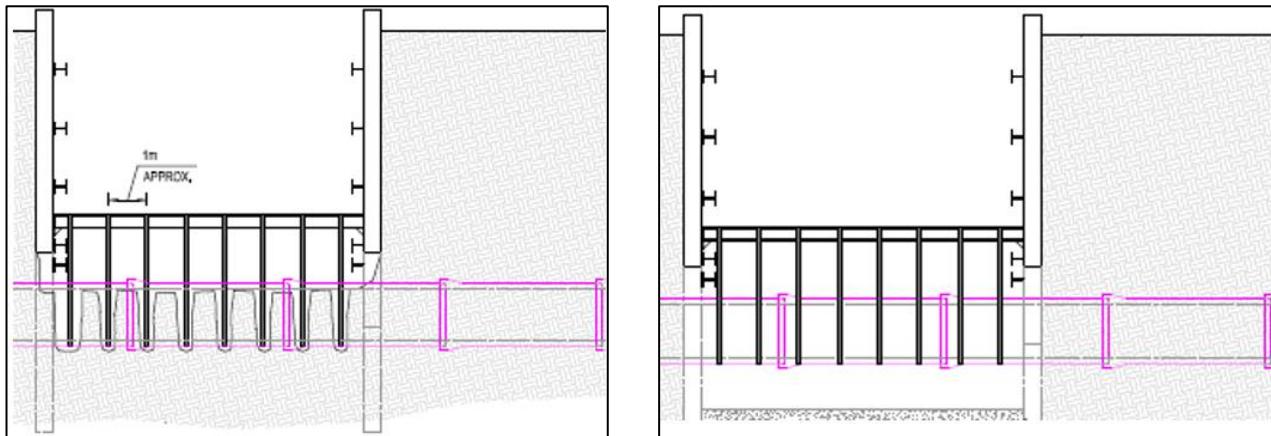
## **Construction of MH04**

- For the construction of shaft/manhole 4, the manhole will be constructed from the bottom up with a sheeted excavation.
- Sheet piles to be installed using the piling rig and piles to be pre driven up to 2m above the crown of the existing sewer to avoid any excess vibration damaging the sewer.
- Once the sheet piles are installed above the existing sewer, dewatering pumps to be installed around the proposed excavations.
- Engagement has been had with the Environmental Agency and the necessary consents have been applied for from the Environmental Agency for the abstraction and discharge of the de-watering water to the local water course.
- The excavation will begin with the use of a clamshell bucket attached to the excavator. The excavated material will be loaded into a dumper and moved to the compound muck bay.
- The excavations will be completed up to 2m above existing sewer. After that point, a smaller excavator (3-5ton) is to be lowered into the cofferdam and the remaining material will be excavated with due safety procedures for working around the live Thames Water sewer. Trial holes will be excavated within the excavation in advance to mitigate any damages to the existing sewer.
- At the same time, the sheet piles will be pushed and secured in place.



*Fig. Visual representation of a sheeted excavation.*

- An over pumping arrangement on the existing Thames Water sewer will be installed, this will be left on standby in case of damage to existing sewer.
- Once the existing sewer is located, the soil either side of the sewer will be excavated to the base of the existing pipe to allow for support straps to be installed around the sewer.
- Once the straps are in place, further excavation will commence to the formation level for the reinforced concrete slab.
- The concrete blinding and structural slab will then be constructed.



*Fig. Support to existing Thames Water Sewer*

- When the structural slab is completed, one number concrete shaft ring will be positioned beneath the sewer as per the approved design drawings.
- In-situ concrete will be poured within the shaft perimeter.
- A temporary head wall to be constructed against the sheet piles to retrieve the Tunnel Boring Machine (TBM). This is to prevent any ground loss during the retrieval of the TBM.
- Once the tunnelling works have been completed and the TBM removed, the new pipe will be pushed up to the concrete shaft head wall.
- The second shaft ring will be constructed with modifications around the incoming and outgoing pipes.
- Then the remainder of the concrete shaft segments can be positioned and built up to the required finished ground level. The excavation will be backfilled as the concrete shaft segments are installed.
- Once the new pipes are installed, the top half perimeter of the existing sewer is to be cut and removed to build the benching works for the proposed manhole. The over pumping shall commence when construction on the benching works begins.
- Flow can be diverted into the new system when the benching works are complete. Any remaining shaft furniture (handrails, ladders, etc) is to be installed, cover slabs placed, and excavations backfilled to the required levels.

## **Construction of MH03**

- For the construction of shaft/manhole 3, the manhole will be constructed from the top down via a jack-down technique.

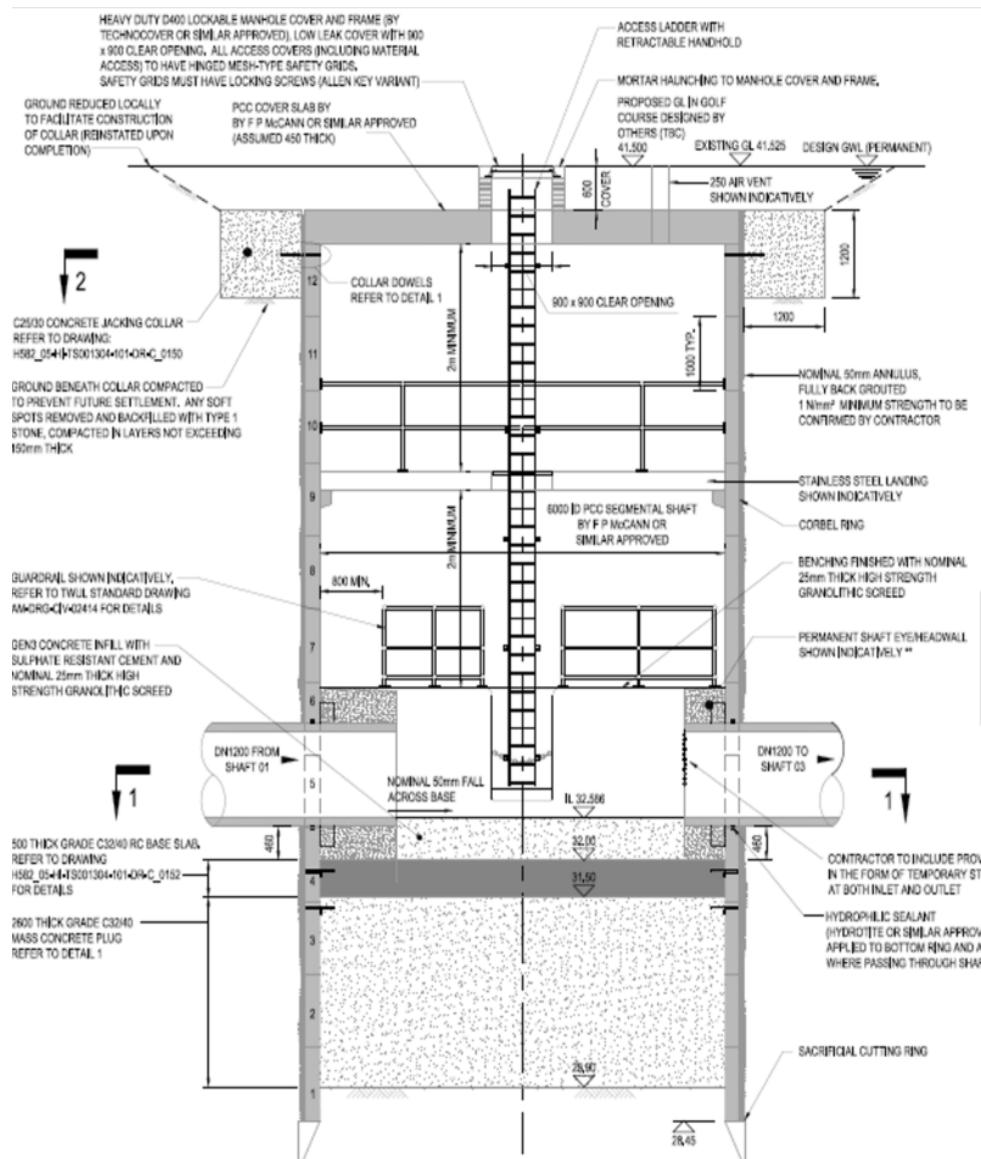
- The existing ground level will be reduced as per the design drawings to the bottom of the concrete collar level, an in-situ steel cutting edge is set upon prepared level surface, ground levelled with a section of concrete blinded.
- The steel cutting edge will then be assembled.
- The concrete segments will be positioned onto the cutting edge.
- Steel reinforced will be positioned for the collar, concrete will be poured in position.
- A suitable annulus between the concrete collar and the segments will be allowed for subsequent lubrication as required.
- Jacking gallows will be positioned within the concrete collar, the gallows will be used to guide the shaft as the excavation progresses.
- By excavating within the shaft rings with the use of a clamshell bucket attached to the excavator and with the assistance of hydraulic jacking gallows the concrete shaft rings will sink into the ground in a controlled manner.
- Additional concrete shaft rings are then added at the surface, as the shafts continues to be lowered into the existing ground.



*Fig. Visual representation of shaft construction using Jack-down technique*

- A reinforced concrete structural base will then be completed prior to tunnelling works commence.
- This shaft will be used for the reception of the Tunnel Boring machine (TBM) from Manhole 2 (north of the railway) and for the launch of the TBM to Manhole 4 location.
- The back-wall for this shaft is to be constructed as per the temporary design

- On completion of the pipe jacking, the manhole benching arrangement will be completed to suite the pipe channel orientation.
- Once the benching works are completed, all internal furniture such as shaft ladders, handrails, intermediate landings and chains to be installed as part of the final works.
- The shaft cover will then be installed and backfilled.
- For each shaft cover slab, 2 openings have been allocated, each 900 x 900mm in dimension.



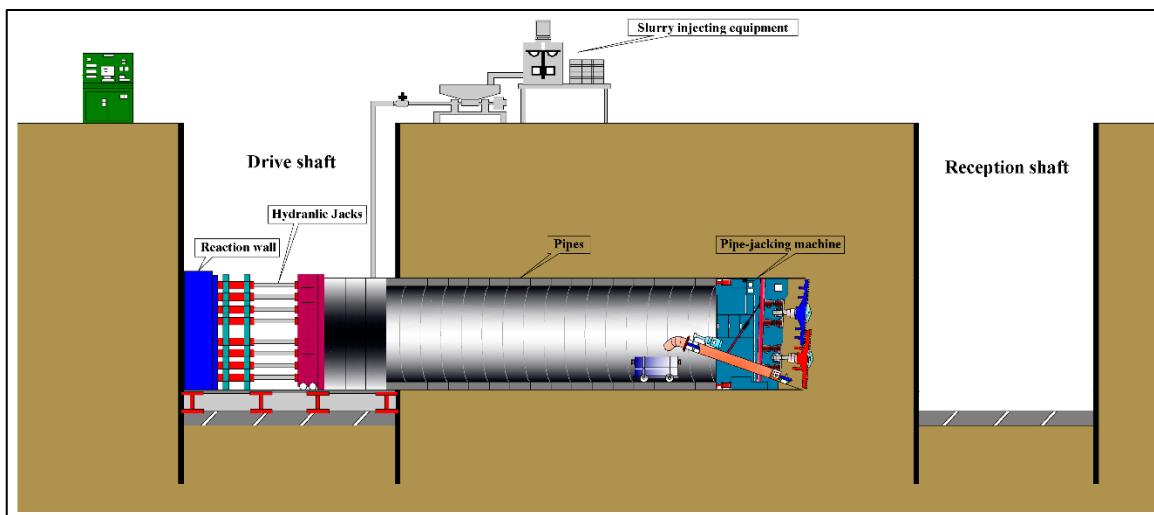
*Fig. Design Drawing of Manhole 3*

## Tunnelling

- The new sewer is to be constructed using a pipe jacking technique utilising a 1200mm Tunnel Boring Machine (TBM).
- The pipe jacking method is based on the principle of driving a string of pipes from a launch shaft to a reception shaft using a tunnelling machine positioned at the front and hydraulic jacks to drive it forward. Once the thrust cylinders have reached their final position, they are retracted. The next tunnelling pipe is lowered into the launch shaft,

installed and then pushed forward. This process is repeated until the reception shaft has been reached.

- The pipes are made of high strength concrete to withstand the high jacking forces, forming the driving elements and permanent supports at the same time. The pipe wall thickness and weight are determined by the maximum compression forces used.
- The slurry (mixture of spoil and water) from the TBM will be moved to ground-level. The water will be separated from the spoil. The water will be reused and the spoil will be removed from site by a licenced waste removal contractors.
- Once the pipe jacking has been completed, the annulus's can be filled with grout and connections can be established within the manholes (benching, etc.) as part of the construction works.
- The direction of tunnelling from each manhole is as follows:
- Manhole 3 will be used as the reception shaft for MH2-MH3 tunnel drive and as a drive/launch shaft for MH3-MH4 tunnel.
- Manhole 4 will be used as the reception shaft for the MH3-MH4 tunnel length



*Fig. Visual representation tunnelling set-up*

### Reinstatement

- Once the new Thames Water sewer is commissioned and live. The area taken for the completion of the works will be reinstated.
- The allotments as stated earlier will be re-laid and new topsoil positioned.
- The topsoil for the allotments will newly imported topsoil which will be tested in advance of importing to site.
- New mature trees will be installed to replace any tree removed as part of the vegetation clearance.
- Mature trees of a similar natures will be replanted, with the exception of the replanting of Oak trees. No Oak trees will be replanted.
- The temporary bridge utilised for the crossing of the Ickenham Stream will be removed.
- The haul roads installed at the mobilisation stage of the scheme will be removed.
- The topsoil strip around the green will be reinstated as outlined within the site Soil Management Plan.
- All fencing and hoarding installed as part of the scheme will be removed from site.
- The heavy duty utility crossover will be removed as one of the last activities on site.

## 6.0 Appendices

**Appendix A:** Site location

**Appendix B:** Nearest hospital route

**Appendix C:** Barhale Site Organigram

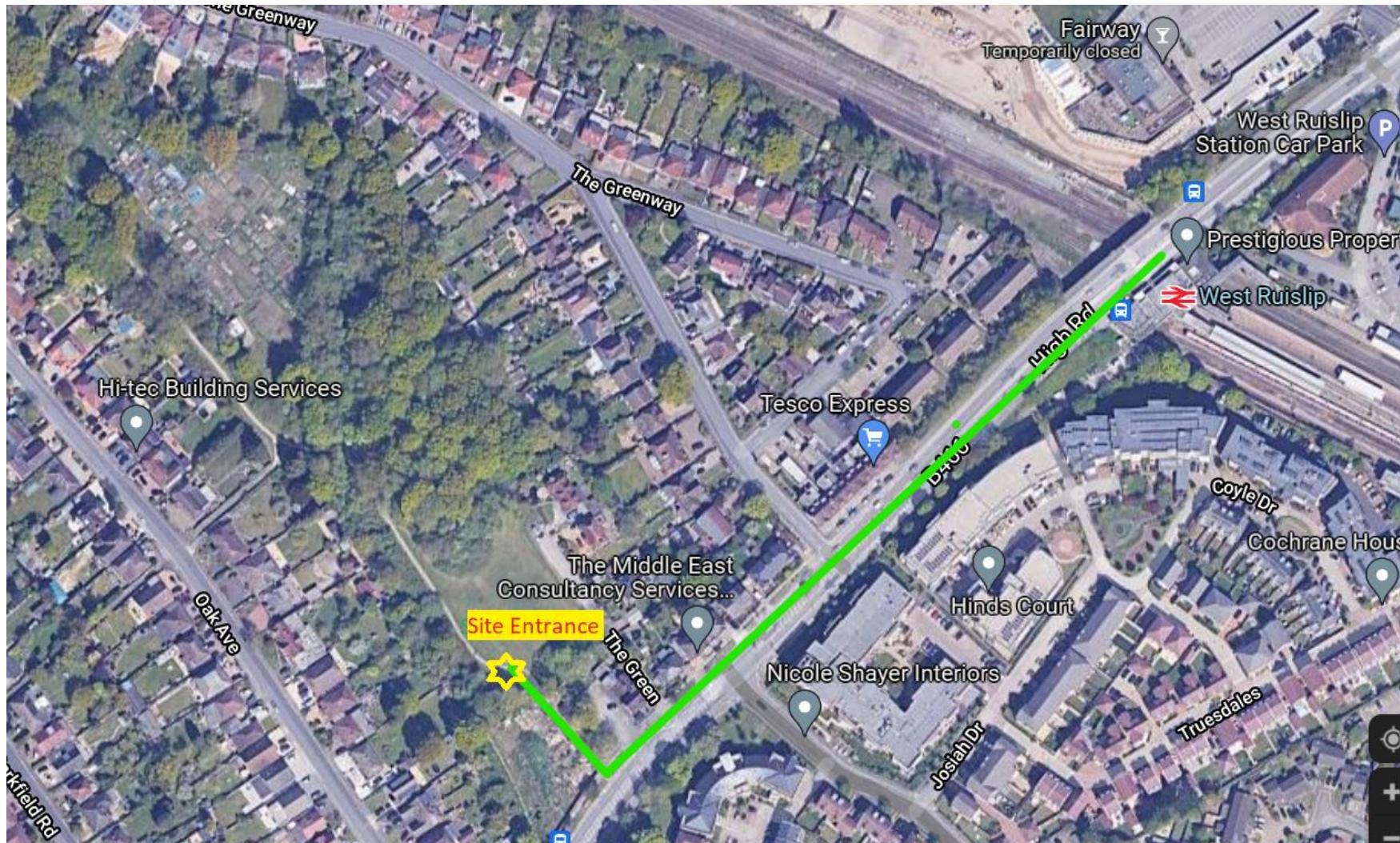
**Appendix D:** Minimum & Task specific PPE

**Appendix E:** Programme

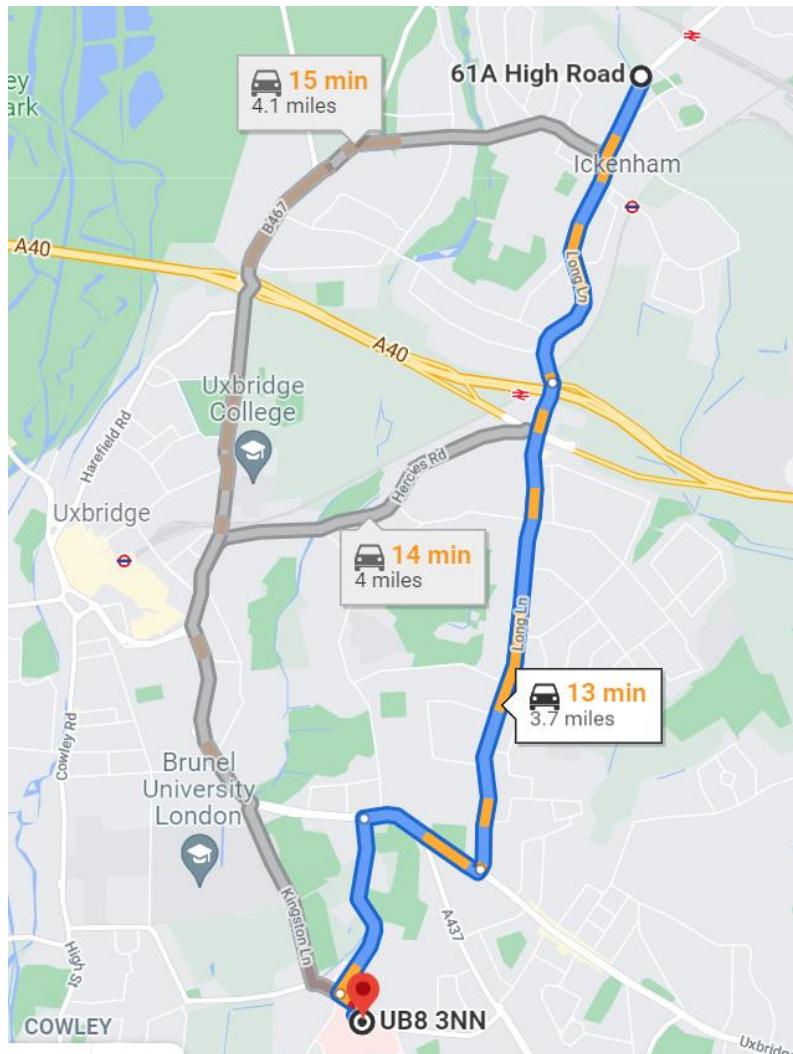
**Appendix F:** Dust management

**Appendix G:** Noise management

## Appendix A: Site Location: 61A High Rd, Ickenham, Uxbridge UB10 8LG



## Appendix B: Route to nearest A&E Hospital.



13 min (3.7 miles)

via B466 and Long Ln/A437

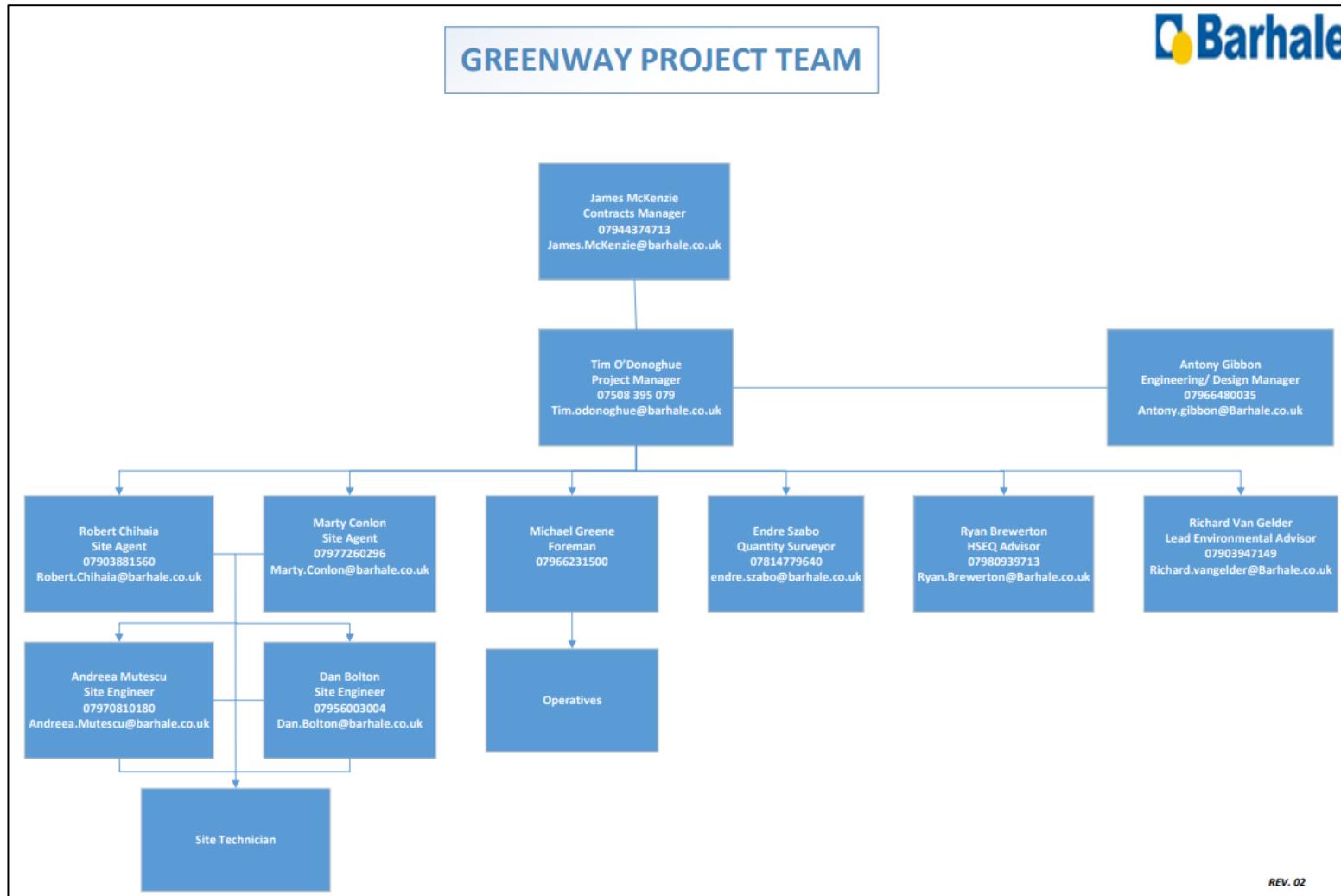
Fastest route, despite the usual traffic



- ↑ Head south-west on High Rd/B466 towards Oak Ave
  - Continue to follow B466

1.0 mi
- ↑ Continue onto Long Ln/A437
- 1.5 mi
- ↗ Use any lane to turn right onto Uxbridge Rd/A4020
- 0.4 mi
- ↖ Turn left onto Royal Ln
- 0.6 mi
- 📍 At the roundabout, take the 1st exit onto Field Heath Rd
- 371 ft
- ↗ Turn right at Crispin Way
  - Destination will be on the left

## Appendix C: Barhale Site Organigram.



## Appendix D: Minimum & Task specific PPE

### Minimum PPE

PPE	Task
	Minimum PPE (all duties)
Gloves	Safety gloves - dry weather (e.g. Skytec Tons Red) Safety gloves - wet weather (e.g. Showa 306) Safety gloves - cold weather (e.g. Showa 406) Any type of glove to meet EN388:2003 and EN388:2016 standard specifications
Boots	Minimum S3 Class: Toe protection, mid sole penetration resistance, resistance to water penetration and absorption
Hard Hat	Safety helmet to meet EN397 and EN 12492 Standards
Hi-vis top	Orange long sleeve
Hi-vis Trousers	Orange
Ear protection	N/A
Eye protection	Minimum impact safety glasses
Face Mask	N/A

## Task specific PPE:

PPE	Task					
	Noisy tasks (>80 db)	Breaking/Excavation	Refuelling	Concrete	Other COSHH	Cutting/Grinding
Gloves	Minimum PPE	Arc resistant (permit specific) (e.g. Showa 240)	Chemical protection gloves (e.g. Showa 720R)	Chemical protection gloves (e.g. Showa 720R)	Refer to COSHH assessment	Safety gloves for cut protection (e.g. Skytec TonsTP5)
Boots	Minimum PPE	Minimum PPE	Minimum PPE	Wellies - task specific or Minimum PPE	Refer to COSHH assessment	Minimum PPE
Hard Hat	Minimum PPE	Minimum PPE	Minimum PPE	Minimum PPE	Refer to COSHH assessment	Minimum PPE
Hi-vis top	Minimum PPE	Orange long sleeve - FR and ARC resistant	Minimum PPE	White suite - task specific	Refer to COSHH assessment	Minimum PPE
Hi-vis Trousers	Minimum PPE	Orange - FR and ARC resistant	Minimum PPE	White suite - task specific	Refer to COSHH assessment	Minimum PPE
Ear protection	Ear plugs or ear muffs. (e.g. 3M EX01021)	Ear plugs or ear muffs. (e.g. 3M EX01021)	Minimum PPE	Minimum PPE	N/A	Task specific - Ear plugs or ear muffs. (e.g. 3M EX01021)
Eye protection	Minimum PPE	Minimum PPE	Minimum PPE	Minimum PPE	Refer to COSHH assessment	Goggles
Face Mask	Minimum PPE	N/A	N/A	Specific per individual based on face fit test. E.g. (FFP3 or 3M)	Refer to COSHH assessment & specific per individual based on face fit test. E.g. (FFP3 or 3M)	Minimum PPE

## Appendix E: Programme

An outline construction programme is provided in the table below. Highlighted cells indicate calendar months in which works will occur. Works are however typically sequential across each phase and therefore do not always occur for the full month in each case.

**Outline construction programme for the South site (November 2021 – March 2023)**

Description	Nov '21	Dec '21	Jan '22	Feb '22	Mar '22	Apr '22	May '22	Jun '22	Jul '22	Aug '22	Sep '22	Oct '22	Nov '22	Dec '22	Jan '23	Feb '23	Mar '23
Vegetation clearance																	
Installation of hoarding																	
Site compound set up																	
Construction of haul roads																	
MH03 shaft construction - Caisson																	
MH03 Backfill & Reinstate																	
MH04 Shaft construction - Dewatering and excavation																	
MH04 Shaft construction - Sheet piling																	
MH04 Backfill and reinstate																	
Tunnelling MH02 - MH03																	
Tunnelling MH03 - MH04																	
Site demobilisation including removal of compounds, hoarding and haul roads																	

## Appendix F: Dust management

### Screening

Sensitive receptors were identified within 20m of the construction works and track out route; as such, a Construction dust risk assessment has been undertaken. See the Construction Environmental Management Plan (CEMP) for further details. No ecological receptors have been identified within 50m of the site the closest ecological receptor is the Ruislip Wood Site of Special Scientific Interest (SSSI) which is 1.8km north of the site, therefore construction effects on ecological receptors were not been considered further.

### Dust impacts

The magnitude descriptors that have been applied are presented in the table below along with the justification for the selections.

Table - Dust emission magnitude

<i>Activity</i>	<i>Dust Emission Magnitude</i>	<i>Justification</i>
Demolition	Small	The total building volume demolition is less than 20,000m <sup>3</sup> and consists of demolishing temporary sheds for a maximum of two weeks in the winter months.
Earthworks	Small	The site area is approximately 4,500m <sup>2</sup> , although earthworks activities are not anticipated over the full site area. There will be less than 20,000 tonnes of earthwork material being moved on site. Less than 5 heavy earth-moving vehicles will be on site at any one time. The maximum duration of activities will likely be two months, in winter (wetter months).
Construction	Small	Construction materials have a total volume of less than 25,000m <sup>3</sup> . Pre-mixed concrete will be delivered to site, construction is expected to last less than two years.
Trackout	Small	The length of unpaved roads will be greater than 120m, and it is expected that there will be less than 10 one-way daily HDV movements.

The overall risk of dust soiling effects from the construction phase are deemed to be 'Low' for demolition, earthworks and construction. In the case of Trackout the risk is expected to be 'Negligible'. The overall risk of PM10 health effects for all other activities has been found to be 'Negligible'.

## Mitigation

The construction activities are predicted to have, at worst, a 'Low' risk of dust effects for the South site. Best practice mitigation measures for the respective sites as outlined in guidance from the IAQM1 are presented below. The HS2 Code of Construction Practice (CoCP) will also be adhered to as part of the HS2 Environmental Minimum Requirements (EMRs), as required for the project.

The mitigation below is recommended within the IAQM guidance1 as suitable for sites with a 'low' risk of dust effects:

- **Site Management:**

- Display the name and contact details of person(s) accountable for air quality and dust issues on the site boundary. This may be the environment manager/engineer or the site manager.
- Display the head or regional office contact information – Record all dust and air quality complaints, identify cause(s), take appropriate measures to reduce emissions in a timely manner, and record the measures taken
- Make the complaints log available to the local authority when asked
- Record any exceptional incidents that cause dust and/or air emissions, either on- or offsite, and the action taken to resolve the situation in the logbook
- Carry out regular site inspections to monitor compliance with the air quality and dust control procedures, record inspection results, and make an inspection log available to the local authority when asked

- **Preparing and maintaining the site:**

- Plan site layout so that machinery and dust causing activities are located away from receptors, as far as is possible.
- Erect solid screens or barriers around dusty activities or the site boundary that are at least as high as any stockpiles on site
- Avoid site runoff of water or mud

- **Operating vehicle/ machinery:**

- Ensure all vehicles switch off engines when stationary - no idling vehicles
- Avoid the use of diesel- or petrol- powered generators and use mains electricity or battery powered equipment where practicable.

- **Operations:**

- Only use cutting, grinding or sawing equipment fitted or in conjunction with suitable dust suppression techniques such as water sprays or local extraction, e.g. suitable local exhaust ventilation systems
- Ensure an adequate water supply on the site for effective dust/particulate matter suppression/mitigation, using non-potable water where possible and appropriate – Use enclosed chutes and conveyors and covered skips

- **Waste management**

- Avoid bonfires and burning of waste materials.
- It is recommended that the dust risk assessments are reviewed prior to the works to ensure that the assumptions are still valid and the most appropriate mitigation proportional to the risk of dust effects is implemented.

## Appendix G: Noise management

Best practice means (BPM) will be applied during construction works to minimise noise at neighboring residential properties and other sensitive receptors (including local businesses and quiet areas designated by the local authority) arising from construction activities.

A Control of Pollution Act 1974 – Section 61 has been approved by the Environmental Department of London Borough of Hillingdon

BPM will include noise control at source, for example:

- The selection of quiet and low vibration equipment.
- Review of construction programme and methodology to consider quieter methods
- Location of equipment on site
- Control of working hours
- The provision of acoustic barriers
- The use of less intrusive alarm systems

The effects of noise from construction sites will be controlled by introducing management and monitoring processes to ensure that BPM are planned and employed to minimise the noise levels during construction.

Site hoarding will be erected around the site welfare boundary and it will provide acoustic screening during construction, together with an inspection and maintenance schedule for such features.

Where heras fencing is in place, acoustic barriers will be used where noise levels are deemed to be high i.e. around a generator.



## Confirmation of Risk Assessment & Method Statement Briefing

Prior to commencing the activities covered in this safe system of work document all personnel are to sign below to confirm that a clear briefing explaining the job has been given and is understood: