



**CALL:** 01273 493863  
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## Risk Assessments and Method Statements for piling works at C/O Guildmore, 87 Blackwall Lane, London, SE10 0AP

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## METHOD STATEMENT FOR PILING WORKS

### 1. DESCRIPTION OF WORKS AND CONTRACT TEAM

1.1 The site is situated in Blackwell Lane, London. Our contracts team, including management, have experience of similar construction schemes. The SFA piling system adopted for this scheme has no percussive elements and has very little vibration and as such is the least intrusive of any piling system. The piles when drilled down to depth are pumped with concrete from the bottom up under pressure through the middle of the auger. The bored pile is never left empty, so no collapsing of bore holes is possible. Operatives are to be aware of any over pumping of concrete and any excessive losses should be reported to the site management and the site team can then report it to the local water company.

1.2 Start date for the piling works is w/c 13<sup>th</sup> November 2023, programmed for a period of 13 days.

1.3 Southern Piling has conducted a thorough review of both the Thames Water Asset Plan and the topographical survey. Based on our assessment, we have not identified any subsurface water infrastructure on the site that could be at risk of damage. You can access a copy of the Thames Water Asset Plan and the topographical survey in Appendices 2 and 3.

1.4 Southern piling can confirm that there is no significant risk to groundwater, which has been summarised in the following key points;

1.4.1 SFA boring process will drive the made ground upwards not downwards during construction.

1.4.2 The SFA process mandates that the weight of spoil on the auger during boring and the weight of concrete during concreting always exceed the pressure exerted by groundwater, preventing any inflow into the bore.

1.4.3 Soil displacement around the pile is kept to a minimum, resulting in negligible radial and vertical soil movements.

1.4.4 Concrete is directly cast onto the surrounding soil.

1.4.5 Removal of spoil from the pile installation location is done in accordance with the agreed method, either by using designated skip bins or lorries provided by the main contractor.

1.4.6 Our equipment and concrete processes are equipped with drip trays to prevent any spills or leaks.

## 2. SCOPE OF METHOD STATEMENT/WORKS

2.1 This method statement confirms the proposals for the installation of 145 No. 350 diameter 12.0m average depth (Max 17.3m), SFA piles and 11 No. 450 diameter 20.4m average depth (Max 28.0m), SFA piles.

## 3. DRAWING REFERENCES

3.1 Please refer to drawings listed below:

Piling layout: C0147-VED-XX-FN-DR-S-1001-C01

Pile design: P411\_EC\_PileSchedule\_RevC\_DesignReport (In-House)

## 4. ACCESS

4.1 Site establishment will be confirmed at the pre-start meeting. Access for all plant and equipment will be via Azof Street. Deliveries will be on a low loader for the rig and pre-slung rigid loader-craned lorries for the rest of the equipment.

4.2 Banksman are to be made available by the main contractor where necessary, for manoeuvring vehicles from the road on to site and to offer safety to pedestrians and all parties and to avoid damage to property and vehicles.

## 5. PLANT, EQUIPMENT AND TOOLS

### 5.1 Anticipated Plant Requirements

- Klemm 709 piling rig, delivered by a low loader.
- Putzmeister concrete pump, lifted in to place by a loader-craned rigid lorry.
- Hymix agitator, lifted in to place by a loader-craned rigid lorry.
- Kaeser 2 tool air compressor, lifted in to place by a loader-craned rigid lorry.
- 13-tonne 360° tracked excavator (supplied and operated by the main contractor).
- All plant will have spill kits and static plant will have plant nappies.

### 5.2 Anticipated Small Tools

- Hand held mechanical cutting gear (abrasive wheels) for cutting reinforcement if required. This is unlikely, but is noted for reference.
- Shovels and wheelbarrows, if required, to remove spoil from around pile head.

### 5.3 Other equipment

- Lifting strops.
- Safety harness.
- Fall arrester.
- Metal washout tray.



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## 6. LABOUR AND SUPERVISION

All our operatives hold relevant CPCS/CSCS qualifications/cards.

All our Foremen hold SSSTS certificates and are responsible for ensuring compliance with the agreed scope of work. To the best of our knowledge are fit to perform the duties required of them.

Operations Manager: Keith Taylor (07741 314 767)

Contracts Managers: James Simporis & James Woodcock (01273 493 863)

Piling Operator: TBA

Piling Operative: TBA

Piling Labourer: TBA

Steel Fixer: TBA

## 7. HEALTH, SAFETY AND WELFARE

### 7.1 First Aid

The project Principal Contractor will be providing first aid trained personnel and equipment (kit) for all those working on site. Details on emergency procedures, including first aid provision, will be provided to all site personnel during the project site induction. In addition, the Company Site Supervisor have received first aid training from the First Aid at Work scheme and a suitably stocked first aid kit (for the number of people in the Company team) will be held on the Company vehicle.

### 7.2 Risk Assessments

The safest method of works will be assessed and implemented, so far as is reasonably practicable. To do so will be reflected in our Risk Assessment prepared for the contract which also identifies the significant risks and their mitigating control measures.

### 7.3 Welfare Facilities

Site welfare and first aid arrangements will be provided by the main contractor.

### 7.4 PPE

All site operatives will wear the following PPE at all times while on site:

- Safety Boots
- Hi-Vis Vests or Jackets
- Hard Hats
- Gloves conforming to EN388
  - Gloves conforming to EN374-2 to be worn when handling concrete.
- Eye Protection conforming to EN166 mandatory unless in heavy rain, then at Site Manager's discretion; EN166B for blowing out operations and abrasive wheel usage.

Leather gauntlet gloves and a welding mask to be worn whilst welding. Hot works permit must be obtained from Main/Principal Contractor. Three welding screens to be used to protect other operatives/bystanders from arc-eye.

### 7.5 COSHH

Sample data sheets for the following materials are attached. Concrete, Gas Oil, Engine Oil and Hydraulic Oil.

### 7.6 Waste

No waste licences are held so we will be working under the main contractor's provision.

## 8. TESTING AND RECORDS

8.1 Plant is covered by Annual Examination; Certification is retained by the Rig Operator or available from our head office, telephone 01273 493 863.

8.2 No material tests are required. Integrity testing of the piles will be carried out when the piles are cut down to their finished level. A separate method statement, if required, will be forwarded at a later date.

## 9. PROPOSED METHOD STATEMENT

9.1 All Southern Piling operatives will have attended the site safety induction with Main Contractor and will have been briefed as to the nature of the works. The contracts team will monitor the progress of the works and will review the risk assessment and method statement to ensure best practice is maintained. Amendments will be reviewed by either James Simporis or James Woodcock and recorded by way of a suffix taking the form of “\_Rev(letter)”.

9.2 All deliveries will access and egress the site as detailed in item 4. Vehicles will manoeuvre in a safe manner, observing any site speed limits, under the supervision of Southern Piling personnel.

9.3 Before allowing the piling rig to enter site, ensure that there are no overhead cables or obstructions which could be damaged by rig movements.

9.4 Before Piling commences Southern Piling Supervisor must:

9.4.1 Review the site-specific risk assessment, noting any special requirements and ensure that all piling operatives have received the necessary training to carry out their work.

9.4.2 Following site induction, the Supervisor shall brief the piling operatives and steel fixer on the site health and safety requirements and check that they have all of the necessary PPE; the excavator driver shall adhere to briefings and instruction issued by the main contractor.

9.5 Ensure that the site has been suitably prepared, and the pile mat is level and compact, any services have been clearly identified, protected, and diverted as necessary and a permit to work has been signed by the main contractor. If other trades are working near the piling area the Main Contractor is to provide fencing to segregate the piling area from other operations - the Southern Piling Supervisor can stop piling works if it is deemed that follow on trades are working too close and affecting the safety of himself and others.

9.6 Ensure that Southern Piling employers and public liability insurances have been made available to the client.

9.7 Ensure that no personnel, other than Southern Piling, are in close proximity of the piling works.

9.8 Ensure that the piling drawing is the latest issue, including any revisions, and that the site is set out with the pile positions clearly marked.

9.9 Take delivery of concrete and decant into holding drum using the changeover valve and pump.

9.10 Position the piling rig over the first pile position, as decided by the rig Supervisor unless otherwise directed. Any pile positions close to adjacent buildings will be positioned straight on, with the machine tracks at 90 degrees to the face of the building for maximum stability.

9.11 Check that the mast of the rig is vertical and adjust as necessary and insert auger bung.

9.12 Commence boring and if soils information is limited obtain soil samples for penetrometer testing to confirm pile design, as instructed by Southern Piling management. Ensure stability of rig throughout boring.

9.13 Mix the pump primer up in the concrete pump hopper and send down the concrete hose line to lubricate ready for the concrete.

9.14 Bore to designed length as indicated on the Southern Piling job sheet, adding 2m-long sections of augers as necessary using the auxiliary winch and dolly, having first ensured that only Southern Piling personnel are within the work area. Record final depth using Southern Piling's in-house app.

9.15 When augers need to be added, the piling assistant will knock out the pin holding the top auger to the motorhead drive. The motorhead will then be raised and side shifted over. The winch will be lowered and the hex lifting dolly inserted into the next section of auger to be added. The locating pin will then be replaced, and when all personnel are a safe distance away, the winch will be activated and the section of auger lifted. When the new auger section is at the correct height, it will be lowered onto the hex drive of the existing string of augers, and the pin will be replaced between these two sections. The pin will then be removed from the lifting dolly, the dolly removed, and the hex drive on the motorhead will be re-inserted into the new auger section. The top pin will then be replaced, and the piling can continue.

9.16 Start concrete pump and begin to discharge concrete into hopper, ensuring that only Southern Piling personnel are within the work area.

9.17 Send concrete down the auger to knock out auger bung.

9.18 Commence pumping concrete whilst raising the auger, maintaining a steady pressure, stopping the pump to remove augers as necessary. Remove auger from drill head and place on piling mat.

9.19 When removing augers, the motorhead will be raised enough to expose the top 2-meter section of auger. The auger catch plate will be placed into the string of augers, resting on the top of the auger guide. This will prevent the string of augers falling back down the bore when the bottom pin is removed. The piling assistant will stand on the pile arising, with one foot on the auger guide, and the top pin will be removed. The motorhead will then be raised, lifting the top section of auger from the remaining string. When clear, the motorhead will be side shifted and lowered to enable the auger to be pushed off and fall sideways, away from where the piling crew are standing. The auger section will then be moved out of the way using the excavator, the motorhead re-positioned into the top of the remaining augers and the process repeated.

9.20 Repeat this process until the concrete has reached the top of the pile.

9.21 Move rig away from the finished pile ensuring stability of the rig whilst tracking and using a Banksman/Marshaller as appropriate.

9.22 The excavator clears the pile spoil away carefully down to pile mat level, clear any spoil that may still be in the top of the concrete with a shovel. The reinforcement cage is then either manually lifted into position or lowered by the excavator or the rig service line into the wet concrete and pushed down by stepping on the helical binder. Should the reinforcement cage not enter the concrete by this means the excavator will be used to press it into the wet concrete. Banksman/Marshaller will ensure correct projection and cover spacers are in place. While this procedure is taking place, the Banksman/Marshaller will secure an exclusion zone to prevent anyone from walking into this area.

9.23 Set up over the next pile position and repeat from 9.10.

9.24 The auger teeth will periodically wear out and should be replaced to prolong the life of the auger section. They should be replaced thus: Raise the auger and lay the mast backwards slightly, to allow access to the cutting head and teeth. Using a metal drift along with a copper faced hammer, knock the cutting tooth out of the side of the tooth carrier. Place the new tooth into the top of the tooth carrier and again, using the copper faced mallet, knock the replacement tooth into place. Repeat the process until all of the cutting teeth have been replaced.

9.25 When piling is complete, remove all plant and equipment from site, taking into account the points as listed in section 4.

## 10. BLOWING OUT

10.1 When blowing out the Supervisor/Banksman/Marshaller is to be located at the piling rig which will be moved to be as far away as reasonably possible from boundaries, existing properties and suchlike. The pump operator is to be located at the compressor, next to the blow out cannon. All other operatives to be clear of blow out area prior to commencement of task.

10.2 The tip of the auger will be placed into a blowout bin.

10.3 A clear line of sight is required and must be maintained for communication between the pump operator and the site operative attending the rig.

10.4 The compressor is to be started and the air is gradually released to the blow out cannon.

10.5 The blow out cannon valve is then released to move the concrete along the concrete hose - the air pressure is to be controlled by the pump operator to allow the sponge ball to exit the auger tip in a controlled way.



10.6 The concrete hose is to be monitored by the Banksman/Marshaller/Supervisor and when the concrete has passed through the last host in the line, the Supervisor/Banksman/Marshaller will signal the pump operator to turn off the air supply to the blow out cannon.

10.7 When the piling rig drop hose lifts and moves the Supervisor is to signal the pump operator at the compressor and blow out cannon to release the remaining air in the concrete hose through the blow out cannon release valve, maintaining enough pressure to allow the sponge ball to pass through the auger and exit the tip. Any splashing/debris will be contained by the positioning the auger in a blowout bin.

10.8 The concrete hoses and augers will now be empty of concrete. The Supervisor/Banksman/Marshaller will communicate to the pump operator that the blowing out procedure is complete.

10.9 After completion of blowing out the blow out cannon is to be disconnected from the concrete hose. Two or three buckets of water are to be poured into the open end of the concrete hose followed by a wet sponge ball.

10.10 Blow through the soft ball once more using the same procedure as before.

10.11 Disconnect the blow out cannon from the concrete hose and retrieve the sponge blow out balls.

10.12 Wash down all equipment into Southern Piling's metal washout tray.

## 11. REINFORCEMENT

### 11.1 Fixing Area

Assembly of reinforcement cages in a stoned area, fenced off from other site traffic, provided by the Main Contractor.

### 11.2 Cage Fixing

11.2.1 Steel is to be delivered direct from the supplier. Unloading shall be undertaken by the driver under the supervision of main contractor's site agent.

11.2.2 The leading steel fixer is to be given details of the cages required

11.2.3 The bars and helical will be assembled into cages using purpose made stands onto which bars are loaded to give stability. As each cage is completed it is removed from the assembly stands by excavator.

11.2.4 After fabrication, the cages are to be stored on timbers or clean hardcore to avoid contamination by soil.

11.2.5 Heavyweight cages need to have strengthened lifting points to enable them to be moved and lifted safely. This will normally consist of three turns of helical securely wired or welded to each main bar. Note: Heavyweight cages will generally be prefabricated and delivered to site.

11.2.6 Attendant excavator to be utilised to move cages to the piling rig.



## 12. PROPOSED METHOD STATEMENT FOR INSTANCES OF CONCRETE HOSE BLOCKAGE/BURST

12.1 The pump operator should immediately shut down the concrete pump and reverse pump to prevent the possibility of the hose bursting, and de-pressurise the lines.

12.2 All non-essential operatives, other contractors and members of the public will be moved as far away from the blocked hose as feasibly possible.

12.3 The hoses will then be unclipped, and each section raised in the air with the excavator, using one of Southern Piling's suitable, certificated lifting strops. The hoses will then be shaken to remove the blockage.

12.4 Hoses will also be pressure washed from each end to remove any concrete, into the washout stray and ultimately disposed of into the spoil heap. Repeat until the hoses are clear.

12.5 To clear the rigid pipes and the swan neck on the rig, the augers will be drilled into the ground, to enable the mast to be laid flat. The pipes will then be disconnected and washed out using the pressure washer into the washout stray and ultimately disposed of into the spoil heap, until clear of concrete.

12.6 When all hoses are free from concrete, they should be visually inspected for any damage. Any which look sub-standard should be taken out of service and replaced.

12.7 The hoses will then be clipped together and reconnected to the piling rig.

12.8 The foam ball should then be run through the hoses, as per the piling method statement. This ball should be fired through and washed out and contained in a hole made in an earth bund.

12.9 When the pump operator is satisfied that the blockage is totally clear. The pipes will be re-primed with the Prime-a-Pump, and piling will continue.

## LIFTING PLAN (NON-CRANE)

Work Supervisor	Brief description of the work				
Site Supervisor	Loading and unloading Plant and Equipment delivered to and loaded away from the site. Lifts by lorry loader (specified below) and excavator. Lifting of equipment and materials during piling operations by excavator. Lifting equipment and materials using the Piling Rig auxiliary Winch. See notes regarding restrictions on this equipment.				
Schedule of 'routine' lifts					
<i>Description</i>	<i>Approx. weight</i>	<i>Load characteristic</i>	<i>Method of lifting</i>	<i>Centre of gravity</i>	<i>Lifting points/method of slinging</i>
Reinforcing cages	25 kg Max	Cylindrical	Horizontal: two chain lift	Central	2 leg chains/nylon slings
Reinforcing cages	25kg Max	Cylindrical	Vertical: secure points to be provided	Central	Secure at tied intersection of helical and main bar
Reinforcement (straight bars)	Up to 1000kg	Bundled steel bars	Horizontal: two chain lift	Central	2 leg chains
Reinforcement (helical)	Up to 1000kg	Bundled helical	Horizontal: two chain lift	Central	Chain to pass through, bundling wires not to be used.
Drilling auger	Up to 1,000kg	Up to 6.0m long	Horizontal: two chain choke lift	Central	2 leg chains
Concrete pump	4,200kg	Engine-hopper	Lifting point on top	Central	Chain
Agitator (loader lift)	6,000-9,000kg	Cylinder on frame	4 No. lifting points	Central	Wire rope sling
Diesel bowser	1,500kg	Cube	4 No. lifting points	Central to tank	4 leg chain
Generator/compressor/power pack	2,000kg	Steel box	Lifting points on top	Central	Nylon slings or chain

<b>Equipment to be used for the lift</b>	
<i>Excavator</i>	
Make, Model, Attachments, Test Certificates, etc	Excavator supplied by main contractor. It is their responsibility for checking all documentation before releasing it to work to Southern Piling.
<i>Loader (Lorry Loader – Max boom length 12.5m)</i>	
Make, Model, Attachments, Test Certificates, etc	Loaders supplied by Southern Piling who is responsible for checking all equipment and documentation before releasing it to work.
<i>Piling Rig Auxiliary Hoist</i>	
The ancillary winch on the Piling Rig is designed to assist in “normal piling operations”, including assembling and de -rigging the auger string and lifting rebar cages into the bore; the capacity of the winch is noted as 2.0 tonnes, however Southern Piling limits this to 1.0 tonnes.	
Date of last inspection	See LOLER Book.
Date of last examination	Covered by Rig Annual Examination; Certification is retained by the Rig Operator or available from the Office and Supervisor’s Folder on site.
<i>Hazards Identified/Known on Site</i>	
Refer to general Risk Assessments	
<i>Unloading of Lorries/where crash mats are required for unloading lorries.</i>	
Attach chains to load from ground where possible. Access to lorry bed by footed or fixed ladder. All Southern Piling equipment to be delivered on lorries fitted with handrails and rebar to be pre-slung in 1tonne (max.) bundles.	
<i>Expected competencies</i>	
Excavator driver	The competence of the driver supplied by main contractor or their subcontractor will be checked by the main contractor prior to releasing the operative to attend Southern Piling.
Loader operator	Southern Piling is responsible to ensure the driver supplied is competent to operate the hi-ab on his machine.
Rig driver	The Rig Driver will be a holder of a CPCS or CSCS (Piling Operations) card. The card will be available from the driver.
Slinger Signaller	All the site crew involved in slinging and signalling operation will be holders of a CSCS Slinger/Signaller card, which will be presented on request.

## INSPECTION & TEST PLAN

### *Inspection categories*

A	Approve/Authorise Work to be approved or authorised
I	Inspection Contractor and/or Southern Piling should carry out the necessary inspection(s) and/or test(s) to ensure conformance to the drawings, specifications, contract requirements and related codes and standards
R	Review Review of all results of inspections, examinations and tests, designs and installation logs.
S	Surveillance Monitor the status of the work and carry out periodical analysis of records.
W	Witness If agreed between the Contractor and Southern Piling, any mandatory items of testing, examinations or inspection will be carried out by the relevant inspection authority. If this authority is not available at the required time, the work may continue, to enable adherence to the construction programme.

### *Sections*

- 1: Pre-activity checks
- 2: Boring of piles
- 3: Site construction
- 4: Concrete sampling and testing
- 5: Post construction

1: Pre-activity checks

<b>1.1 Check pile drawing</b>				
<i>Inspection/Test</i>	<i>Acceptance criteria</i>	<i>Frequency</i>	<i>Person responsible</i>	<i>Verifying document</i>
Check latest construction drawing	Supplied by engineer	Prior to commencement	Southern Piling Contracts Manager/Supervisor or	Latest revision
<i>Southern Piling</i>		<i>Main Contractor</i>		<i>Engineer</i>
R		R		
<i>Remarks</i>				
Ensure latest revision				
<b>1.2 Verify RAMS approval</b>				
<i>Inspection/Test</i>	<i>Acceptance criteria</i>	<i>Frequency</i>	<i>Person responsible</i>	<i>Verifying document</i>
Check	Approved and accepted by client	Prior to commencement	Main Contractor	RAMS
<i>Southern Piling</i>		<i>Main Contractor</i>		<i>Engineer</i>
R		R		
<i>Remarks</i>				
RAMS to be approved prior to commencement of piling				
<b>1.3 Verify mix design approval</b>				
<i>Inspection/Test</i>	<i>Acceptance criteria</i>	<i>Frequency</i>	<i>Person responsible</i>	<i>Verifying document</i>
Check	Approved and accepted by engineer	Prior to commencement	Main Contractor or Engineer	Mix design
<i>Southern Piling</i>		<i>Main Contractor</i>		<i>Engineer</i>
R		R		R
<i>Remarks</i>				
Mix design to be approved prior to commencement of piling				
<b>1.4 Verify pile design approval</b>				
<i>Inspection/Test</i>	<i>Acceptance criteria</i>	<i>Frequency</i>	<i>Person responsible</i>	<i>Verifying document</i>
Check	Approved and accepted by engineer	Prior to commencement	Engineer	Pile design
<i>Southern Piling</i>		<i>Main Contractor</i>		<i>Engineer</i>
R		R		R
<i>Remarks</i>				
Pile design to be approved prior to commencement of piling				

<b>1.5 Steel reinforcement</b>				
<i>Inspection/Test</i>	<i>Acceptance criteria</i>	<i>Frequency</i>	<i>Person responsible</i>	<i>Verifying document</i>
Check	Approved and accepted by engineer	Prior to commencement	Engineer	Pile design
<i>Southern Piling</i>		<i>Main Contractor</i>		<i>Engineer</i>
R				R
<i>Remarks</i>				
Steel to be supplied by CARES approved supplier				
<b>1.6 Check PPL against COL</b>				
<i>Inspection/Test</i>	<i>Acceptance criteria</i>	<i>Frequency</i>	<i>Person responsible</i>	<i>Verifying document</i>
Check	Supplied by engineer	Prior to commencement	Main contractor	Pile schedule
<i>Southern Piling</i>		<i>Main Contractor</i>		<i>Engineer</i>
R		R		
<i>Remarks</i>				
Check latest edition of all drawings				
<b>1.7 Steel fixing sub-contractor start up</b>				
<i>Inspection/Test</i>	<i>Acceptance criteria</i>	<i>Frequency</i>	<i>Person responsible</i>	<i>Verifying document</i>
Check competency	CPCS/CSCS	Prior to commencement	Southern Piling Contracts Manager	CPCS/CSCS card
<i>Southern Piling</i>		<i>Main Contractor</i>		<i>Engineer</i>
R/I				
<i>Remarks</i>				
Ensure that the correct cards are held, and are valid				
<b>1.8 Approval of testing</b>				
<i>Inspection/Test</i>	<i>Acceptance criteria</i>	<i>Frequency</i>	<i>Person responsible</i>	<i>Verifying document</i>
UKAS accredited	On accredited list	Prior to commencement	Main contractor	Certificates
<i>Southern Piling</i>		<i>Main Contractor</i>		<i>Engineer</i>
		R		
<i>Remarks</i>				
Testing house to be UKAS registered				

2: Boring of piles

<b>2.1 Notification of piling</b>				
<i>Inspection/Test</i>	<i>Acceptance criteria</i>	<i>Frequency</i>	<i>Person responsible</i>	<i>Verifying document</i>
n/a	Minimum one day prior to commencement	Prior to commencement	Southern Piling Contracts Manager	n/a
<i>Southern Piling</i>		<i>Main Contractor</i>		<i>Engineer</i>
A/R				
<i>Remarks</i>				
Main contractor to be kept informed regarding the commencement of piling				
<b>2.2 Permit to Dig approved</b>				
<i>Inspection/Test</i>	<i>Acceptance criteria</i>	<i>Frequency</i>	<i>Person responsible</i>	<i>Verifying document</i>
Check service drawings & scan piling area	Completed and approved by main contractor	Prior to commencement	Main contractor	Permit to Dig
<i>Southern Piling</i>		<i>Main Contractor</i>		<i>Engineer</i>
		I/R		
<i>Remarks</i>				
Main contractor to complete and sign Permit to Dig				
<b>2.3 Construction drawing</b>				
<i>Inspection/Test</i>	<i>Acceptance criteria</i>	<i>Frequency</i>	<i>Person responsible</i>	<i>Verifying document</i>
As 1.1, check latest edition	Supplied by engineer, via main contractor	Prior to commencement	Main contractor or Engineer	Construction drawing
<i>Southern Piling</i>		<i>Main Contractor</i>		<i>Engineer</i>
R		R		R
<i>Remarks</i>				
Ensure latest edition and revision				



<b>2.4 Piling platform</b>				
<i>Inspection/Test</i>	<i>Acceptance criteria</i>	<i>Frequency</i>	<i>Person responsible</i>	<i>Verifying document</i>
Check piling platform has been constructed correctly (BRE 470)	Firm and level, and able to accept bearing pressures	Daily informal inspection as to condition	Southern Piling Supervisor	Pile mat design
<i>Southern Piling</i>		<i>Main Contractor</i>		<i>Engineer</i>
I/R				
<i>Remarks</i>				
Piling platform must be designed and installed correctly				
<b>2.5 Setting out</b>				
<i>Inspection/Test</i>	<i>Acceptance criteria</i>	<i>Frequency</i>	<i>Person responsible</i>	<i>Verifying document</i>
Engineering check	Within specified tolerance: Check design	Each pile	Engineer/Surveyor	As-built survey
<i>Southern Piling</i>		<i>Main Contractor</i>		<i>Engineer</i>
		A		
<i>Remarks</i>				
Normally by main contractor				
<b>2.6 Monitoring of boring progress</b>				
<i>Inspection/Test</i>	<i>Acceptance criteria</i>	<i>Frequency</i>	<i>Person responsible</i>	<i>Verifying document</i>
Southern Piling Method Statement	As programme	Daily	Southern Piling Contracts Manager or Supervisor	n/a
<i>Southern Piling</i>		<i>Main Contractor</i>		<i>Engineer</i>
<i>Remarks</i>				
Ensure the programme is adhered to and report any obstructions or hold ups				

### 3: Site construction

<b>3.1 Sequence of work</b>				
<i>Inspection/Test</i>	<i>Acceptance criteria</i>	<i>Frequency</i>	<i>Person responsible</i>	<i>Verifying document</i>
Ensure not drilling near recently cast piles	No damage to adjacent piles	Each pile	Southern Piling Supervisor	n/a
<i>Southern Piling</i>		<i>Main Contractor</i>		<i>Engineer</i>
I				
<i>Remarks</i>				
Adjacent piles to be monitored during pile installation				
<b>3.2 Rig positioning</b>				
<i>Inspection/Test</i>	<i>Acceptance criteria</i>	<i>Frequency</i>	<i>Person responsible</i>	<i>Verifying document</i>
Check verticality and position of rig mast	ICE table B1.4	Each pile	Piling assistant	n/a
<i>Southern Piling</i>		<i>Main Contractor</i>		<i>Engineer</i>
I				
<i>Remarks</i>				
Position and verticality to be corrected until within tolerance				
<b>3.3 Pile positioning</b>				
<i>Inspection/Test</i>	<i>Acceptance criteria</i>	<i>Frequency</i>	<i>Person responsible</i>	<i>Verifying document</i>
Check auger position	Within 25mm	Each pile	Piling assistant	n/a
<i>Southern Piling</i>		<i>Main Contractor</i>		<i>Engineer</i>
R				
<i>Remarks</i>				
Position to be corrected until within tolerance				
<b>3.4 Pile toe achieved as per pile design</b>				
<i>Inspection/Test</i>	<i>Acceptance criteria</i>	<i>Frequency</i>	<i>Person responsible</i>	<i>Verifying document</i>
Pile depth to be checked pile design	To level to be at or beyond designed length	Each pile	Rig operator	Pile record sheet
<i>Southern Piling</i>		<i>Main Contractor</i>		<i>Engineer</i>
I				
<i>Remarks</i>				
Check against pile schedule				

<b>3.5 Concrete delivery</b>				
<i>Inspection/Test</i>	<i>Acceptance criteria</i>	<i>Frequency</i>	<i>Person responsible</i>	<i>Verifying document</i>
Check delivery ticket, prior to acceptance, to ensure correct grade and spec.	Correct concrete mix	Each delivery	Pump operator	Delivery ticket
<i>Southern Piling</i>		<i>Main Contractor</i>		<i>Engineer</i>
R				
<i>Remarks</i>				
Reject any non-conforming or out of specification concrete				
<b>3.6 Workability</b>				
<i>Inspection/Test</i>	<i>Acceptance criteria</i>	<i>Frequency</i>	<i>Person responsible</i>	<i>Verifying document</i>
Visual inspection of concrete	n/a	Each delivery	Pump operator	n/a
<i>Southern Piling</i>		<i>Main Contractor</i>		<i>Engineer</i>
I				
<i>Remarks</i>				
Reject any non-conforming or out of specification concrete				
<b>3.7 Pile cages</b>				
<i>Inspection/Test</i>	<i>Acceptance criteria</i>	<i>Frequency</i>	<i>Person responsible</i>	<i>Verifying document</i>
Specification and condition	Compliance with design	Each cage	Piling assistant or Supervisor	n/a
<i>Southern Piling</i>		<i>Main Contractor</i>		<i>Engineer</i>
I/R				
<i>Remarks</i>				
Number, size and spacing of bars, diameter of cage, pile spacers and debonding length				
<b>3.8 Cage installation</b>				
<i>Inspection/Test</i>	<i>Acceptance criteria</i>	<i>Frequency</i>	<i>Person responsible</i>	<i>Verifying document</i>
Check cage has been installed at the correct level and is central to the pile	As specification and design	Each pile	Southern Piling Supervisor	n/a
<i>Southern Piling</i>		<i>Main Contractor</i>		<i>Engineer</i>
I				
<i>Remarks</i>				
Ensure the heave bar (if specified) is central to the pile				

#### 4: Concrete sampling and testing

<b>4.1 Concrete strength</b>				
<i>Inspection/Test</i>	<i>Acceptance criteria</i>	<i>Frequency</i>	<i>Person responsible</i>	<i>Verifying document</i>
Concrete to be sampled and cubes to be taken, number as specified in client order	BS EN 12390 (part 2)	As per client specification, minimum one set per day	Southern Piling Quality Assurance department	Cube test results
<i>Southern Piling</i>		<i>Main Contractor</i>		<i>Engineer</i>
W				
<i>Remarks</i>				
Cubes will be stripped and labelled, then stored in a heated cube tank (20°C +/- 2°C)				

#### 5: Post construction

<b>5.1 All piles completed</b>				
<i>Inspection/Test</i>	<i>Acceptance criteria</i>	<i>Frequency</i>	<i>Person responsible</i>	<i>Verifying document</i>
Check all piles have been installed	Pile drawings and schedule	End of piling	Southern Piling Supervisor	Pile installation log
<i>Southern Piling</i>		<i>Main Contractor</i>		<i>Engineer</i>
<i>Remarks</i>				
Copy to be sent to main contractor				
<b>5.2 Pile integrity</b>				
<i>Inspection/Test</i>	<i>Acceptance criteria</i>	<i>Frequency</i>	<i>Person responsible</i>	<i>Verifying document</i>
Integrity testing	Zero defects	Each pile	Arranged through Southern Piling Quality Assurance department	Integrity test report
<i>Southern Piling</i>		<i>Main Contractor</i>		<i>Engineer</i>
W				
<i>Remarks</i>				
Copy to be sent to main contractor				

## RISK ASSESSMENT: PILING OPERATIONS

<b>Area assessed</b>	Piling operations	<b>Date</b>	27 <sup>th</sup> June 2022
<b>Assessment completed by</b>	Keith Taylor	<b>In association with</b>	McCormack Benson Health & Safety

Persons exposed	Frequency of exposure	Duration of exposure
Employees	Continually	Less than 1 hour
Contractors	Hourly	1-2 hours
Young persons	Daily	3-4 hours
Expectant mothers	Weekly	5-6 hours
Visitors	Monthly	7-8 hours
Trespassers	Yearly	More than 8 hours

PROBABILITY (P)	SEVERITY (S)			
	1	2	3	4
	2	4	6	8
	3	6	9	12
	4	8	12	16

RISK LEVEL (R)		
1-2	<b>Very Low Risk</b>	Little or no action required.
3-4	<b>Low</b>	Lower, if possible, with PPE.
6-8	<b>Medium</b>	Review controls to reduce.
9-12	<b>High</b>	Intervention is required to remove or reduce risk.
16	<b>Excessive</b>	<b>Unacceptable.</b> Alternative must be provided.

This Risk Assessment and identified Control Measures, has been established following consultation with Management, Supervisory and Operational Staff. All staff are to acknowledge their understanding of the control measures, and should sign the last page of this document.

Task/Hazard	Initial			Control measures	Residual		
	S	P	R		S	P	R
Contact with Underground services	3	2	6	<ul style="list-style-type: none"> <li>Ensure that a scan and survey of the piling area has been carried out by the main contractor or his representative, and any services have been identified and or diverted.</li> <li>Ensure that the permit to dig has been signed by the main contractor.</li> <li>If need be, local electricity supplies should be disconnected for the duration of the piling.</li> <li>Ensure that the correct PPE is worn. This will consist of:               <ul style="list-style-type: none"> <li>Steel toe capped safety boots. (BS EN 345-1/2)</li> <li>Hard Hat (BS EN 397)</li> <li>Hi-Visibility clothing (BS EN 471)</li> <li>Task specific, cut resistant gloves. (BS EN 420)</li> <li>Waterproof gloves (BS EN 374-2)</li> <li>Impact resistant eye protection (BS EN 166)</li> <li>Ear protection (BS EN 352-1/2)</li> <li>FFP3 rated dust mask. (BS EN 149)</li> </ul> </li> </ul>	3	1	3
Overtipping or toppling of piling rig or associated equipment.	3	2	6	<ul style="list-style-type: none"> <li>A piling mat, constructed from a minimum of 300mm of 6F2 crushed concrete, or similar, on a layer of geotextile membrane, should be installed by a competent person, under the direction of the Main Contractor.</li> <li>Operatives must read and sign the accompanying Method Statement, that detail the safest method of work. If in any doubt, stop work and seek clarification from SP senior management.</li> </ul>	3	1	3
Materials or equipment falling from piling rig	2	2	4	<ul style="list-style-type: none"> <li>Ensure that all ancillary equipment is secured to the piling rig prior to commencing piling.</li> <li>Ensure that the augers are kept clean above head height.</li> <li>Ensure that all lifting chains and shackles are in good condition, and have been tested and certified. These certificates should be held on site, and made available to the M/C if requested.</li> <li>Ensure that the correct PPE is worn, as noted in 1. above</li> <li>The supervisor shall consider all hazards on a daily basis, and specify additional PPE or controls as required.</li> </ul>	2	1	2

Task/Hazard	Initial			Control measures	Residual		
	S	P	R		S	P	R
Being struck by moving piling rig.	3	2	6	<ul style="list-style-type: none"> <li>Banksmen should be used at all times when the piling rig is manoeuvring around the site.</li> <li>Correct PPE should be worn at all times, as listed in 1 above.</li> <li>Operatives must read and sign the accompanying Method Statement, that detail the safest method of work. If in any doubt, stop work and seek clarification from SP senior management.</li> </ul>	3	1	3
Contact with auger during piling operations	6	2	12	<ul style="list-style-type: none"> <li>Ensure that only SP personnel are in the immediate vicinity of the piling rig during the piling operation.</li> <li>Ensure that the correct PPE is being worn, as indicated in 1. Above, and that it fits correctly and is not loose.</li> <li>Ensure that the safety cage is secure on the rig, is closed during piling, and that the limit switch is working properly. No operatives should approach the auger if it is still turning.</li> <li>Ensure that no operatives are in close proximity of the motorhead when it is being side shifted.</li> <li>Care should be taken when connecting additional auger sections or the lifting dolly to avoid entrapment of fingers.</li> <li>Make sure that all personnel are at the control side of the rig when the augers are pushed off.</li> <li>Correct PPE should be worn at all times, as listed in 1 above.</li> <li>Operatives must read and sign the accompanying Method Statement, that detail the safest method of work. If in any doubt, stop work and seek clarification from SP senior management.</li> <li>The supervisor shall consider all hazards on a daily basis, and specify additional PPE or controls as required.</li> </ul>	3	1	3

## RISK ASSESSMENT: CONCRETE PUMPING

<b>Area assessed</b>	Concrete pumping	<b>Date</b>	27th June 2022
<b>Assessment completed by</b>	Keith Taylor	<b>Person(s) consulted</b>	McCormack Benson Health & Safety

Persons exposed	Frequency of exposure	Duration of exposure
Employees	Continually	Less than 1 hour
Contractors	Hourly	1-2 hours
Young persons	Daily	3-4 hours
Expectant mothers	Weekly	5-6 hours
Visitors	Monthly	7-8 hours
Trespassers	Yearly	More than 8 hours

PROBABILITY (P)	SEVERITY (S)			
	1	2	3	4
	2	4	6	8
	3	6	9	12
	4	8	12	16

RISK LEVEL (R)		
1-2	<b>Very Low Risk</b>	Little or no action required.
3-4	<b>Low</b>	Lower, if possible, with PPE.
6-8	<b>Medium</b>	Review controls to reduce.
9-12	<b>High</b>	Intervention is required to remove or reduce risk.
16	<b>Excessive</b>	<b>Unacceptable.</b> Alternative must be provided.

This Risk Assessment and identified Control Measures, has been established following consultation with Management, Supervisory and Operational Staff. All staff are to acknowledge their understanding of the control measures, and should sign the last page of this document.



Task/Hazard	Initial			Control measures	Residual		
	S	P	R		S	P	R
Personnel being struck by concrete mixer lorry	3	2	6	<ul style="list-style-type: none"> <li>• Ensure that all vehicle movements are controlled by banksmen, and all non-essential personnel are clear of the area.</li> <li>• Ensure that the vehicle audible warning signal, if fitted, is operable.</li> <li>• Ensure that the correct PPE is worn. This will consist of:               <ul style="list-style-type: none"> <li>○ Steel toe capped safety boots. (BS EN 345-1/2)</li> <li>○ Hard Hat (BS EN 397)</li> <li>○ Hi-Visibility clothing (BS EN 471)</li> <li>○ Task specific, cut resistant gloves. (BS EN 420)</li> <li>○ Waterproof gloves (BS EN 374-2)</li> <li>○ Impact resistant eye protection (BS EN 166)</li> <li>○ Ear protection (BS EN 352-1/2)</li> <li>○ FFP3 rated dust mask. (BS EN 149)</li> </ul> </li> <li>• Operatives must read and sign the accompanying Method Statement, that detail the safest method of work. If in any doubt, stop work and seek clarification from SP senior management.</li> <li>• The Supervisor shall consider all hazards on a daily basis, and specify additional PPE or controls as necessary.</li> </ul>	3	1	3
Entrapment in concrete pumping mechanism	3	2	6	<ul style="list-style-type: none"> <li>• Make sure that the safety guards, fitted to the pump, are not damaged, and are fully operational.</li> <li>• Ensure that clothing is suitable for the task, and is not loose, and could become trapped in the pumping mechanism.</li> <li>• Ensure that only qualified personnel, holding a current CPCS card, operate the concrete pump, and that all non-essential personnel are kept away from the area.</li> <li>• Operatives must read and sign the accompanying Method Statement, that detail the safest method of work. If in any doubt, stop work and seek clarification from SP senior management.</li> <li>• Make sure that the correct PPE is being worn, as noted in 1 above.</li> </ul>	3	1	3

Task/Hazard	Initial			Control measures	Residual		
	S	P	R		S	P	R
Personnel hit by concrete hose whilst pumping	3	2	6	<ul style="list-style-type: none"> <li>Ensure that all non-essential personnel are clear of the area.</li> <li>Ensure that whip-checks are fitted, and in good working order, free from any damage. The supervisor shall consider all hazards on a daily basis, and specify additional PPE or controls as required.</li> </ul>	3	1	3
Burst concrete hose	3	2	6	<ul style="list-style-type: none"> <li>Check condition of concrete hose during daily walk round check.</li> <li>Check all clips and replace any which appear to be damaged.</li> <li>Do not allow traffic to drive across the concrete hoses, as this will cause damage.</li> <li>In the event of a burst and escape of concrete, follow the guidelines in the COSHH assessment regarding containment and clean up.</li> </ul>	3	1	3
Concrete burns	3	2	6	<ul style="list-style-type: none"> <li>Ensure that the correct PPE is worn, as listed in 1. above</li> <li>Ensure that all non-essential personnel are clear of the area during piling.</li> <li>If wet concrete comes into contact with exposed skin, wash off immediately with copious amounts of clean water, and consult the relevant COSHH sheet. If any redness or cracking of the skin is noticed, seek medical attention. Notify the M/C site manager and consult the first aider.</li> <li>Any concrete impregnated clothing must be removed immediately, to cut down the possibility of seepage through to the skin.</li> </ul>	2	1	3
Slips, Trips and Falls	2	2	4	<ul style="list-style-type: none"> <li>Ensure that a good housekeeping policy is adopted, and the area is tidy and free from any debris or rubbish.</li> <li>Make sure that all rubbish is placed in the correct site waste bin.</li> <li>Ensure that all PPE is being worn, as noted in 1. above.</li> </ul>	2	1	2

Task/Hazard	Initial			Control measures	Residual		
	S	P	R		S	P	R
Washing out pump	3	2	6	<ul style="list-style-type: none"> <li>Ensure that only qualified personnel carry out the cleaning process.</li> <li>Any excess concrete is to be disposed in a pre-agreed area, either in a designated wash out bin, or on the spoil heap. Care should be taken to ensure that none of this concrete or cement impregnated water enters any water course or drain.</li> <li>Ensure that All PPE is worn, as noted in 1. above.</li> <li>Ensure that the hoses are washed out into the washout bin to stop any splashing onto adjacent property.</li> </ul>	3	1	3
Concrete hose blockage	3	2	6	<ul style="list-style-type: none"> <li>Ensure that the correct concrete mix is being used, with the correct size aggregate (10mm) and the correct slump and percentage of fines. Any concrete which appears 'boney' should be rejected at site, and returned to the batching plant.</li> <li>Ensure that the hoses and pump have been correctly lined with Prime-a-Pump.</li> <li>Ensure that the correct amount of concrete hose has been used, and is laid straight, where possible. Any changes in direction should be in a wide radius arc.</li> <li>The pump operator will be responsible for circulating the concrete around the agitator and pump. Deliveries of fresh concrete should be time managed and planned correctly.</li> <li>Any concrete hoses which cross roadways, or are likely to be affected by traffic, should be buried to avoid any damage.</li> <li>If a blockage occurs, the pump operator is to stop the pump immediately. The piling crew will then carry out the steps indicated in the attached method statement to clear the blockage.</li> <li>Operatives must read the accompanying method statement, to determine the safest method of work, and must wear the correct PPE at all times, as noted in 1 above.</li> </ul>	3	1	3

## RISK ASSESSMENT: MANUAL HANDLING

<b>Area assessed</b>	Manual handling	<b>Date</b>	27th June 2022
<b>Assessment completed by</b>	Keith Taylor	<b>Person(s) consulted</b>	McCormack Benson Health & Safety

Persons exposed	Frequency of exposure	Duration of exposure
Employees	Continually	Less than 1 hour
Contractors	Hourly	1-2 hours
Young persons	Daily	3-4 hours
Expectant mothers	Weekly	5-6 hours
Visitors	Monthly	7-8 hours
Trespassers	Yearly	More than 8 hours

PROBABILITY (P)	SEVERITY (S)			
	1	2	3	4
	2	4	6	8
	3	6	9	12
	4	8	12	16

RISK LEVEL (R)		
1-2	<b>Very Low Risk</b>	Little or no action required.
3-4	<b>Low</b>	Lower, if possible, with PPE.
6-8	<b>Medium</b>	Review controls to reduce.
9-12	<b>High</b>	Intervention is required to remove or reduce risk.
16	<b>Excessive</b>	<b>Unacceptable.</b> Alternative must be provided.

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Task/Hazard	Initial			Control measures	Residual		
	S	P	R		S	P	R
Musculoskeletal Injuries	3	2	6	<ul style="list-style-type: none"> <li>• Ensure that all cement bags, if used, are below 25kgs each.</li> <li>• Avoid twisting, stooping, repetitive lifting, carrying over long distances or rough terrain, lifting above your capability and pushing items, using bodily force rather than pulling.</li> <li>• Plan the site to ensure that deliveries of sand and cement, if used are placed as close to the piling area and pump as possible, reducing carrying distance.</li> <li>• Manual handling should be avoided where possible, and mechanical means, such as the excavator, should be used for lifting and lowering the pile cages.</li> <li>• If manual handling cannot be avoided, work as a team, and always adopt the correct method for lifting/lowering/moving. One person must act as the lead, and issue verbal instructions on the task in hand, to establish a route to the final location, using rest points as necessary, and to clear the route of any hazards or obstructions.</li> <li>• Operatives should ensure they are warmed up before attempting any manual handling operations, to cut down on the risk of injury.</li> <li>• If grouting, the workforce should be rotated, to reduce the possibility of repetitive injury.</li> <li>• Never try to move concrete hoses which are already charged with concrete. Use the excavator or other mechanical handling aid.</li> <li>• The auger sections should only be moved around the site using the excavator, and should only be lifted into place using the winch and dolly.</li> <li>• When changing the auger teeth, a copper faced hammer should be used to knock the old teeth out and the new teeth in.</li> <li>• Ensure that the appropriate PPE is worn at all times, as noted in section 1 of the piling operations R/A.</li> <li>• When steel fixing, ensure that the ground is firm and level, and the trestles or bandstands can't topple over.</li> </ul>	3	1	3

Task/Hazard	Initial			Control measures	Residual		
	S	P	R		S	P	R
Musculoskeletal Injuries (cont.)	3	2	6	<ul style="list-style-type: none"> <li>Care should be taken to ensure that pile cages don't roll off the trestles or bandstands.</li> <li>Operatives must read the accompanying method statement, to determine the safest method of work.</li> <li>SP Supervisor shall consider all hazards on a daily basis and specify additional PPE or controls as necessary.</li> </ul>	3	1	3
Lacerations from sharp edges	2	2	4	<ul style="list-style-type: none"> <li>Use maximum care when lifting steel reinforcing bars onto trestles or bandstands. Do not hold the steel at the cut ends.</li> <li>Ensure that the correct PPE is worn, as noted in Piling Operations note 1., paying special attention to the correct anti-cut gloves.</li> <li>Operatives must read the accompanying method statement, to determine the safest method of work.</li> </ul>	2	1	2
Slips, Trips and Falls	2	2	4	<ul style="list-style-type: none"> <li>See note 1 in the Concrete Pumping R/A.</li> </ul>	2	1	2

## RISK ASSESSMENT: LIFTING AGITATOR

<b>Area assessed</b>	Lifting agitator	<b>Date</b>	8 <sup>th</sup> August 2022
<b>Assessment completed by</b>	Keith Taylor	<b>In association with</b>	McCormack Benson Health & Safety

Persons exposed	Frequency of exposure	Duration of exposure
Employees	Continually	Less than 1 hour
Contractors	Hourly	1-2 hours
Young persons	Daily	3-4 hours
Expectant mothers	Weekly	5-6 hours
Visitors	Monthly	7-8 hours
Trespassers	Yearly	More than 8 hours

PROBABILITY (P)	SEVERITY (S)			
	1	2	3	4
	2	4	6	8
	3	6	9	12
	4	8	12	16

RISK LEVEL (R)		
1-2	<b>Very Low Risk</b>	Little or no action required.
3-4	<b>Low</b>	Lower, if possible, with PPE.
6-8	<b>Medium</b>	Review controls to reduce.
9-12	<b>High</b>	Intervention is required to remove or reduce risk.
16	<b>Excessive</b>	<b>Unacceptable.</b> Alternative must be provided.

This Risk Assessment and identified Control Measures, has been established following consultation with Management, Supervisory and Operational Staff. All staff are to acknowledge their understanding of the control measures and should sign the last page of this document.

Task/Hazard	Initial			Control measures	Residual		
	S	P	R		S	P	R
Entrapment or crushing from moving or falling load. Lorry crane striking overhead cables or structures. Lorry crane overturning.	4	3	12	<ul style="list-style-type: none"> <li>• Driver/Crane Operator to ensure that the lorry is positioned on firm, stable ground, as close as possible to the agitator, to ensure that minimal radius is required for the lift.</li> <li>• Outriggers should be fully extended, and pads should be used to spread the load.</li> <li>• All non-essential personnel to clear the lifting area and should not approach until the agitator is over the lorry bed, and at a safe height.</li> <li>• Operator is to ensure that all certificates for the lorry crane, and the lifting chains are in date.</li> <li>• Ensure that there are no overhead cables or obstructions around the lift area. Under no circumstances, should the load be lifted over any overhead cables.</li> <li>• Only competent, trained personnel are to operate the lorry crane.</li> <li>• No personnel should be either on the lorry bed, or underneath the agitator during lifting.</li> </ul>	4	1	4



## RISK ASSESSMENT: NOISE EXPOSURE

<b>Area assessed</b>	Noise exposure	<b>Date</b>	27 <sup>th</sup> June 2022
<b>Assessment completed by</b>	Keith Taylor	<b>In association with</b>	McCormack Benson Health & Safety

Persons exposed	Frequency of exposure	Duration of exposure
Employees	Continually	Less than 1 hour
Contractors	Hourly	1-2 hours
Young persons	Daily	3-4 hours
Expectant mothers	Weekly	5-6 hours
Visitors	Monthly	7-8 hours
Trespassers	Yearly	More than 8 hours

PROBABILITY (P)	SEVERITY (S)			
	1	2	3	4
	2	4	6	8
	3	6	9	12
	4	8	12	16

RISK LEVEL (R)		
1-2	<b>Very Low Risk</b>	Little or no action required.
3-4	<b>Low</b>	Lower, if possible, with PPE.
6-8	<b>Medium</b>	Review controls to reduce.
9-12	<b>High</b>	Intervention is required to remove or reduce risk.
16	<b>Excessive</b>	<b>Unacceptable.</b> Alternative must be provided.

This Risk Assessment and identified Control Measures, has been established following consultation with Management, Supervisory and Operational Staff. All staff are to acknowledge their understanding of the control measures, and should sign the last page of this document.

Task/Hazard	Initial			Control measures	Residual		
	S	P	R		S	P	R
Machinery producing excessive noise levels.	2	1	2	<ul style="list-style-type: none"> <li>Noise level assessments of plant and equipment were undertaken, using a noise level metre, to ascertain exposure levels.</li> <li>The level of noise recorded for piling rig operators was between 82db(A) and 84db(A), and duration was limited to short busts throughout the day.</li> <li>This is recognised as being above the 1st Action Level (80dbA) but below the 2nd Action Level (85bdA) and therefore hearing protection is provided by the Company and that those in the team are advised to wear it but it is not mandatory.</li> </ul>	2	1	2

## RISK ASSESSMENT: COVID-19

<b>Area assessed</b>	Covid-19	<b>Date</b>	27th June 2022
<b>Assessment completed by</b>	Keith Taylor	<b>Person(s) consulted</b>	McCormack Benson Health & Safety

Persons exposed	Frequency of exposure	Duration of exposure
Employees	Continually	Less than 1 hour
Contractors	Hourly	1-2 hours
Young persons	Daily	3-4 hours
Expectant mothers	Weekly	5-6 hours
Visitors	Monthly	7-8 hours
Trespassers	Yearly	More than 8 hours

PROBABILITY (P)	SEVERITY (S)			
	1	2	3	4
	2	4	6	8
	3	6	9	12
	4	8	12	16

RISK LEVEL (R)		
1-2	<b>Very Low Risk</b>	Little or no action required.
3-4	<b>Low</b>	Lower, if possible, with PPE.
6-8	<b>Medium</b>	Review controls to reduce.
9-12	<b>High</b>	Intervention is required to remove or reduce risk.
16	<b>Excessive</b>	<b>Unacceptable.</b> Alternative must be provided.

This Risk Assessment and identified Control Measures, has been established following consultation with Management, Supervisory and Operational Staff. All staff are to acknowledge their understanding of the control measures, and should sign the last page of this document.

Task/Hazard	Initial			Control measures	Residual		
	S	P	R		S	P	R
Coming to work and leaving work	4	4	16	<ul style="list-style-type: none"> <li>• HM Government has updated guidance that England has now returned to COVID-19 pandemic “Plan A” and has removed restrictions in place, including the need to work from home where possible.</li> <li>• Individuals who have been advised to stay at home under existing medical guidance/instruction do not physically come to work until sufficient provision has been established for them to be protected within the workplace.</li> <li>• HM Gov guidance states that individuals who have symptoms of COVID-19 are no longer required to isolate. Any person that is self-isolating are still permitted to work from home if they are physically able to (24/02/22)</li> <li>• As far as possible, where there is a need for people to work together, the Company management team endeavour to have them as a “fixed” team so that where contact is unavoidable. This includes all site-based personnel, where possible, remain and work together when team working is required.</li> <li>• Never try to move concrete hoses which are already charged with concrete. Use the excavator or other mechanical handling aid.</li> <li>• The auger sections should only be moved around the site using the excavator, and should only be lifted into place using the winch and dolly.</li> <li>• Company personnel are still advised to wash hands thoroughly with soap and water upon arrival and before leaving work, as well as at regular intervals during the working day.</li> <li>• Handwashing facilities, or hand sanitiser where not possible, are provided and personnel can request more if none is available.</li> <li>• The Company continue to support personnel in using face coverings safely if they choose to wear one.</li> </ul>	4	2	8

Task/Hazard	Initial			Control measures	Residual		
	S	P	R		S	P	R
Coming to work and leaving work (cont.)	4	4	16	<ul style="list-style-type: none"> <li>• People who have had close contact with someone with COVID-19 do not need to self-isolate.</li> <li>• Anyone who has been identified as a contact of someone with COVID-19 is no longer required to test or self-isolate. The Company do recommend that a test is taken to confirm the diagnosis, but only for information purposes and consideration as to any further provisions required in the workplace that may reduce transmission.</li> <li>• Personnel are encouraged to report their concerns relating to COVID-19 to their immediate Supervisor, to enable working arrangements to be reviewed and modified as necessary.</li> </ul>	4	2	8
Moving around buildings and worksites	4	4	16	<ul style="list-style-type: none"> <li>• Company personnel movement across all site working areas has been reduced by discouraging non-essential trips within buildings and sites, for example, restricting access to non-essential locations, encouraging use of radios or telephones, where permitted, and cleaning them between use.</li> <li>• Job and equipment rotation continues to be reduced.</li> <li>• Introduction of more one-way flow through building(s).</li> <li>• Maximum occupancy for passenger lifts is managed by the PC personnel, and people are encouraged to use the stairs wherever possible.</li> <li>• Company personnel are encouraged to frequently clean items/objects that they touch regularly in their work area e.g., such as door handles and handrails.</li> </ul>	4	2	8

Task/Hazard	Initial			Control measures	Residual		
	S	P	R		S	P	R
Workplaces and workstations	4	4	16	<ul style="list-style-type: none"> <li>Program of works continue to be kept under review by Company management and the project PC. Where necessary this continues to be modified to allow trades/people to work further apart from each other.</li> <li>Working materials, equipment, tools etc, are allocated to the Company personnel that are working at the premises and not shared if possible. If any need to be shared, they will be shared by the smallest possible number of people, generally within the Company personnel that have been "paired".</li> </ul>	4	2	8
Meetings	4	4	16	<ul style="list-style-type: none"> <li>Remote working tools (e.g., Zoom, Microsoft Teams) continue to be used where practicable to limit in-person meetings.</li> <li>Only absolutely necessary participants attend in-person meetings.</li> <li>Transmission is avoided during meetings, e.g., by not sharing pens and other objects.</li> <li>Hand sanitiser available within the company premises and meeting attendees are encouraged to use it.</li> </ul>	4	2	8
Ventilation	4	4	16	<ul style="list-style-type: none"> <li>The work areas of the Company are to external areas and therefore sufficient "free" air movement is always achieved.</li> <li>Travel within company vehicles is by a fixed "team" – the vehicle driver will ensure that ventilation levels are kept at a reasonable rate so that there is suitable air exchange for the duration of the journey to and from site.</li> </ul>	4	2	8

Task/Hazard	Initial			Control measures	Residual		
	S	P	R		S	P	R
Suspected Covid19 cases, accidents, security and other incidents	4	4	16	<ul style="list-style-type: none"> <li>Any person working on behalf of the Company may be sent home and the Director informed. All personnel are advised to follow NHS online guidance</li> <li>Personnel are reminded to follow existing emergency procedures with the understanding that they do not have to adhere to any social distancing protocol that may be in place if it would be unsafe, e.g., during a fire evacuation.</li> <li>People involved in the provision of assistance to others (e.g., first aid) have been instructed to pay particular attention to sanitation measures immediately afterwards, including washing hands.</li> <li>First aid is administered by trained personnel in accordance with the guidance provided by St John Ambulance.</li> </ul>	4	2	8
Common areas – including eating facilities, toilets, changing rooms and showers	4	4	16	<ul style="list-style-type: none"> <li>The Company work collaboratively with the project PC and other trades working on the project to ensure consistency across common areas, e.g., access points, pedestrian routes, staircases etc.</li> <li>Company personnel will follow the staggering of break times that is implemented to reduce pressure on breakrooms or places to eat.</li> <li>Safe outside areas are used for breaks where possible.</li> <li>Company personnel are advised that, where possible, they should bring their own food to work, preferably that doesn't require the use of any kitchen facilities.</li> <li>Company personnel will follow and adhere to the site rules relating to the use of the seating and tables that have been reconfigured to maintain spacing and reduce face-to-face interactions.</li> <li>Company personnel are encouraged to remain on-site and, when not possible, expected to maintain social distancing while off-site.</li> </ul>	4	2	8

Task/Hazard	Initial			Control measures	Residual		
	S	P	R		S	P	R
Common areas – including eating facilities, toilets, changing rooms and showers (cont.)	4	4	16	<ul style="list-style-type: none"> <li>• Use of locker rooms, changing areas and other facility areas is regulated by the onsite PC management team to reduce concurrent usage.</li> <li>• Storage of personal items and clothing in personal storage spaces is encouraged, e.g., lockers and during shifts.</li> <li>• Company personnel are encouraged to remain on-site and, when not possible, expected to maintain social distancing while off-site.</li> <li>• Use of locker rooms, changing areas and other facility areas is regulated by the onsite PC management team to reduce concurrent usage.</li> <li>• Storage of personal items and clothing in personal storage spaces is encouraged, e.g., lockers and during shifts.</li> <li>• Social distance marking for common areas such as toilets, showers, lockers and changing rooms and in other areas where queues typically form will continue to be followed where they are in place.</li> <li>• Regular reminders and signage is provided to maintain hygiene standards.</li> <li>• Clear use and cleaning guidance is established for toilets, showers, lockers and changing rooms to ensure they are kept clean and social distancing is achieved as much as possible.</li> <li>• Enhanced cleaning for busy areas and all facilities regularly during the day and at the end of the day.</li> <li>• Suitable hand drying facilities are provided – either paper towels or electrical dryers.</li> <li>• More waste facilities and more frequent rubbish collections are provided.</li> </ul>	4	2	8













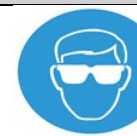


Task/Hazard	Initial			Control measures	Residual		
	S	P	R		S	P	R
Handling goods, merchandise and other materials, and onsite vehicles	4	4	16	<ul style="list-style-type: none"> <li>The Company Management team has identified areas where people have to directly pass things to each other (i.e., materials, tools, equipment etc), and minimise this between those that are working in “consistent pairs”.</li> <li>All tools and equipment that is shared is limited but Company personnel are aware that they MUST clean and use anti-bacterial wipes when tool usage has finished.</li> <li>Increased handwashing for Company personnel handling goods and merchandise is encouraged, or hand sanitiser is provided where this is not practical.</li> <li>The Company Management team consider methods to reduce frequency of deliveries which is implemented where practicable and storage on site allows e.g., larger quantities are ordered less often.</li> <li>Where possible and safe, single Company personnel load or unload vehicles. Where possible, using the same pairs of people for loads where more than one is needed.</li> </ul>	4	2	8
Mental health and wellbeing – issues relating to home working, self-isolating, anxiety regarding workplace safety	3	3	9	<ul style="list-style-type: none"> <li>The Company will keep in touch with off-site workers on their working arrangements including their welfare, mental and physical health and personal security.</li> <li>The Management Team will listen and talk to all personnel about their work and how they will manage the risks from COVID-19.</li> <li>For those workers returning to work after a period of self-isolation, or having recovered from COVID-19, the Company manage returns to work to avoid potential discrimination (workers may face adverse reaction from their workmates for reasons of a perceived continuing risk of infection).</li> <li>The Company will reinforce or repeat training and/or update returning personnel on any changes in work methods, processes and controls which may have been made during their absence.</li> </ul>	3	2	6

Task/Hazard	Initial			Control measures	Residual		
	S	P	R		S	P	R
Mental health and wellbeing – issues relating to home working, self-isolating, anxiety regarding workplace safety (cont.)				<ul style="list-style-type: none"> <li>Personnel will be involved in assessing workplace risks and the development and review of workplace health and safety policies, including decisions to resolve issues, to show them that their health and safety is taken seriously.</li> </ul>			

Actions arising from Risk Assessment			
Ref	Risk rating	Action(s) required	
All	High	The significant findings of this risk assessment must be communicated to all personnel	
Person(s) responsible		Target date	Date completed
Southern Piling management		Immediately and re-briefed as and when changes occur.	








## COSHH ASSESSMENT: ADBLUE







<b>Product name</b>	AdBlue		<b>Client name</b>	Southern Piling			
<b>Product code</b>	Water solution of urea, AUS 32		<b>Assessor name</b>	James Cumming (Simple Safety Advice)			
<b>Initial Risk Assessment</b>							
Substance is not classified as dangerous according to regulation (EC) 1272/2008 of the European parliament.							
Initial risk rating: LOW							
<b>Task/Purpose</b>							
Additive for reduction of NOx emission from diesel engine exhausts.							
<b>Form</b>							
Dust	Fumes	Vapour	Mist	Gasses	Liquid	Lead	Smoke Slurry
<b>Routes of entry into the body</b>							
Inhalation		Ingestion		Absorption		Direct contact	
<b>Hazards/ill health effects</b>							
Breathlessness	Dermatitis	Burns	Irritant		Asphyxiation	Other	
<b>Environmental Risks i.e., is this material harmful to the environment and/or eco-toxic?</b>							
Water (surface/ground)		Land			Air		
<i>Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.</i>							
<b>Workplace Exposure Limit (WEL)</b>							
<ul style="list-style-type: none"> <li>Inhalation: 292 mg/m<sup>3</sup></li> <li>Dermal: 580 mg/kg bw/day</li> </ul>				WEL not exceeded Yes/No			
<b>Quantity involved</b>							
Use as required, and per manufacturer's instructions.							
<b>Persons exposed</b>							
Operatives using the substance.							
<b>Site Specific Precautions/Control Measures</b>							
<ul style="list-style-type: none"> <li>Ventilation: Ensure adequate ventilation of the work areas.</li> <li>Application: Avoid contact with eyes and mouth.</li> <li>PPE: For open systems where prolonged contact is likely, wear safety glasses with side shields Approved to BS EN 166, long sleeves and chemical resistant gloves (Nitrile) approved to BS EN 374. Remove and replace any clothing if contaminated by product. Approved respirators may be necessary to prevent over exposure by inhalation. It is recommended to use half face filter mask to protect from overexposure by inhalation.</li> <li>Safety: Keep locked up and away from children. Keep away from food, drink and animal feed stuffs.</li> <li>Do not mix with any other chemicals other than as advised by the manufacturer.</li> </ul>							
<b>Monitoring</b>							
Air Monitoring Required				Training Required			
Equipment Required				Health Surveillance Required			
<b>Spillage Procedure</b>							
Spilled product must be swept up and place into approved containers for later disposal. Eventually flush contaminated place with plenty of water. If needed contaminated earth must be evacuated. This product is not regarded as hazardous waste.							

First Aid Treatment						
<ul style="list-style-type: none"> <li>• INHALATION: Move to fresh air. If unconscious, place in recovery position. Seek medical help. Symptoms: Nausea or light-headedness</li> <li>• SKIN CONTACT: Wash area with plenty soap and water. Remove any contaminated clothing. Seek advice if irritation persists. Symptoms: Skin irritation</li> <li>• EYE CONTACT: Flush out eyes with clean water, whilst lifting the eyelids, continue for 15 minutes or until the irritation subsides. Seek medical help if irritation persists. Symptoms: Burning feeling and temporary redness.</li> <li>• INGESTION: If swallowed, DO NOT induce vomiting. Wash out mouth and give water to drink. Get immediate medical help.</li> </ul>						
<i>Symptoms: May cause discomfort.</i>						
Warning signs						
						
Corrosive	Oxidising	Flammable	Irritant	Long term Health Hazards	Toxic	Harmful to environment
No	No	No	Yes	No	No	No
PPE requirements						
						
Gloves	Dust Mask	Overalls	Eye Protection	Face Shield	Respirator	
Type: EN374	Type: n/a	Type: Standard	Type: EN166	Type: n/a	Type: A or K	
Storage/Handling						
<ul style="list-style-type: none"> <li>• Store in a cool well-ventilated place out of direct sunlight and away from children.</li> <li>• Keep in original container, which should be kept closed. Transport in HDPE drums.</li> </ul>						
Waste disposal methods						
Contamination does not rise. Flush the residues down into the sewage and drainage 5 system leading to waste treatment plant in a controlled manner. Prevent large quantities from contacting soil, waterways and sewerage. Report contamination. Keep animals away from large spills. The product is not classified as hazardous for environment.						
Fire/Explosion						
When AdBlue is stored in a GreenChem tank system and a fire or extreme heat threats the system, a pressure increase will occur and the container may burst. Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. Irritating substances may be emitted, so self-contained breathing apparatus will be required.						
Comments/Further action						
(none)						
Overall Assessment of Risk						
Not regarded as a Health or Environmental hazard under current legislation.						
Risk Rating: LOW						

## COSHH ASSESSMENT: CEMENT AND CEMENT-BASED MORTAR

<b>Product name</b>	Cement and cement-based mortar		<b>Client name</b>	Southern Piling				
<b>Product code</b>	Dry mixture of Calcium Silicate/Alumina/Gypsum		<b>Assessor name</b>	James Cumming (Simple Safety Advice)				
<b>Initial Risk Assessment</b>								
Dry Cement powder may contain Silica which cause harm to health if exposure levels are great. When mixed with water, cement produces a strong alkaline which could cause irritation and burns to skin. Treat with great care. Causes serious eye damage. May cause skin and respiratory irritation. May cause an allergic skin reaction.								
Initial Risk Rating: MEDIUM								
<b>Task/Purpose</b>								
Supplied preferably in 25kg sacks though be supplied pre mixed. Mixed on site for mortars, concrete and other bonding agents.								
<b>Form</b>								
<b>Dust</b>	Fumes	Vapour	Mist	Gasses	Liquid	Lead	Smoke	<b>Slurry</b>
<b>Routes of entry into the body</b>								
<b>Inhalation</b>		<b>Ingestion</b>		Absorption		<b>Direct contact</b>		
<b>Hazards/ill health effects</b>								
<b>Breathlessness</b>	<b>Dermatitis</b>	Burns		<b>Irritant</b>	<b>Asphyxiation</b>	<b>Other</b>		
<b>Environmental Risks i.e., is this material harmful to the environment and/or eco-toxic?</b>								
Water (surface/ground)			Land			Air		
<i>Prevent from entering drains, sewers or water courses</i>								
<b>Workplace Exposure Limit (WEL)</b>								
<b>Substance</b>	<b>WEL</b>	<b>PERIOD</b>		WEL not exceeded Yes/No				
Total inhalable dust	10 mg/m <sup>3</sup>	8-hour TWA						
Respirable dust	4 mg/m <sup>3</sup>	8-hour TWA						
Respirable Silica	0.1 mg/m <sup>3</sup>	8-hour TWA						
<b>Quantity involved</b>								
Dependant on works.								
<b>Persons exposed</b>								
Operatives working with the mixing of and use of cement and mortar.								














Site Specific Precautions/Control Measures						
<p><b>WET CEMENT MAY CAUSE ALKALI BURNS if in direct contact with skin. You MUST wear the appropriate protective clothing at all times when working with cement, concrete or mortar.</b></p> <ul style="list-style-type: none"> <li>Inhalation of cement dust should be avoided wherever possible.</li> <li>Manual handling of the product should be minimised through the use of mechanical aids etc, wherever possible. Account should be taken of the Manual Handling Regulations and care should be taken when lifting by hand.</li> <li>Respiratory Protection: Suitable respiratory protection (HSE approved standard) should be worn to ensure that personal exposure is less than the workplace exposure limit values.</li> <li>Always ensure good ventilation.</li> <li>Do not eat drink or smoke during work to avoid cement dust and wet cement coming into contact with skin or mouth.</li> <li>PPE: Boots, Gloves, glasses and FFP3 respiratory face masks.</li> <li>Prevent from entering drains, sewers or water courses.</li> </ul> <p>NOTE: Operatives should wear overalls (or at least work clothes that can be removed for washing before leaving site) as contamination should be contained. Clothing contaminated by wet cement spillage should be removed and washed to prevent irritation and/or cement burns to the skin.</p>						
Monitoring						
Air Monitoring Required			Training Required			
Equipment Required			Health Surveillance Required			
Spillage Procedure						
<p>Recover the spillage in a dry state if possible. Minimise generation of airborne dust. The product can be slurried by the addition of water but will subsequently set as a hard material.</p> <p>Keep children away from clean-up operation.</p>						
First Aid Treatment						
<ul style="list-style-type: none"> <li>Eye contact: Do not rub eyes, remove any contact lenses. Wash eyes immediately with plenty of clean water for at least 15 minutes and seek medical advice without delay.</li> <li>Skin contact: Wash the affected area thoroughly with soap and water before continuing. If irritation, pain or other skin conditions occur, seek medical advice.</li> <li>Clothing contaminated by wet cement should be removed and washed thoroughly before use.</li> <li>Ingestion: Do not induce vomiting. Wash out mouth with water and give patient plenty of water to drink. Seek medical attention.</li> </ul>						
Warning signs						
						
Corrosive	Oxidising	Flammable	Irritant	Long term Health Hazards	Toxic	Harmful to environment
Yes	No	No	Yes	No	No	No

PPE requirements					
					
Gloves	Dust Mask	Overalls	Eye Protection	Face Shield	Respirator
Type: EN420	Type: FFP3	Type: Standard	Type: BS EN 1664 4	Type: n/a	Type: n/a
Storage/Handling					
<ul style="list-style-type: none"> <li>• Packed Cement must be stored in a safe and stable manner, in unopened bags, clear of the ground.</li> <li>• Bulk Cement must be stored in silos that are waterproof, clean and protected from contamination</li> <li>• To prevent burial or suffocation, do not enter a confined space, such as a silo, bin, bulk truck or other storage container or vessel that stores or contains cement without taking the proper safety measures. Cement can build up or adhere to the walls of a confined space. The cement can release, collapse or fall unexpectedly.</li> </ul>					
Waste disposal methods					
<ul style="list-style-type: none"> <li>• Dispose of empty bags or surplus cement to a place authorised to accept builders' waste.</li> <li>• Keep out of reach of children.</li> </ul>					
Fire/Explosion					
Non flammable					
Comments/Further action					
In extreme cases, respirators should be worn.					
Overall Assessment of Risk					
Dry Cement powder may contain Silica which cause harm to health if exposure levels are great. When mixed with water, cement produces a strong alkaline which could cause irritation and burns to skin. Treat with great care. Causes serious eye damage. May cause skin and respiratory irritation. May cause an allergic skin reaction.					
Risk Rating: LOW					

## COSHH ASSESSMENT: DIESEL FUEL/GAS OIL

<b>Product name</b>	Diesel Fuel/Gas Oil		<b>Client name</b>	Southern Piling				
<b>Product code</b>	n/a		<b>Assessor name</b>	James Cumming (Simple Safety Advice)				
<b>Initial Risk Assessment</b>								
Classified as dangerous for the environment. Prolonged exposure can give rise to serious health risks however during normal use, and with good ventilation, the risks will be reduced.								
Initial Risk Rating: MEDIUM								
<b>Task/Purpose</b>								
Derv is gas oil for use in on-road automotive vehicles. Site forklifts dumpers and generators operatives will come across this product when site plant in operation.								
<b>Form</b>								
Dust	Fumes	Vapour	Mist	Gasses	Liquid	Lead	Smoke	Slurry
<b>Routes of entry into the body</b>								
Inhalation		Ingestion		Absorption		Direct contact		
<b>Hazards/ill health effects</b>								
Breathlessness	Dermatitis	Burns	Irritant	Asphyxiation	Other			
<b>Environmental Risks i.e., is this material harmful to the environment and/or eco-toxic?</b>								
Water (surface/ground)		Land			Air			
Expected to harm aquatic organisms, may cause long-term effects in the aquatic environment. May bio-accumulate. Films formed on water may affect oxygen transfer and damage organisms. Likely to biodegrade slowly.								
<b>Workplace Exposure Limit (WEL)</b>								
<ul style="list-style-type: none"> <li>Short Term 0.25 hrs @ 10 milligrams per m<sup>3</sup></li> <li>Long Term 8.0 hrs @ 5 milligrams per m<sup>3</sup></li> </ul>				WEL not exceeded Yes/No				
<b>Quantity involved</b>								
Small quantities for power tools and plant as required.								
<b>Persons exposed</b>								
All operatives and/or public coming into contact.								
<b>Site Specific Precautions/Control Measures</b>								
<ul style="list-style-type: none"> <li>Gas Oils and derv are designed to be used in closed systems.</li> <li>Avoid skin contact when refuelling vehicles or working on fuel system components.</li> <li>PPE: Where exposure is likely protective clothing should be worn including impervious GLOVES and EYE</li> <li>Protection: Ensure good ventilation.</li> <li>Respiratory protection: Unlikely to be required in normal use but ensure good ventilation</li> <li>Hand and skin protection: Hand and skin protection recommended at all times. Where exposure is likely protective clothing must be worn, including nitrile gloves.</li> </ul>								
<b>Monitoring</b>								
Air Monitoring Required				Training Required				
Equipment Required				Health Surveillance Required				



Spillage Procedure						
Treat any spillage as a fire hazard. Spray, vapour or mist can be a potential fire or explosion hazard. May cause damage to surfaces making them Slippery. Contain spillage - do not wash spillage down drain. Absorb using absorbent clay, diatomaceous clay or other suitable absorbent.						
First Aid Treatment						
<ul style="list-style-type: none"> <li>Ingestion: Wash mouth out with water and give water to drink. If a large amount has been swallowed get medical advice. DO NOT INDUCE VOMITING BECAUSE OF THE DANGER OF ASPIRATION.</li> <li>Skin: Wash skin as soon as possible with soap and water. Change contaminated clothing and launder before reuse. Get medical advice if irritation persists. Any injection of fuel under the skin should be considered an EMERGENCY - get medical advice URGENTLY.</li> <li>Eyes: Wash out thoroughly with large amounts of water. If redness and/or irritation continue get medical advice.</li> <li>Inhalation: If inhalation of vapour causes irritation or drowsiness remove to fresh air. Get medical advice if the symptoms continue.</li> </ul>						
Warning signs						
						
Corrosive	Oxidising	Flammable	Irritant	Long term Health Hazards	Toxic	Harmful to environment
No	No	Yes	Yes	Yes	No	Yes
PPE requirements						
						
Gloves	Dust Mask	Overalls	Eye Protection	Face Shield	Respirator	
Type: BS EN374	Type: n/a	Type: n/a	Type: EN 166	Type: n/a	Type: n/a	
Storage/Handling						
<ul style="list-style-type: none"> <li>Drums should be stored on their sides on racks preferably under cover, out of direct sunlight, in well ventilated conditions.</li> <li>Other types of containers should be stored under cover out of direct sunlight, in well ventilated conditions. Care should be taken to avoid over-stacking.</li> </ul>						
Waste disposal methods						
<ul style="list-style-type: none"> <li>Dispose by incineration or by methods approved by Local Authority.</li> <li>Do not discharge into the public drainage system, or marine and inland waterways.</li> </ul>						
Fire/Explosion						
<ul style="list-style-type: none"> <li>Extinguish with Dry Powder, Foam or Water Fog. For small fires use CO2.</li> <li>Do not use water jets.</li> <li>Note: Flash Point 60°C.</li> <li>Fires in closed or confined spaces should be tackled by trained personnel who should wear breathing apparatus.</li> </ul>						
















**CALL:** 01273 493863  
**CONTACT:** info@southernpiling.co.uk  
**VISIT:** www.southernpiling.co.uk

<b>Comments/Further action</b>
Keep out of reach to children.
<b>Overall Assessment of Risk</b>
Classified as dangerous for the environment. Prolonged exposure can give rise to serious health risks however during normal use, and with good ventilation, the risks will be reduced.
<b>Risk Rating: LOW</b>

## COSHH ASSESSMENT: HYDRAULIC OIL

<b>Product name</b>	Hydraulic oil		<b>Client name</b>	Southern Piling			
<b>Product code</b>	22, 32, 37, 46, 68, 100, 150, 220, 320, A7C-A7L		<b>Assessor name</b>	James Cumming (Simple Safety Advice)			
<b>Initial Risk Assessment</b>							
Classified as dangerous for the environment. Prolonged exposure can give rise to serious health risks however during normal use, the risks will be reduced. Note: Environmental options available.							
Initial Risk Rating: MEDIUM							
<b>Task/Purpose</b>							
Utilised under pressure within cranes, forklifts and ground works machinery, risk of exposure to staff when repair or after a pressure leak.							
<b>Form</b>							
Dust	Fumes	Vapour	Mist	Gasses	Liquid	Lead	Smoke
<b>Routes of entry into the body</b>							
Inhalation	Ingestion		Absorption		Direct contact		
<b>Hazards/ill health effects</b>							
Breathlessness	Dermatitis	Burns	Irritant	Asphyxiation	Other		
<b>Environmental Risks i.e., is this material harmful to the environment and/or eco-toxic?</b>							
Water (surface/ground)		Land			Air		
Expected to harm aquatic organisms, may cause long-term effects in the aquatic environment. May bio-accumulate. Films formed on water may affect oxygen transfer and damage organisms. Likely to biodegrade slowly.							
<b>Workplace Exposure Limit (WEL)</b>							
10mg/ 15 min. STEL			WEL not exceeded Yes/No				
<b>Quantity involved</b>							
Small quantities for power tools and plant as required.							
<b>Persons exposed</b>							
All operatives and/or public coming into contact.							
<b>Site Specific Precautions/Control Measures</b>							
<ul style="list-style-type: none"> <li>Gas Oils and derv are designed to be used in closed systems.</li> <li>Avoid skin contact when Servicing vehicles or working on system components.</li> <li>PPE: Where exposure is likely protective clothing should be worn including impervious GLOVES and EYE</li> <li>Protection: Ensure good ventilation.</li> <li>Respiratory protection: Unlikely to be required in normal use but ensure good ventilation</li> <li>Hand and skin protection: Hand and skin protection recommended at all times. Where exposure is likely protective clothing must be worn, including nitrile gloves.</li> </ul>							
<b>Monitoring</b>							
Air Monitoring Required			Training Required				
Equipment Required			Health Surveillance Required				

Spillage Procedure						
Treat any spillage as a fire hazard. Spray, vapour or mist can be a potential fire or explosion hazard. May cause damage to surfaces making them slippery. Contain spillage - do not wash spillage down drain. Absorb using absorbent clay, diatomaceous clay or other suitable absorbent. Transfer to a closable, labelled salvage container for disposal by an appropriate method.						
First Aid Treatment						
<ul style="list-style-type: none"> <li>Ingestion: Wash mouth out with water and give water to drink. If a large amount has been swallowed get medical advice.</li> <li>Skin: Wash skin as soon as possible with soap and water. Change contaminated clothing and launder before reuse. Get medical advice if irritation persists. Any injection of hydraulic oil under the skin should be considered an EMERGENCY - get medical advice URGENTLY.</li> <li>Eyes: Wash out thoroughly with large amounts of water. If redness and/or irritation continue get medical advice.</li> </ul>						
Warning signs						
						
Corrosive	Oxidising	Flammable	Irritant	Long term Health Hazards	Toxic	Harmful to environment
No	No	Yes	Yes	No	No	Yes
PPE requirements						
						
Gloves	Dust Mask	Overalls	Eye Protection	Face Shield	Respirator	
Type: BS EN374	Type: n/a	Type: n/a	Type: EN 166	Type: n/a	Type: n/a	
Storage/Handling						
<ul style="list-style-type: none"> <li>Drums should be stored on their sides on racks preferably under cover, out of direct sunlight, in well ventilated conditions.</li> <li>Other types of containers should be stored under cover out of direct sunlight, in well ventilated conditions. Care should be taken to avoid over-stacking.</li> </ul>						
Waste disposal methods						
<ul style="list-style-type: none"> <li>Dispose by incineration or by methods approved by Local Authority.</li> <li>Do not discharge into the public drainage system, or marine and inland waterways.</li> </ul>						
Fire/Explosion						
<ul style="list-style-type: none"> <li>Extinguish with Dry Powder, Foam or Water Fog. For small fires use CO2</li> <li>Do not use water jets.</li> <li>Note - Flash Point 60°C.</li> <li>Fires in closed or confined spaces should be tackled by trained personnel who should wear breathing apparatus.</li> </ul>						
















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<b>Comments/Further action</b>
Keep out of reach to children.
<b>Overall Assessment of Risk</b>
Classified as dangerous for the environment. Prolonged exposure can give rise to serious health risks however during normal use, and with good ventilation, the risks will be reduced.
<b>Risk Rating: LOW</b>

## COSHH ASSESSMENT: READY MIX CONCRETE

<b>Product name</b>	Ready mix concrete	<b>Client name</b>	Southern Piling
<b>Product code</b>	n/a	<b>Assessor name</b>	James Cumming (Simple Safety Advice)
<b>Initial Risk Assessment</b>			
Classified as dangerous for the environment. Prolonged exposure can give rise to serious health risks however during normal use, the risks will be reduced. Note: Environmental options available.			
Initial Risk Rating: MEDIUM			
<b>Task/Purpose</b>			
Concrete is brought to site by mixer truck and is usually discharged directly into final position such as trenches or foundations. Sometimes transferred by dumper or other machines. There is some personnel contact when the concrete has to be vibrated, tamped or levelled. Dust may contain Silica.			
<b>Form</b>			
<b>Dust</b>	Fumes	Vapour	Mist
	Gasses	Liquid	Lead
	Smoke	<b>Slurry</b>	
<b>Routes of entry into the body</b>			
Inhalation	<b>Ingestion</b>	Absorption	<b>Direct contact</b>
<b>Hazards/ill health effects</b>			
<b>Breathlessness</b>	<b>Dermatitis</b>	<b>Burns</b>	<b>Irritant</b>
	Asphyxiation	Other	
<b>Environmental Risks i.e., is this material harmful to the environment and/or eco-toxic?</b>			
<b>Water (surface/ground)</b>	Land	Air	
When used and disposed of as intended no adverse Environmental effects are foreseen. Entry into watercourses should be avoided.			
<b>Workplace Exposure Limit (WEL)</b>			
<b>Substance</b>	<b>WEL</b>	<b>PERIOD</b>	WEL not exceeded Yes/No
Total Dust:	10 mg/m <sup>3</sup>	8-hours TWA	
Respirable Dust:	4 mg/m <sup>3</sup>	8-hours TWA	
Respirable Quartz Crystalline Silica SiO <sub>2</sub>	0.1mg/m <sup>3</sup>		
<b>Quantity involved</b>			
Various depending on task but normally large quantities.			
<b>Persons exposed</b>			
All operatives and/or public coming into contact.			

Site Specific Precautions/Control Measures						
<ul style="list-style-type: none"> <li>Direct skin contact with fresh concrete should be avoided and do not kneel or sit on the concrete as harmful contact can occur through saturated clothing.</li> <li>Inhalation: The surface treatment and cutting of hardened concrete, which may contain high silica aggregates, can create dust. If inhaled in excessive quantities over a long period, concrete dust containing silica can constitute a long-term hazard. Respirators should be worn if harmful dust is being created.</li> <li>Manual handling of the product should be minimised through the use of mechanical aids etc, wherever possible. Account should be taken of the Manual Handling Regulations and care should be taken when lifting by hand/shovel.</li> <li>PPE: Protective clothing, Boots, Gloves, glasses are recommended and FFP3 respiratory face masks MAY be required.</li> </ul>						
Monitoring						
Air Monitoring Required			Training Required			
Equipment Required			Health Surveillance Required			
Spillage Procedure						
<ul style="list-style-type: none"> <li>Personal Precautions: Use Personal Protection Equipment. Wet concrete can cause serious burns if in direct contact with skin.</li> <li>Environmental Precautions: Entry into watercourses should be avoided.</li> <li>Methods for Cleaning: No special requirement but clean without delay before concrete hardens.</li> </ul>						
First Aid Treatment						
<ul style="list-style-type: none"> <li>Skin Contact: Where contact occurs, whether directly or through saturated clothing, wash immediately with soap and water.</li> <li>If concrete enters boots or gloves or saturates clothing, the article should be removed immediately and washed before further use.</li> <li>Eye Contact: Immediately and thoroughly irrigate with water.</li> <li>Ingestion: Wash out mouth. Drink plenty of water. Do not induce vomiting. Seek medical advice if a large amount is swallowed.</li> </ul>						
Warning signs						
						
Corrosive	Oxidising	Flammable	Irritant	Long term Health Hazards	Toxic	Harmful to environment
Yes	No	No	Yes	No	No	No
PPE requirements						
						
Gloves	Dust Mask	Overalls	Eye Protection	Face Shield	Respirator	
Type: EN420	Type: FFP3	Type: Yes	Type: Yes	Type: n/a	Type: Possibly	
















Storage/Handling
<ul style="list-style-type: none"> <li>The hardening process of wet concrete takes time. Until it has hardened the precautions given in this data sheet should continue to be taken and access by unauthorised persons should be prevented.</li> <li>Skin contact should be avoided. Wet concrete is abrasive and highly alkaline.</li> </ul>
Waste disposal methods
<ul style="list-style-type: none"> <li>Likely Residues / Waste Product: Alkaline slurry. Inert hardened material.</li> <li>Safe Handling of Residues / Waste Product</li> <li>Aggregates are inert but should be disposed of in accordance with local and national legal requirements. See the Environmental Protection Act 1990 "Duty of Care" and other current legislation.</li> </ul>
Fire/Explosion
Non flammable
Comments/Further action
(none)
Overall Assessment of Risk
The risk to health is not significant when product handled by plant or tools handling by hand has safety issues
Risk Rating: LOW (if handling by hand)



## COSHH ASSESSMENT: PRIME-A-PUMP

<b>Product name</b>	Prime-a-pump	<b>Client name</b>	Southern Piling
<b>Product code</b>	n/a	<b>Assessor name</b>	James Cumming (Simple Safety Advice)
<b>Initial Risk Assessment</b>			
The risk to health is not significant when product handled by plant or tools handling by hand has safety issues.			
<b>Initial Risk Rating: MEDIUM (if handling by hand)</b>			
<b>Task/Purpose</b>			
The Prime-a-Pump is in a powder form, and consists mainly of Sodium Carbonate and Polymer. It is transported to site in 450g bottles. This is added to the concrete lines at the start of each day to allow the concrete to flow more easily during pumping.			
<b>Form</b>			
<b>Dust</b>	Fumes	Vapour	Mist
	Gasses	Liquid	Lead
	Smoke	Slurry	
<b>Routes of entry into the body</b>			
<b>Inhalation</b>	<b>Ingestion</b>	Absorption	<b>Direct contact</b>
<b>Hazards/ill health effects</b>			
Breathlessness	Dermatitis	Burns	<b>Irritant</b>
			Asphyxiation
			Other
<b>Environmental Risks i.e., is this material harmful to the environment and/or eco-toxic?</b>			
<b>Water (surface/ground)</b>		Land	Air
When used and disposed of as intended no adverse Environmental effects are foreseen. Entry into watercourses should be avoided.			
<b>Workplace Exposure Limit (WEL)</b>			
<b>Substance</b>	<b>WEL</b>	<b>PERIOD</b>	WEL not exceeded Yes/No
Total Dust:	5 mg/m <sup>3</sup>	8-hours TWA	
Respirable Dust:	5 mg/m <sup>3</sup>	8-hours TWA	
<b>Quantity involved</b>			
Various depending on task but normally large quantities.			
<b>Persons exposed</b>			
Operatives and anyone within the vicinity of works area.			
<b>Site Specific Precautions/Control Measures</b>			
<ul style="list-style-type: none"> <li>Direct skin contact with fresh concrete should be avoided and do not kneel or sit on the concrete as harmful contact can occur through saturated clothing.</li> <li>Inhalation: The surface treatment and cutting of hardened concrete, which may contain high silica aggregates, can create dust. If inhaled in excessive quantities over a long period, concrete dust containing silica can constitute a long-term hazard. Respirators should be worn if harmful dust is being created.</li> <li>Manual handling of the product should be minimised through the use of mechanical aids etc, wherever possible. Account should be taken of the Manual Handling Regulations and care should be taken when lifting by hand/shovel.</li> <li>PPE: Protective clothing, Boots, Gloves, glasses are recommended and FFP3 respiratory face masks MAY be required.</li> </ul>			

Monitoring						
Air Monitoring Required			Training Required			
Equipment Required			Health Surveillance Required			
Spillage Procedure						
<ul style="list-style-type: none"> <li>Personal Precautions: Use Personal Protection Equipment. Wet concrete can cause serious burns if in direct contact with skin.</li> <li>Environmental Precautions: Entry into watercourses should be avoided.</li> <li>Methods for Cleaning: No special requirement but clean without delay before concrete hardens.</li> </ul>						
First Aid Treatment						
<ul style="list-style-type: none"> <li>Skin Contact: Where contact occurs, whether directly or through saturated clothing, wash immediately with soap and water.</li> <li>Eye Contact: Immediately and thoroughly irrigate with water.</li> <li>Ingestion: Wash out mouth. Drink plenty of water. Do not induce vomiting. Seek medical advice if a large amount is swallowed.</li> </ul>						
Warning signs						
						
Corrosive	Oxidising	Flammable	Irritant	Long term Health Hazards	Toxic	Harmful to environment
Yes	No	No	Yes	No	No	No
PPE requirements						
						
Gloves	Dust Mask	Overalls	Eye Protection	Face Shield	Respirator	
Type: EN420	Type: FFP3	Type: Yes	Type: Yes	Type: n/a	Type: Possibly	
Storage/Handling						
<ul style="list-style-type: none"> <li>The hardening process of wet concrete takes time. Until the concrete has hardened the precautions given in this data sheet should continue to be taken and access by unauthorised persons should be prevented.</li> <li>Skin contact should be avoided. Wet concrete is abrasive and highly alkaline.</li> </ul>						
Waste disposal methods						
<ul style="list-style-type: none"> <li>Likely residues/Waste product: Empty containers</li> <li>Safe handling of residues/Waste Product: See the Environmental Protection Act 1990 "Duty of Care" and other current legislation.</li> </ul>						
Fire/Explosion						
Non flammable						



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<b>Comments/Further action</b>
(none)
<b>Overall Assessment of Risk</b>
The risk to health is not significant when product handled by plant or tools handling by hand has safety issues
Risk Rating: LOW (if handling by hand)



## CLIENT COMMENT AND SIGN OFF SHEET

Client Comments

I have read and understand the RAMS		
Print	Sign	Date

## APPENDIX 1: EMERGENCY PROCEDURES

Emergency	Action	Action by:
Fire	<p>Raise the Alarm to alert the site.</p> <p>If extinguishers are available and you have been trained, tackle the fire.</p> <p>Phone 999 for the Fire Brigade.</p> <p>Alert the Fire brigade to any hazards, e.g., propane or oxygen bottles, fuel bowsers.</p> <p>Report to the site Assembly Point.</p>	All
Personal injury	<p>Inform the First Aider.</p> <p>Inform the Foreman.</p> <p>If the injury is serious, dial 999 and call for an ambulance.</p>	All
Gas main strike or damage	<p>Stop work, switch off Plant.</p> <p>Notify the Foreman.</p> <p>Telephone the Transco Emergency number: <b>0800 111 999</b>, but if using a Mobile, away from the leak.</p> <p>Evacuate the Area; 5m from a service pipe, 200m from a high pressure main.</p> <p>If the gas ignites, dial 999 for the fire brigade. Do not tackle.</p> <p>Advise Southern Piling management.</p>	All
Electric cable strike	<p>Stop all operations.</p> <p>If the rig is still in contact with the power source, the driver is to remain in the cab and warn others to stay well clear.</p> <p>Notify the Foreman and Site Agent.</p> <p>Switch off power if possible. If this is not possible, or there is a casualty, dial 999 and call the emergency services.</p> <p>If there is a casualty and the power cannot be isolated, safeguard yourself before attempting a rescue. If the voltage is 240v or less, you can stand on dry non-conducting material and push the casualty clear using a dry non-conduction object.</p>	All
Suspected explosive device (Old shells, UXB, suspicious package)	<p>Stop work.</p> <p>Shut down plant. Move away.</p> <p>Do not handle or investigate the item.</p> <p>Notify the Foreman and Site Agent.</p> <p>Cordon off the area.</p>	All

(continued on following page)

## APPENDIX 1: EMERGENCY PROCEDURES (CONTINUED)

Emergency	Action	Action by:
Pollution of soil, drains or water courses	Stop the source of pollution at source. Attempt to divert or dam the spillage to prevent ingress into drains or watercourse. Seal off drains. Use absorbent material or spill-kit to soak up loose pollutant. For a major pollution incident, call the Environmental Agency on 0800 807 060 (24 hours).	All
Archaeological artefacts	Stop work. Advise the Site Agent and seek instructions.	All

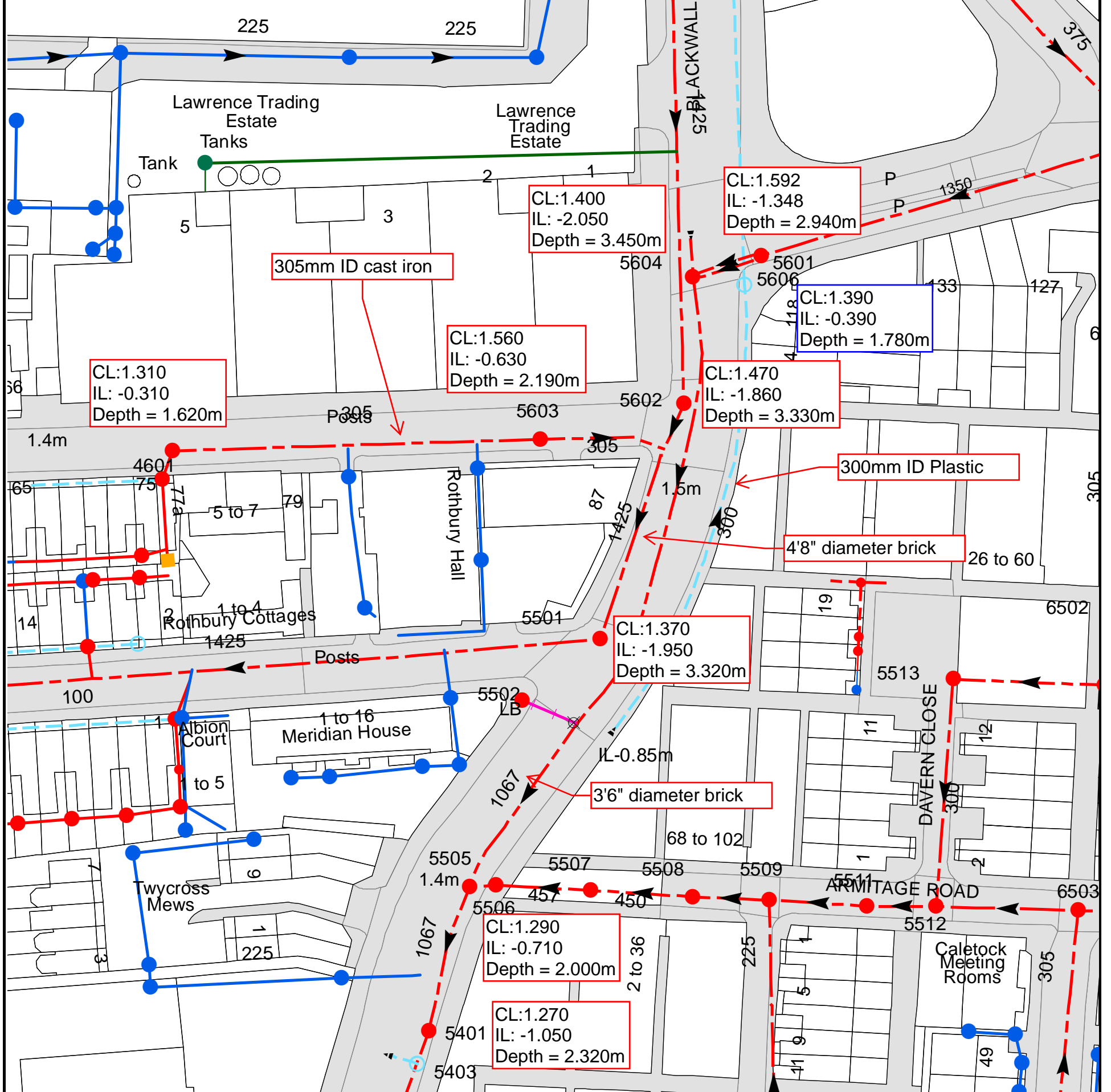
### Electricity Emergency Numbers

- **East Midlands** - CE Electric: **0800 0568 090**
- **Eastern Region** - EDF Energy: **0800 783 8838**
- **London** - EDF Energy: **0800 365 9000**
- **Manweb** – Scottish Power: **0845 272 7999**
- **Midlands** - CE Electric: **0800 328 1111**
- **Northern Electric** - NEDL: **0800 668 877**
- **Norweb** - United Utilities: **0800 195 4141**
- **Scottish Power** – Scottish Power: **0845 272 7999**
- **Scottish Hydro-Electric** - S&SE: **0800 300 999**
- **Seeboard** - EDF Energy: **0800 783 8866**
- **Southern Electric** - S&SE: **0845 770 8090**
- **South Wales** - Western Power: **0800 052 0400**
- **South West** - Western Power: **0800 365 900**
- **Yorkshire Electricity** - YEDL: **0800 375 675**



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## APPENDIX 2: THAMES WATER ASSET PLAN



The width of the displayed area is 200m

The position of the apparatus shown on this plan is given without obligation and warranty, and the accuracy cannot be guaranteed. Service pipes are not shown but their presence should be anticipated. No liability of any kind whatsoever is accepted by Thames Water for any error or omission. The actual position of mains and services must be verified and established on site before any works are undertaken.

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NB. Levels quoted in metres Ordnance Newlyn Datum. The value -9999.00 indicates no survey information is available.



















Manhole Reference	Manhole Cover Level	Manhole Invert Level
64WY	n/a	n/a
64XY	n/a	n/a
64XZ	n/a	n/a
64YQ	n/a	n/a
64YR	n/a	n/a
6503	1.72	-.55
5512	1.8	-.53
	1.41	-.35
CL:1.290	n/a	n/a
IL: -0.710	n/a	n/a
Depth = 2.000m	n/a	n/a
5506	1.29	-.71
5502	1.41	n/a
5507	n/a	n/a
5508	n/a	n/a
5509	1.82	-.96
551A	n/a	n/a
551B	n/a	n/a
551C	n/a	n/a
551D	n/a	n/a
5511	n/a	n/a
5602	1.47	-1.86
5604	1.4	-2.05
5606	1.39	-.39
5601	1.592	-1.348
461A	n/a	n/a
55YT	n/a	n/a
55XZ	n/a	n/a
56ZR	n/a	n/a
5603	1.56	-.63
5501	1.37	-1.95
46ZS	n/a	n/a
46ZT	n/a	n/a
46YZ	n/a	n/a
46ZR	n/a	n/a
46YY	n/a	n/a
46YW	n/a	n/a
46ZQ	n/a	n/a
46ZU	n/a	n/a
45XU	n/a	n/a
4601	1.31	.31
45ZU	n/a	n/a
46YX	n/a	n/a
45VS	n/a	n/a
45VR	n/a	n/a
45TQ	n/a	n/a
45SU	n/a	n/a
45RX	n/a	n/a
45VQ	n/a	n/a
45TU	n/a	n/a
45ST	n/a	n/a
45SZ	n/a	n/a
45XX	n/a	n/a
45TT	n/a	n/a
45TS	n/a	n/a
45UX	n/a	n/a
45UY	n/a	n/a
45UZ	n/a	n/a
45VX	n/a	n/a
45TZ	n/a	n/a
45TV	n/a	n/a
45TX	n/a	n/a
45TW	n/a	n/a
45TR	n/a	n/a
45ZS	n/a	n/a
5403	1.27	-.44
55XY	n/a	n/a
5401	1.27	-1.05

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# Sewer Key - Commercial Drainage and Water Enquiry

## Public Sewer Types (Operated & Maintained by Thames Water)

-  **Foul:** A sewer designed to convey waste water from domestic and industrial sources to a treatment works.
-  **Surface Water:** A sewer designed to convey surface water (e.g. rain water from roofs, yards and car parks) to rivers or watercourses.
-  **Combined:** A sewer designed to convey both waste water and surface water from domestic and industrial sources to a treatment works.
-  Trunk Surface Water
-  Trunk Foul
-  Storm Relief
-  Trunk Combined
-  Vent Pipe
-  Bio-solids (Sludge)
-  Proposed Thames Surface Water Sewer
-  Proposed Thames Water Foul Sewer
-  Gallery
-  Foul Rising Main
-  Surface Water Rising Main
-  Combined Rising Main
-  Sludge Rising Main
-  Proposed Thames Water Rising Main
-  Vacuum





## Sewer Fittings

A feature in a sewer that does not affect the flow in the pipe. Example: a vent is a fitting as the function of a vent is to release excess gas.

-  Air Valve
-  Dam Chase
-  Fitting
-  Meter
-  Vent Column




## Operational Controls

A feature in a sewer that changes or diverts the flow in the sewer. Example: A hydrobrake limits the flow passing downstream.

-  Control Valve
-  Drop Pipe
-  Ancillary
-  Weir



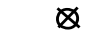
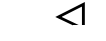
## End Items

End symbols appear at the start or end of a sewer pipe. Examples: an Undefined End at the start of a sewer indicates that Thames Water has no knowledge of the position of the sewer upstream of that symbol, Outfall on a surface water sewer indicates that the pipe discharges into a stream or river.

-  Outfall
-  Undefined End
-  Inlet






## Other Symbols

Symbols used on maps which do not fall under other general categories








-  Public/Private Pumping Station
-  Change of characteristic indicator (C.O.C.I.)
-  Invert Level
-  Summit

## Areas

Lines denoting areas of underground surveys, etc.

-  Agreement
-  Operational Site
-  Chamber
-  Tunnel
-  Conduit Bridge

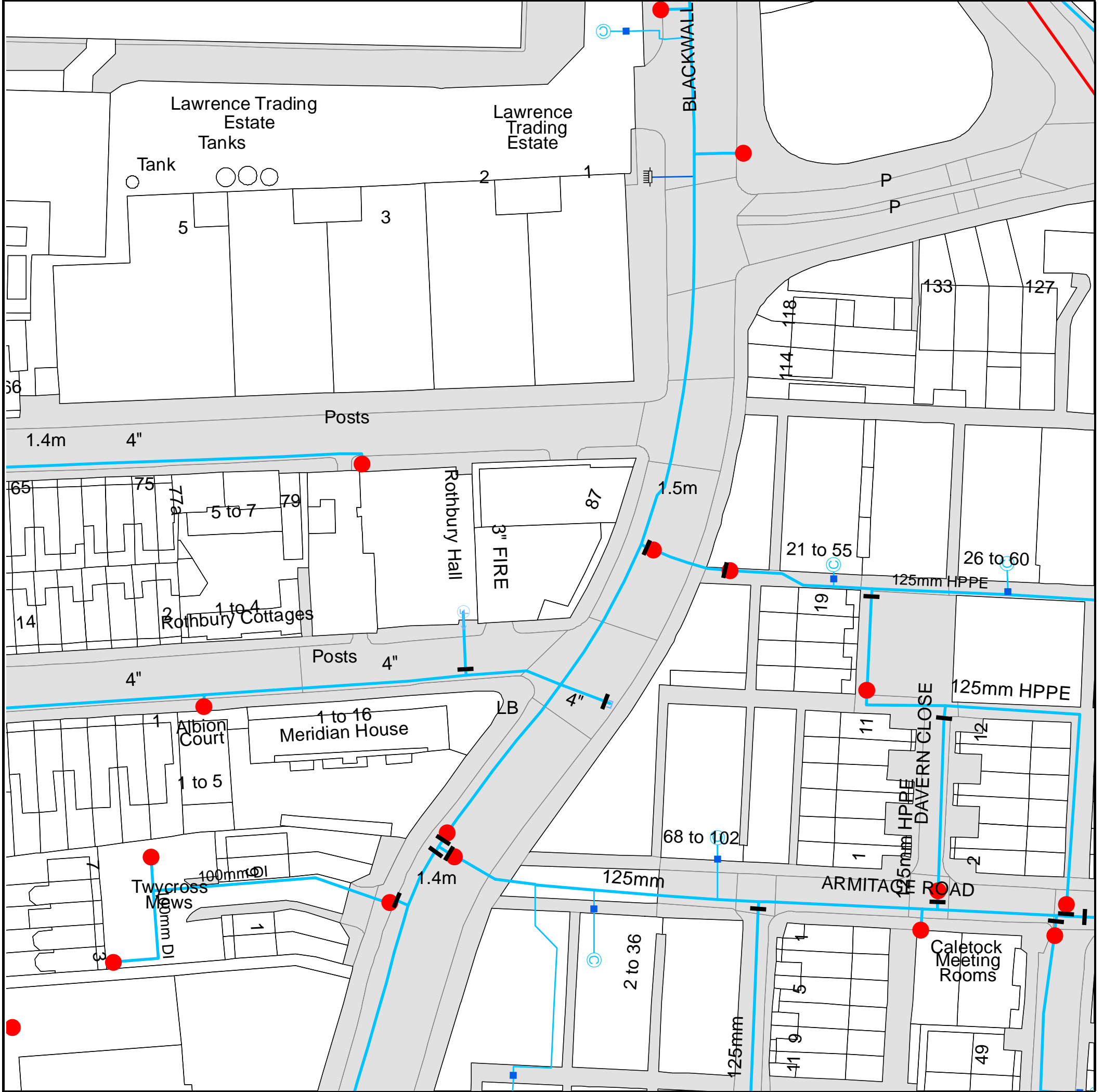
## Other Sewer Types (Not Operated or Maintained by Thames Water)

-  Foul Sewer
-  Surface Water Sewer
-  Combined Sewer
-  Gully
-  Culverted Watercourse
-  Proposed
-  Abandoned Sewer

### Notes:

- 1) All levels associated with the plans are to Ordnance Datum Newlyn.
- 2) All measurements on the plans are metric.
- 3) Arrows (on gravity fed sewers) or flecks (on rising mains) indicate direction of flow.
- 4) Most private pipes are not shown on our plans, as in the past, this information has not been recorded.
- 5) 'na' or '0' on a manhole level indicates that data is unavailable.

- 6) The text appearing alongside a sewer line indicates the internal diameter of the pipe in millimetres. Text next to a manhole indicates the manhole reference number and should not be taken as a measurement. If you are unsure about any text or symbology present on the plan, please contact a member of Property Searches on 0118 925 1504.



The width of the displayed area is 200m

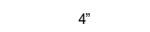

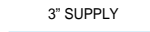
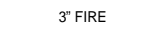



The position of the apparatus shown on this plan is given without obligation and warranty, and the accuracy cannot be guaranteed. Service pipes are not shown but their presence should be anticipated. No liability of any kind whatsoever is accepted by Thames Water for any error or omission. The actual position of mains and services must be verified and established on site before any works are undertaken.

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# Waterworks Key - Commercial Drainage and Water Enquiry

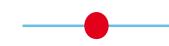
## Water Pipes (Operated & Maintained by Thames Water)

- 
**Distribution Main:** The most common pipe shown on water maps. With few exceptions, domestic connections are only made to distribution mains.
- 
**Trunk Main:** A main carrying water from a source of supply to a treatment plant or reservoir, or from one treatment plant or reservoir to another. Also a main transferring water in bulk to smaller water mains used for supplying individual customers.
- 
**Supply Main:** A supply main indicates that the water main is used as a supply for a single property or group of properties.
- 
**Fire Main:** Where a pipe is used as a fire supply, the word FIRE will be displayed along the pipe.
- 
**Metered Pipe:** A metered main indicates that the pipe in question supplies water for a single property or group of properties and that quantity of water passing through the pipe is metered even though there may be no meter symbol shown.
- 
**Transmission Tunnel:** A very large diameter water pipe. Most tunnels are buried very deep underground. These pipes are not expected to affect the structural integrity of buildings shown on the map provided.
- 
**Proposed Main:** A main that is still in the planning stages or in the process of being laid. More details of the proposed main and its reference number are generally included near the main.

## Valves

-  General Purpose Valve
-  Air Valve
-  Pressure Control Valve
-  Customer Valve

## Hydrants








-  Single Hydrant

## Meters










-  Meter

## End Items

Symbol indicating what happens at the end of a water main.

-  Blank Flange
-  Capped End
-  Emptying Pit
-  Undefined End
-  Manifold
-  Customer Supply
-  Fire Supply

## Operational Sites

-  Booster Station
-  Other
-  Other (Proposed)
-  Pumping Station
-  Service Reservoir
-  Shaft Inspection
-  Treatment Works
-  Unknown
-  Water Tower

## Other Symbols



-  Data Logger

### PIPE DIAMETER

### DEPTH BELOW GROUND

Up to 300mm (12")	900mm (3')
300mm - 600mm (12" - 24")	1100mm (3' 8")
600mm and bigger (24" plus)	1200mm (4')

## Other Water Pipes (Not Operated or Maintained by Thames Water)

- 
**Other Water Company Main:** Occasionally other water company water pipes may overlap the border of our clean water coverage area. These mains are denoted in purple and in most cases have the owner of the pipe displayed along them.
- 
**Private Main:** Indicates that the water main in question is not owned by Thames Water. These mains normally have text associated with them indicating the diameter and owner of the pipe.



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## APPENDIX 3: TOPOGRAPHICAL SURVEY

