CFA Piling Method Statement

152-156 Kentish Town Road
London
NW1 9QB

Prepared by:

17/05/2021 **Simon Tapsell**

Contract Number: **200809**

NFS piling contractors

CONTRACT	200809	SITE ADDRESS	152-156 Kentish Town Road, London NW1 9QB

1. Site Details

Proposed start date:	TBC	Anticipated duration:	6 weeks
Site hours Mon – Fri:	08.00-17.30hrs	Drawing No:	1000-S2-p04

2. CORONAVIRUS COVID-19

During the Coronavirus pandemic we all need to ensure protection of ourselves and others. Many sites have taken their own measures and any extra rules they have implemented must be strictly followed.

Things that we can do to help;

- Ensure only one person travels in a vehicle to and from site.
- Where possible do not enter any site offices and try to engage with site management outside.
- Ensure we follow the Government Social Distancing rules by staying at least 2 metres apart.
- Do not stand in small groups chatting.
- Ensure plenty of hand washing, when arriving on site, before and after using welfare facilities, before leaving works etc.
- Do not all sit in canteens together, use one at a time and then keep apart when eating.
- Bring your own food to site and do not go to local shops at lunchtime and ideally do not use the site kettles or Microwaves during this period.
- Ensure all rubbish is disposed of correctly.
- Do not share PPE and ensure you own PPE is kept clean.
- Keep work vans and vehicle interiors clean.

We have provided the following items and should you require replacement or top ups then these items can be left out for you or dropped to site:

- Each person should have Alcohol Spray dispenser.
- Each gang should have alcohol spray top up bottles.
- Each Gang should have clean water dispenser for hand cleaning on site.
- Each Gang should have heavy duty hand cleaner.

Should any of the gang develop any symptoms they must follow the Governments latest guidance on Self Isolation

3. Scope of Works

Installation of approx. 331 No. 400mm & 600mm diameter CFA bearing piles and CFA secant wall piles. All piles to be set out and constructed as per clients Drawings. Site Datum and existing levels along with PPL levels to be confirmed prior to works starting on site. Piling platform will be set at top of capping beam by the Ground worker and levels given for debonding. The Main Contractor must advise levels prior to piling commencing along with providing a concrete guide wall for the secant piles

4. Site Team

Role	Name	Phone	Email
Visiting Supervisor	Simon Tapsell	07771 961910	simont@neilfoundations.co.uk
Operatives	TBA		
Neil Foundations Systems Ltd	Office	01252 550222	piling@neilfoundations.co.uk

All operatives will have copies of their operator certificates on site.

All Neil Foundations Systems (NFS) staff are CSCS trained along with relevant CPCS training for plant on site, Piling Rig, Concrete Pump, Slinger Signaller and MEWPS.

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Most of NFS staff have also received emergency at work first aid training.

5. Plant and Equipment

Quantity	Item	Comments
1	Soilmec Piling Rig	Certificate will be provided
1	Compressor, hoses and tools	
1	1005 Concrete Pump	
1	Augers	
1	8x5' Storage Cabin	
1	Pressure Washer	
1	Fuel Bowser	

Regular weekly checks will be carried out by the foreman on all of the equipment listed above. Any immediate problems will be communicated directly by phone to the office.

No operative is permitted to operate any form of plant unless they have received appropriate training and have been authorised by NFS to do so.

6. Mobilisation/Demobilisation

The Piling Rig will be delivered to site on a semi low loader, our own operatives will be with the machine to unload and supervise all traffic and pedestrians. Boards will be with the rig to lay under the tracks to prevent damage to the road surface when unloading. Delivery times will be dictated to Neil Foundations Systems (NFS) upon application to the authorities for a movement order but NFS will endeavour to deliver the rig after the morning work and school run, the Piling rig will be delivered prior to any other equipment to suit site situations.

All ancillary equipment will be delivered by hiab lorry which will drive directly onto site and unload under our supervision. Only the delivery drivers are allowed on the lorry beds when following their company rules, NFS Operatives are not allowed onto lorry beds unless safety guards are in place.

The rig will be tracked onto the piling platform and rigged up on the piling mat, it will be erected and rigged ready for use as per the manufacturers hand book.

A concrete pump and agitator will be set up at the front of the site just off the piling area so that ready mixed concrete can access with ease and stay on the haul road.

7. Site Specific

The site is to be prepared by the Main Contractor ensuring that all services are either terminated or diverted and that a Designed piling platform has been constructed to suit the rig loadings provided.

Prior to works starting on site our foreman will request a signed copy of our permit to dig form and also read through this method statement along with our operatives and then once understood the gang will sign and return the method statement brief sheet (attached). The Main Contractor will carry out site induction to include site emergency procedures.

The Main Contractor will also be responsible for providing access roads to the working area.

Main Contractor will also ensure that the site is fenced with hoarding or similar to keep the site safe and to prevent intruders or children entering the site.

Main Contractor are to ensure that all pile positions are free from underground obstructions (footings or services) along with ensuring that there are none overhead (power lines or tree canopies) and that there is clear and sufficient room around the front of the piling rig of at least 800mm. Main Contractor will also be responsible for protecting any existing buildings / landscaping that is to remain on site or neighbouring properties.

The Site is in close proximity to the Northern Line Underground Tunnels with the highest tunnel being approx. 12.5m below Pile Platform level and piles to be installed 6.8m to one side of the tunnel. There are concerns about

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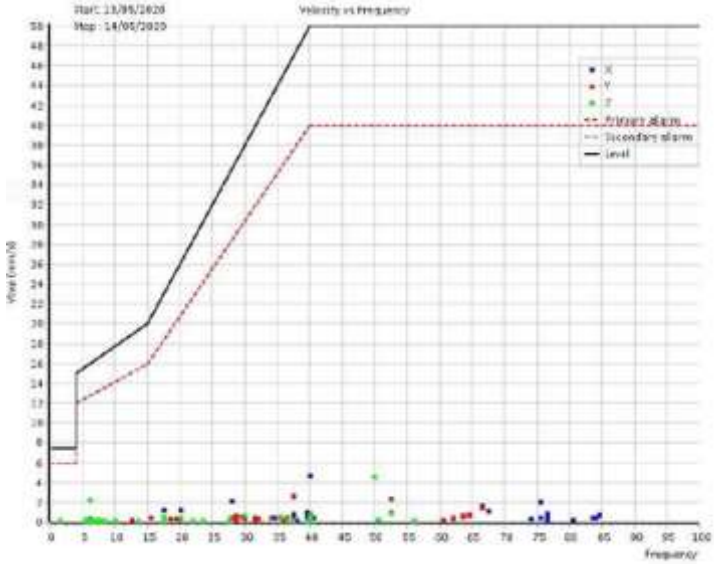
disturbance to the tunnels so CFA piling has been chosen as this system of works creates very little if any vibration. Recent monitoring of CFA piling using a 40ton piling rig shown vibration levels being very low. On site restrictions had trigger levels set at 75mm/s and the attached graph shows readings taken at 3m,7m,and 10m distances from the front of the piling rig during the drilling and filling process with max reading peaking at around 5mm/s.



There are also concerns about Ground Movement and the effects this could have on the tunnels. LUL have already stated that no piles should be installed within 6m above their structures or 3m to the side and no driven piles within 15m. CFA piling has been chosen for the project and as shown above produces very little vibration and with CFA piling as the piles are constructed from bottom up there and with modern machinery and telemetry systems the piles are bored to depth with very little disturbance and a small amount of displacement and then the bore is filled ensuring there is no necking / collapse of the pile bore by pump concrete at a positive pressure. The geology of the site is London Clay so again minimising any risk of undermining during the boring process and pile bore collapse/ necking during the filling process which all reduces any risk to the local LUL tunnels.

All the above is shown in the basement impact assessment produced by AHIG Ltd in June 2016 Document Ref PB-1599-BIA01-152-156 Kentish Town Road and the Dunelm Geotechnical & Enviromental Ground Movement Report No D8002 issued 11.5.2017

The site will also have Vibration and noise monitoring ongoing throughout the piling works. The site management team will issue trigger levels and will monitor levels on a daily basis. Should any trigger levels be met then works will cease while waiting for instructions from site management

The case will be the same should any neighbouring buildings be struck or damaged then work shall cease until further instruction is given from the site management team

The Main Contractor will be responsible for wheel washing and if need be street cleaning.

8. Method of Working

NFS will seek authorisation to commence excavation/installation from the Main Contractor in the form of a Permit to Dig or equivalent. This will confirm that any known services on site have been made safe or have been positively marked, The Main Contractor will be responsible for CAT scanning the area and finding and moving all services along with capping off any drainage.

Prior to the commencement of piling works each day, the concrete pipeline will be adequately lubricated with a concrete/primer mix. The cement concrete/primer will be mixed with water in a tub to a fairly thick consistency. The lubricating mix will be poured directly into the pipeline, and the concrete will follow immediately. The concrete will be pumped slowly through the lines until it flows freely. All concrete pipes will be connected with couplings secured with safety clips and all metal to rubber and rubber to rubber joints must also be fitted with whip checks.

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For the secant piles the positions are predetermined by the concrete guide wall that the Groundworkers will have already installed at the correct level with the correct pile spacings. Before any secant wall piles are installed time will be spent working out the best sequence in terms of male and female piles if these have not already been scheduled on the drawings. Generally, we would aim to have female piles on any corners/ change of directions as this will help maintain the verticality of the male piles when they are installed. Female piles will be installed first on a hit and miss sequence and ensuring not to work too far ahead. The first 2 days will be spent installing female piles and then days 3,4 and 5 will be spent installing hard piles in the gap missed in the guide wall. Care must be taken to ensure each area of secant wall is completed before the female piles become to hard and also to ensure that where an area of secant wall is to be left for a few days then the neighbouring female is drilled/ keyed out ready for when we get back to the area.
We would normally pick just one start point and progress around the site to only 1 joint in the wall.
Secant wall piles are formed in the same way as a CFA pile below but the female piles are formed using a softer concrete mix and do not have reinforcing installed.

The piling rig will be set up over the pre-marked pile location, using datum's provided by others; Working from a firm, dry, level piling platform the piling rig is positioned over the pile location, defined by a length of reinforcing bar driven into the ground. The auger will then be brought onto position Before auger penetration commences the mast will be checked for verticality by observing attached levelling aids. The verticality of the mast will be adjusted hydraulically using slewing rams. The pile will be checked for verticality when it has been drilled approximately 0.5m; any positional adjustments will be made now.

Drilling will commence and the operator will set the PL3000 to depth of the pile and the pile number. The PL3000 will record all pile depths, numbers and the amounts of concrete and pressures that were installed.

Hearing protection is to be worn by all operatives.

Once the auger has been confirmed to have attained its required depth on the operator's console, it will then be withdrawn slightly to allow the opening of the delivery valve on the base.

Concrete will then be pumped through the delivery lines and down the centre of the auger. Where applicable the rate of concrete delivery will be determined by the rig operator. Auger withdrawal will then commence and proceed until the bore has been fully concreted and the pile formed. The rate of auger withdrawal will be determined by NFS (being dependent on auger size, ground conditions etc.) to ensure an oversupply of concrete compared with theoretical pile volume.

Borespoil is removed from the auger by mechanical auger cleaner (where practicable) during extraction of the auger. Borespoil arisings and excess concrete is removed from the pile head by the attendant excavator.

The piling rig then moves to the next planned pile position which would generally be a minimum of 3 pile diameters away.

Steel reinforcement as specified in the pile design will be placed directly into the concreted pile bore by either the auxiliary winch line on the rig or by the attendant excavator or by hand (dependent on cage weight). The bottom 2m of any cage may be tapered for ease of installation.

The attendant excavator will be used to install the cages. Should the excavator require a lifting chain our operatives will supply one on site along with a copy of the test certificate. The excavator should be fitted with a lifting eye.

When using the attendant excavator to install cages then the bucket must always be removed first.

After removing the pile spoil and cleaning the pile head the bucket will be removed from the excavator and the drop chain attached to the pile cage approx. 1m from the top, the cage will then be lifted to the vertical position and the banksman will guide the excavator over the pile bore and signal to lower the cage into the bore. As the cage is lowered into the bore the banksman will guide and keep the cage central. When the cages comes to rest within the wet concrete the excavator will lower his arm to below the lifting point and take tension on the drop chain, at this point the banksman will stand clear of the cage to a safe point minimum of 3m away but still stay within view so as to be able to guide the excavator driver and ensure the cage is plum.

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The excavator will then pull the cage into the pile under the direction of the banksman until the excavator arm reaches ground level (PPL). Tension will then be released and the banksman will remove the drop chain from the cage. The excavator will then reattach his bucket to enable pushing the cage to ground level (PPL). With the bucket reattached to the excavator the banksman will guide the bucket to above the cage and then stand clear min 3m to allow the excavator to push or tap the cage to ground level.

The banksman will also ensure that no other persons are allowed within 3m of the work in progress.

At No point should the banksman try to stand on the cage helical the assist with pushing in the cage and at No point should the banksman hold onto the cage while being pulled or pushed by the excavator.

If for any reason the cage seems too reluctant to enter the pile bore and excessive tension is required then the cage should be removed from the bore and the pile rebored and concreted and the cages reinstalled.

After the cage has been installed should the cage need to be centralised then either rebar caps or a short plank of wood should be placed on top of the rebar before the cage is trodden on. At the end of the process the pile should be highlighted or covered over.

Piles will be constructed to the following tolerances:-
+/- 75mm on plan at piling platform level
1:75 verticality

At the end of piling works each day the storage mixer drum and concrete pump are washed out using the diesel jet wash. Also the concrete pump line is 'blown out' using the compressor excess concrete will be blown into an empty hole that will be drill out daily, This is to prevent concrete from being splashed as the blow out ball exits the bottom of the auger.. All excess concrete is removed using the attendant excavator and will be removed from site along with the pile spoil by the main contractor.

If any of the concrete lines become blocked the use of the blowout launcher and catcher are essential to use on both ends of the hose. The concrete lines will need splitting and separating from the rig and pump. The concrete hoses should be tethered to the excavator parked at the opposite end of the concrete hose restraining the hose to prevent the concrete hose from whipping. Once the compressed air has been discharged into the concrete lines **ALL** air must be vented via the valve on the gun enabling the air and pressure to be released. **At no point must anyone remove the gun from the line until it has been proven that the air has been vented by the gun.**

9. Concrete Pump and Agitator

Where on site we are to use a concrete pump and agitator drum then they are only to be used by a trained and competent operative. (Refer to NFS Cleaning Concrete Pumps Working Procedure.pdf)

10. Reinforcement Steel

Reinforcement steel for the works will be delivered direct to our yard or site from a CARES supplier, with all appropriate certificates being supplied under separate cover.

All reinforcement will be delivered to site in max one ton bundles of loose bar and will then be fabricated on site using sub contract steel fixers.

Where possible the steel should be lifted onto the trestles using the delivery hiab lorry.

The fixing trestles are to be set up on site on an area set aside, away from any construction activity/vehicle/plant movement.

The trestles are to situated on an area of firm, dry, level ground that is suitable for stability of the trestles when the steel is place upon them.

Trestles could be extended at the base by the insertion of "stability riggers" if required.

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Dependent on the size of the cage to be constructed, the correct number and size of re-bar i.e. 20mm/25mm etc are then rolled onto the outside of the trestles.

The helical is then spun over the bars to the full length of the cage and spaced at centres as per the design drawing.

2 No. bars are then left on the top whilst the others are lowered carefully into the bottom of the helical. Note: Up to 4 operatives spaced evenly along the length of the cage can be used for this task.

The bars are then lifted manually and tied using steel fixers tying wire at the correct centres as specified on the drawing.

The cages are then lifted off using the site attendant excavator or manually depending on weight and moved to the designated storage area.

The procedure stated above is then repeated for all pile cages.

Please refer to Neil Foundations Systems Piling Risk Assessment RA06 Steel Fixing.

Caps will be placed on ALL vertical reinforcement to prevent risk of impalement (IF installed protruding above piling mat level).

11. Integrity Testing

Integrity testing will be carried out, if required. The trimming of piles to cut-off level (no earlier than 5 days after installation) and preparation of pile heads is by others. Care should be taken when excavating and trimming piles to prevent damage.

12. Health & Safety

NFS employees will operate in a safe and diligent manner at all times in accordance with their Health & Safety Policy.

PPE will be worn at all times whilst on site:

- Hard Hats to BS EN 397
- Gloves to BS EN 388
- Hi Vis to BS EN 20471
- Boots to BS EN 345 or BS EN 20345
- Goggles (to BS EN 166 B) for cutting and grinding
- Ear Defenders to (BS EN 352 – 3). When working within 5m of plant min snr 25-30
- Safety glasses when operating pump. (to BS EN 166 F)

Additional PPE will be worn for site specific work as required by the Risk Assessment; Overalls, Safety Glasses (to BS EN 166 F)

Health & Safety is monitored daily by the foreman and any incidents, accidents or near misses are investigated promptly.

Site Inspections are carried out by the Safety Advisor on a regular basis; any findings are passed on to the relevant Manager for action.

All employees are encouraged to report any accidents, incidents or near misses to the Safety Advisor; the Company operates a ‘No Blame’ culture in respect of these reports.

Risk Assessment document (Piling NFS Risk Assessments.docx) and COSHH document (COSHH NFS.docx) are applicable to this project and are issued as part of the commencement documentation.

13. Environmental Controls

The skips, water bowser and licensed carriers will be provided by the Main Contractor, unless otherwise is stated in the contract.

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- Operation should only take place within specified working hours.
- General waste shall be deposited into designated skips.
- Special waste, such as oil contaminated materials, used oil spill kits, etc. shall be disposed of by a licensed carrier.
- Fuel/ oil spills should be prevented. Drip trays and emergency oil spill kits shall be used to catch and clean the spills/ leaks. Oil spill kits contain colour coded bags to contain any used spill equipment. These shall be disposed of by a licensed carrier.
- The vehicles shall not be run unnecessarily. Engines shall be extinguished when not in use.

14. Emergency Contacts

Role	Name	Phone Number
Managing Director	Neil Miller	01252 550222
Visiting Supervisor	Simon Tapsell	07771 961910
Safety Advisor	Lawrence Ford	02380 649651
Neil Foundations Systems	Office	01252 550222
Medical - A&E Department	Royal Free Hospital Pond Street, London, NW3 2QG Distance: approx. 1.7 miles	020 7794 0500
Medical - Defibrillator	Royal Free Hospital Pond Street, London, NW3 2QG Distance: approx. 1.7 miles	020 7794 0500
Electricity	www.energynetworks.org/info/faqs/who-is-my-network-operator London, South East & Eastern England: Southern England:	 0845 601 4516 0800 048 3516
Gas	National Gas Emergency	0800 111 999
Water	www.water.org.uk/consumers/find-your-supplier Southern Water: Thames Water:	 0800 820 999 0800 714 614
Telecoms	Openreach	0800 023 2023
Environmental	Environment Agency Incident Hotline	0800 807 060

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15. Method Statement Briefing Attendance Sheet

Print Name	Date Attended	Signature	Comments
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			

I HAVE BRIEFED THE ABOVE PERSONNEL ON THE FOLLOWING METHOD STATEMENT:

Title		Ref No	
Signed		Company	
Print Name		Date	

When completed, return this form to the Site Foreman

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