



Construction Method Statement

Document issue

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01	12/11/2024	R.Coath	J.Calcinotto	

Document history and status

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01	12/11/2024				

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Description of Task/Activity:	CONTINUOUS FLIGHT AUGER BORED PILING				
Client :	Gracelands	Project Ref:	C326		
Site Address/ Location:	Land off Dunsbury Way Havant, PO9 5BQ	Start Date/Time:			
		Contract duration:	4 weeks		
Personnel involved:	Name	Role/Trade			
		Rig Operator			
		Pump Operator/first aider			
		Banksman/Foreman			
Works Supervisor:	Ryan Coath	Role:	Contracts Manager / Visiting	Tel:	07816446210
Site Induction:	Prior to starting any works on-site, the supervisor (SSSTS minimum) will review and brief all operatives on the Method Statement / Safe System of Work. Each operative will then confirm they have understood the contents of the method statement and provide signatures.				
Key Plant and Tools Required:	1 x 40 Tonne hydraulic Piling rig 1 x Trailer Mounted Concrete Pump 1 x Concrete Agitator Foreman's van/Container 1 x Mewp An attendant 360° tracked excavator per rig (minimum 13 tonnes) is to be provided by the Principal Contractor. The piling foreman is due to check the machine operator's plant operator's CPCS card and also ensure that the operator is included in all of SPSL site safety inductions and tool box talks. SPS will produce all plant test certificates prior to works commencing to the site manager. All plant and equipment shall be inspected prior to first use and at intervals not exceeding 7 days thereafter.				
Enabling Works	Working platforms for tracked plant Installed and maintained by others				
Setting Out and As built	Setting out will be undertaken by others				
Static load tests	Not Required unless requested				

Key Materials Required:	Ready mix concrete: Concrete will be delivered to site in roughly 1.5 hour intervals in a mixer truck. The mixer truck will adhere to the site traffic plan and be reversed by a banksman at all times. Delivery times may vary dependant on concrete plant and site activities. On site fabricated cages: All reinforcement to be supplied by a CARES approved supplier. The Principal Contractor shall set aside a suitable area for the assembly of reinforcement cages, together with an adjacent area for storage of reinforcement bars, helical and completed cages. This area needs to physically be segregated from traffic by fencing or similar, to avoid danger to steel fixers or damage to cages. The Leading Steel fixer is to be given details of the Cages required, 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 either by hand in the case of lightweight cages or by crane/excavator for heavier cages. After fabrication, the cages are to be stored on timbers or clean hardcore to avoid contamination by soil. 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. Alternatively, a purpose made welded band can be used. Where heavy cages are required, it may be necessary to use welding to give the cage greater rigidity and strength. The following controls are to be in place: • A Hot Work Permit will be sought from the P/C. • Screens must be placed around the welding area to protect other workers from ultraviolet damage to eyesight ("arc eye"). • Welding equipment must be in good condition and be earthed. • A Fire extinguisher is to be available adjacent to the work. • Suitable PPE must be worn, including: welding goggles or facemask, welding gauntlets, flameproof clothing. • Hot work is to finish to 1 Hour before the end of shift and an inspection carried out.
Other Essential Equipment:	Agitator: The agitator will be placed in an agreed location on site and will not be positioned near any tree protection areas. The agitator is designed to hold, mix and discharge the concrete. It is powered by its own engine which also powers the hydraulic system to raise the cross over plate to discharge to the rig when concreting a pile and lowers when a load of concrete arrives to discharge in the agitator on site saving the need for a ramp. Pump: All concrete clips will have pins in to avoid them opening. Whip checks will be in place on all pipes metal to rubber. There will not be any whip checks on concrete hoses that are placed on the piling platform due to being trip hazards.

Specific Identified Residual Hazards: (or refer to the task specific risk assessment(s))	Please refer to site specific risk assessment.
Specific Staff Training Requirements:	(i.e.: Confined Spaces/Abrasive Wheels/Working at Height/Plant Operators etc) Piling Rig operator above 20 tonnes Trailer mounted concrete pump Banksman Ipaf
Quality control:	The Site Manager will provide any necessary information in regard to Quality Management. The Site Manager will brief the SPS Supervisor on what is required before every shift for deconfliction. A pile schedule will be issued to the foreman prior to starting on site which will show diameters, depths, concrete volumes and cage types for each individual pile. At the end of every day the rig operator will check what he has in his work book against what he has in the computer to ensure the correct piles have been installed prior to issuing his pile log to the site manager.
Sequence of Operations: (Specifying methods of working, tools, materials and equipment utilised)	Mobilisation and setup: All vehicles will enter site as per the designated route agreed at Pre-Start Meeting. All vehicle movements will be supervised by a Banksman. Unloading and storing of equipment and materials will take place at a position agreed at Pre-start. The Foreman will assess this position prior to unloading, taking into consideration other contractors, pedestrians, traffic routes etc. The Foreman will make sure that all loads are checked for security before unloading commences. A sequence of unloading will be agreed with the Banksman & the Delivery Driver. The Banksman will take control of the safe unloading of equipment & materials & directing the HIAB operator. In the event of a load having moved or become unstable in some way during transport, unloading will not continue until a safe means of unloading has been determined. Unstable loads should not be allowed to tip or fall to the ground unless there are no other safe options & only after advice has been sought from the Line Manager. Any provisions for unloading that are already on site will be used to safeguard work at height. The Banksman is responsible for the safe unloading of equipment & materials & directing the HIAB operator. Where possible equipment & materials will be pre-slung to facilitate offloading. Access to trailers will be from a secured or footed ladder. With larger rigs, unloading on inclines should be avoided. The Banksman will be in a position forward of the loading process so that all rig movements and the rig operator are clearly visible. NO ONE must stand at the side or behind the vehicle being unloaded. All instructions to the rig operator must come from a single Banksman. If offloading of the rig is required on a public road, Road matts/ ply boards will be provided to protect the road surface during this operation.

Sequence of Operations:

(Specifying methods of working, tools, materials and equipment utilised)

Adding augers whilst rigging – Mewp and excavator method

1. Have working platform certificate and permit to pile signed (or check they are).
2. Agree a location to undertake rigging up.
3. Erect mast to rig manufactures instructions.
4. Place an intermediate auger in the rig gates using a drop chain that's attached to the excavator. (make sure the auger is slung to make the auger as vertical as possible)
Using the mewp you can now unsling the auger and place the pins into auger/kelly bar.
5. Lift the rotary table to give enough room for the next intermediate auger.
6. Repeat item 4 and 5 until all intermediates are on the piling rig.
7. Place the lead into the gates to connect to the last intermediate auger.

Removing augers whilst de-rigging – Mewp and excavator method.

1. Place a bung in the lead and put the string of augers on the ground.
2. Using a punch, take the pins out of the lead/intermediate.
3. Using the excavator and drop chain sling the lead.
4. Pull up the string of augers leaving enough room for the excavator to pick up the lead and safely put on the floor.
5. Place the intermediate on the ground. Using the mewp take the pins out of the intermediate that is coupled together using a punch.
6. Sling the intermediate using the excavator and drop chain.
7. Pull up the intermediates that are attached to the rig leaving enough room for the excavator to safely take the weight and place on the ground.
8. Repeat items 5 to 7 until all intermediates have been taken off the rig.
9. De-rig the machine to manufacturer's instructions

Waste materials will be kept to a minimum & disposed of in accordance with the site's Waste Management Plan.

Fuels will be stored in fuel bowsers or Jerry Cans at a designated point agreed by the Main Contractor.

Noise levels from all plant will be reduced whenever reasonably practicable. All plant will be fitted with efficient silencers. All engines will be switched off when not in use.

Reinforcement cages will be produced on site, they will be constructed on fabrication trestles by CSCS trained personnel, working within a fabrication area on the piling mat. Materials will be transported by the attendant excavator. Cages will be transported around site horizontally on two leg chains. Subcontractor risk assessments will be required unless they are working in accordance with our procedures.

The crew shall maintain good housekeeping at all times to reduce slip/trip hazards.

Sequence of Operations:

(Specifying methods of working, tools, materials and equipment utilised)

Pile Construction:

A banksman must be in attendance when operating or moving the rig.

Throughout the piling process the exclusion zone around the rig will be policed by the Banksman to prevent access by other contractors.

The piling rig will track into position under the supervision of the banksman, & the mast and auger plumbed vertical prior to drilling.

Any concrete deliveries will only occur between the hours of 8:00 and 17:00 as per the site hours.

The concrete discharge at the auger tip is closed by a sacrificial auger bung placed by the banksman before setting up on a pile position.

When the foreman is satisfied all is in order, he will commence auguring to the required depth. During boring, the gates are kept in the closed position until the auger advances into the natural ground or a minimum of 3m depth. Gates will be left closed unless they need to be opened to achieve depth.

One banksman is to be on duty in front of the rig at all time that it is working to ensure that all is in order and other personnel are kept clear.

At the target depth, the auger is rotated to allow spoil to rise and the auger is lifted a maximum of 150mm to allow concrete to exit.

The concrete pump is operated to supply concrete through the delivery hoses and down the auger central stem to form the pile as the auger is withdrawn. Once over-pressure is noted by the rig operator, the auger is lifted, slowly at first

The concrete pressure, flow rate and over-break percentage is monitored throughout the pile construction operation by the rig instrumentation.

During withdrawal of the flight the operator operates the mechanical auger cleaner. The piling team are to ensure that the working area is kept clear of unauthorised personnel. On certain *exceptional* occasions, the piling gang will be required to manually clear the auger flight of all spoil to prevent this going above head height. This will be under the direct control of the piling foreman and / or banksman who ensure that the auger is not rotated when it is being lifted

The attendant excavator will clear the spoil and concrete slurry from the pile position to a stockpile for disposal.

The pile head will be located by the piling crew and a small amount of concrete dug out to define the pile position, a reinforcement cage is then lifted into the bore and secured at piling platform level, plastic protective caps will be placed on the tops of the reinforcing to aid visibility & prevent injury.

Having concreted the piles, boring will recommence in the same method for additional loads of ready mixed concrete. No piles will be left un-concreted overnight.

Blowing out lines and washing down at the end of the shift :

Before cleaning out the pump and agi the pump operator will have a lined bunded area underneath the catch of the pump to catch all waste materials and not allow this to enter the ground.

Before blowing the concrete out of the lines the blowout box will be positioned at the front of the rig to ensure concrete is contained within the box and avoid any splashing. This box will be placed over a lined area to avoid concrete being blown out onto the pile mat.

Prior to blowing out the lines with compressed air and a ball you must check your blowout cannon before placing it on a concrete hose. Open up both ball valves to ensure there is no build up of grout/concrete and check that the inside is clean.

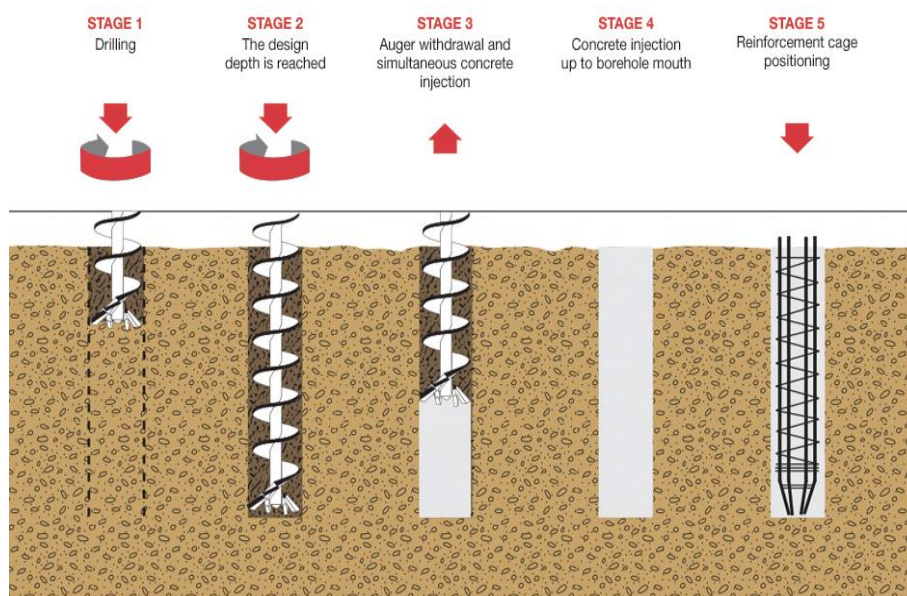
When blowing out the concrete under no circumstances must you take the blowout cannon off the hose until you have seen the ball has been blown out or you can hear/see air coming out of the lead auger. If the concrete and ball is blocked within the lines or the rig blowing out must stop and the compressor turned off. Release the air out of the concrete hose through the blowout cannons ball valves and start stripping the hoses where the blockage is. Once all the concrete has left the hoses you then can start connecting the hoses back together to resume cleaning the lines with balls and water.

Once you have finished cleaning and you are happy that the concrete hose is empty you must turn of the compressor, release the air and open the ball valves on the blowout cannon to ensure that there is no air within the lines.

At the end of every shift you MUST clean the blowout cannon both inside and out, open up the ball valves and jetwash through to ensure its clear ready to be used the next working day.

Sequence of Operations:

(Specifying methods of working, tools, materials and equipment utilised)



STAGE 2A: Auger may be back screwed leaving loose soil in the bore if area is found to be harder than expected. If this is the case the pile installation will stop at this stage and then restart from stage 1 at a later date.

Works Procedure for sampling and testing concrete:	The Foreman will be informed of the concrete mix in the technical pack handed over on site start-up. Concrete from the beginning and end of the pile should not be used; only the middle half is to be sampled. Take scoops at regular intervals into a clean bucket. Sampling of test cubes will be by rp testing on our behalf.						
Spills:	Spillage management – Eliminate sources of ignition. Contain spillage in booms or sand or absorbents. All contaminated items & oil must be returned to your office/depot & be disposed of at an authorised disposal facility.						
Service Strikes:	Electric - Switch machine off & evacuate all personnel on the ground. The rig operator must remain in the rig. Do not attempt to disengage the cable from the auger. Do not touch exposed cables. Gas - Switch all machinery off & evacuate all personnel to safe distance. Extinguish all naked flames. No smoking. Gas emergency number is 0800 111 999						
Temporary Supports and Props needed to facilitate the works:	None						
Method of Access and Egress to the work area:	(i.e.: Ladders/MEWPS/Scaffold/Trestles/Step Ladder etc) None						
Fall Protection Measures: (Where work at height cannot be eliminated - consider both Personnel & Materials)	(i.e.: Guard Rails/Toe Boards/Brick Guards/Safety Harnesses/Exclusion Zones etc) Harness and lanyard will be worn at all times when operative is in the basket of the MEWP						
Hazardous Substances: (Attach COSHH Assessments and MSDS)	(ie: Lubricants/Solvents/Flammable Materials/Refrigerants/Welding Gases etc)						
Applicable:	 Very Toxic	 Harmful/Irritant	 Corrosive	 Dangerous for the environment	 Oxidising	 Highly flammable	 Explosive
	NO	YES	NO	YES	NO	YES	NO
Required Personnel Protective Equip.:	 Safety Boots	 Hard Hat	 Safety Gloves	 Hearing Protection	 Respiratory Protection	 Eye Protection	Other: 1. Hi-Viz 2. Overalls 3.
	YES	YES	YES	YES	NO	YES	

Emergency Procedures:	Main contractor will induct all site operatives into the site-specific emergency arrangements. SPSL crews are equipped with a number of 2kg dry powder extinguishers and first aid provisions to complement the main contractor's arrangements. Emergency First Aid & Fire awareness training has been completed by the crew. Spillage kits will be provided and our crews instructed in their use. All accidents & Near misses must be reported directly to the SPSL's Safety Dept and the Main contractors site manager.	
 First Aid Facilities:	Name of On-Site First Aider:	Tbc
	First Aid Box Location:	Site Office
	Location of Nearest Hospital:	Displayed on H&S poster in site office
Other Information & Comments:		

All work will be undertaken by qualified competent persons with experience of the type of work described above, and in all cases in full accordance with safety procedures specified in the company's Health and Safety Policy.

Prepared by: R.Coath

Position: Contracts Manager

Date: 12/11/2024