

METHOD STATEMENT

CONTINUOUS FLIGHT AUGER BORED PILES (CFA)

Site: Project Taverna, Man City

Client: John Turner Construction

Author: Andrew Airey

Date: 15th May 2026

Project No: 15994

Revision: 0



Piled Foundations & Underpinning

I confirm that I have read, understood, agreed and will comply with, the contents of this Method Statement

Revision	Name	Position	Signature	Date

NB – This is to be read in conjunction with the associated Risk Assessment

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1.0 INTRODUCTION

1.1 GENERAL

This method statement has been produced to document the risks, control procedures and methodology associated with works to be undertaken on this site by Cohesion Piling Company Limited and their subcontractors. Reviews & amendments by Cohesion Piling Contract Manager or Senior Management

Site working hours will be 07.30am to 6.00pm Monday to Friday.

The works on site will be supervised by a working foreman, (SSSTS) and the site crew will comprise a piling rig driver, a slinger / banks man and a pump man. (Visiting steel fixer). The contract will be managed by **Wayne Adams** – Tel: 07712 358349. It is planned that there will be a working foreman / supervisor with each piling rig.

TBC is the supervisor. Both have SSSTS Qualification (forwarded separately).

1.2 PREPARATION

Working Platform Design – undertaken prior to commencement

Pile Design – submitted prior to commencement

Concrete Mix – submitted prior to commencement

Setting out individually numbered pile positions.

1.3 CONTROL MEASURES BY COHESION PILING

- Method Statement
- Risk Assessments
- Trained Workforce – checked at Induction
- Equipment Certificates – checked on delivery
- Pile Design
- Concrete design mix – approved prior to commencement
- Permit to pile.

1.4 CONTROL MEASURES BY THE PRINCIPAL CONTRACTOR

- Working Platform Design Certificate – provided prior to commencement
- Permit to Pile / Dig – provided prior to commencement
- Setting out individually numbered pile positions
- Background lighting as necessary for the safe execution of the works
- Welfare facilities including mess cabin and drying room
- Hoarding and/or screens to protect the public and third-party property
- Wheel and road cleaning facilities as required

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2.0 SCOPE OF THE WORKS

The work comprises of the following:

- Install 141No x 400mm diameter CFA Piles
- Provision of plant, equipment and labour to undertake the piling works.
- Provide installations records.
- Supervision of the works
- Carry out operations in line with this Method Statement and associated Risk Assessments

3.0 EQUIPMENT TO BE USED

CFA Piling Rig. The rig is unguarded in line with FPS guidance dated December 2013

Augers

Jetwash bowser

Diesel bowser, (Bunded)

Static concrete pump and hoses - PM55 Concrete pump or similar

Static concrete agitator drum – CF7 type

MEWPS for working at height – Z45 cherry picker type

250cfm compressor and airlines

Lighting towers for task lighting (if required).

13te 360° track mounted excavator – by main contractor

All plant and equipment will be used and maintained in accordance with the manufacturer's instructions and standard procedures. Thorough examination certs will be provided, where appropriate and service records.

4.0 SEQUENCE & METHOD

4.1 SEQUENCE

Access to Site

Access to the site is from: TBC

Delivery restrictions: During normal working hours

Parking: Company van on site,

Piling sequence: TBA

Delivery of Plant and Equipment

The piling rig will arrive on a low-loader and the ancillary equipment will arrive on a Hi-Ab wagon (or similar). All will be delivered and unloaded adjacent the works.

Trained Banksman will be in attendance at all times. The piling rig delivery is being executed out side of normal working hours after insistence of The Highways and Police departments.

General

All site personnel will attend a site-specific safety induction from the principal contractor prior to commencing work on site, hold a minimum basic site skills CSCS card and, if required, the appropriate CPCS / NPORS card for the activity they will undertake.

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Daily briefings will take place at an agreed time as to not hinder piling operations, which the piling formen will attend.

Toolbox talks will be held weekly or before any high risk activity where all operatives shall attend.

The minimum PPE requirements are as follows:

- Safety helmet

- High Visibility coat / vest

- High Visibility trousers

- Safety boots with steel toe caps and mid-sole

- Gloves

- Light eye protection at all times, unless blowing out concrete lines.

- Ear protection supplied/made available at the lower exposure limit 80dbA and mandatory to wear at 85dbA

Task Specific PPE requirements are as follows:

Safety Goggles (Grade B impact protection) when washing out, blowing out concrete equipment and when changing auger teeth or pins.

All operatives to use ear protection when working in areas where noise levels are above acceptable limits. These areas are within 10m of the concrete pump and within 5m of the back of the piling rig

Prior to piling works commencing all known services will be located and identified by the principal contractor and a Permit to Dig shall be issued.

A hot works permit to be issued by the principal contractor, if required.

John Turner will hold meetings with either foreman as and when necessary to discuss or relay information.

4.2 METHOD

General

The foreman will ensure that all necessary safety controls and environmental protection measures outlined in the Method Statement and Risk Assessments are in place and remain in place throughout the works. The principal record of inspection is the Pile Log Sheet.

The piles will be bored from a platform prepared and maintained by the principal contractor. All pile locations shall be cleared of obstructions, services, etc. and suitably backfilled by the principal contractor in advance of the piling works.

The piles will be set out by the principal contractor by means of steel pins driven into the ground with numbered caps.

The piles will be bored to the following tolerances:

- Plan position at platform level

- +/- 75mm

- Verticality

- 1 in 75

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A series of trial bores may be carried out before commencement of piling works to ascertain the ground conditions and boring characteristics, and confirm they are in accordance with the site investigation information provided. Any discrepancy will be reported immediately by the foreman to the principal contractor.

Before the commencement of the first pile each day, the hoses and pipeline shall be lubricated with a primer pump mix. This operation may be repeated during the day if the pump and hoses have been washed out.

Prior to commencement of a pile, the foreman will ensure that sufficient materials and resources are available to complete the pile. The principal record of inspection is the Pile Log Sheet.

The foreman will ensure that movement of the rig does not damage previously constructed piles by either travelling over or surcharging them. The pile position shall be sufficiently distant from recently cast piles to prevent damage occurring during boring (three x diameter or up to 1800mm). Any movement of concrete/grout in recently constructed piles that occurs during the boring of adjacent piles will be reported immediately by the foreman to the principal contractor. Revised instructions will be issued if necessary.

Rigging and De-Rigging

Rigging and subsequent de-rigging will be undertaken with assistance from an operative working in a mobile elevated work platform (MEWP).

The MEWP will be unloaded and erected in accordance with the manufacturer's instructions.

The piling rig mast will be unfolded, assembled and raised to vertical in accordance with the manufacturer's instructions and with assistance from the attendant excavator and MEWP. The MEWP will only be used in conjunction with the piling rig. The banksman will control the space as he would whilst piling.

The following process will then be adopted for rigging the augers:

- 1) The first auger will be lifted into position using the rig auxiliary winch and located within the auger guides at the base of the mast (safety / impact **goggles** must be worn).
- 2) Once the auger section is in place, the MEWP operator will manoeuvre the top of the auger into alignment with the drill head and connect them together with metal pins (safety / impact **goggles** must be worn).
- 3) The drill head and auger are raised, another auger is winched into place and connected to the first auger with metal pins (safety / impact **goggles** must be worn).
- 4) The process is repeated until the required auger string has been assembled.
- 5) The operative will then lower & dismount from the MEWP, and move it away.

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Piling

The rig will be tracked into approximate position and a bung inserted in the bottom of the auger (unless an auger flap is being used). The auger is centred vertically over the pile position. The rig mast is checked and adjusted for verticality. The hydraulic mast foot is then lowered to the ground.

The banksman will check the position of the auger tip, final adjustment of level and verticality of the rig mast will be undertaken and the auger tip will be lowered to the ground by the rig operator.

Piling then proceeds as follows (see also diagram below):

- 1) The augers are rotated and advanced into the ground in a manner suitable to the ground conditions, a Kelly bar may be engaged to extend the stroke of the augers if required.
- 2) Once the drill augers have reached the design depth, the auger will be lifted by up to 100mm to release the bung prior to pre-charging the auger stem with concrete.
- 3) Concrete is pumped, under pressure and at a sufficient rate to ensure a continuous and monolithic shaft, to the bottom of the auger through its hollow stem. When extracting the auger, bore spoil on the auger is cleared using the auger cleaner on the piling rig assisted, if necessary, by the attendant 360o excavator. **See additional notes in section on auger cleaning.**
- 4) The auger is withdrawn at a controlled rate of extraction, such that the volume of concrete placed is slightly greater than the theoretical volume of the pile shaft. The extraction rate is not necessarily constant and may be adjusted to allow for local variations in soil conditions. The extraction rate is checked against “real time” parameters with the aid of a N. D. Technology CFA pile monitor system fitted to the rig (PL20 or similar). The CFA pile monitor comprises transducers fitted on the piling rig. These are connected to a portable computer console with keypad and graphics display in the operator’s cab. The system facilitates computer-aided construction of the CFA piles to a template of predefined construction parameters.
- 5) On completion of the pile the system checks the monitored construction parameters against the template and alerts the operator to any discrepancies via a status system. Should the pile contain non-conformities identified to be “driver error” they will be corrected by re boring whilst the concrete remains plastic. Non-conformities (accepting the known limitations of the system) will be brought to the site management’s attention for review.
- 6) Should a blockage occur the auger is extracted by rotating anti-clockwise to leave as much soil supporting the hole as possible. See Blowing Out procedure below for clearing blockages. In all instances, once the blockage is cleared the hole is re-drilled to a founding level slightly deeper than originally achieved.
- 7) Bore spoil arising’s and concrete over break from boring and construction is removed from the pile head by a full time attendant 360o excavator.
- 8) The concrete pile is cast to ground/working platform level. Pile shaft concrete cannot be left below the existing piling platform. A minimum distance of 500mm is recommended from piling platform level down to pile cut off level to ensure sound concrete at the pile head.
- 9) The remaining arising’s and concrete overbreak from the bore is removed by the full time attendant 360^o excavator and the top of the concrete checked for contamination.

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Auger Maintenance

Periodically the lead auger will be changed due to excessive wear. This will be swapped for a similar lead auger. It may be possible that the auger itself may be in a good condition, however, the teeth may need replacing periodically. The company uses a combination of auger teeth in various combinations and situations including –

Flat Bz100 C31



B46 Bullitt teeth



Replacement is periodic & at short notice, if damage is caused by obstructions in the ground.

This section of the method statement details the works required in removing and replacing worn / damaged teeth of the auger cutting head.

Use the supplied / proprietary equipment, required for the individual auger tooth & requirement.

Examples include –

Auger tool kit – including slide hammer



Company issue



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METHOD for changing teeth.

- I. Avoid using steel hammers on steel parts, and especially tungsten carbide element on bullitt teeth to avoid dangerous shards during the process.
- II. Use appropriate PPE, including impact goggles.
- III. Utilise the correct and specific tool for the auger tooth being replaced. Options avoid steel on tooth contact by attaching to the worn tooth, and extracting via leverage of the use of a slide hammer.
- IV. Auger teeth should not be welded in at the back, as this hinders worn tooth extraction.
- V. On extraction of the worn tooth, grease the tooth holder for ease of extraction.
- VI. Use a copper hammer to fit the replacement tooth as required.

Safety Notes for this process:-

- Ensure suitable PPE is used, including impact resistant goggles.
- Report any auger refurbishment to the office, that has welding / hardfacing preventing the replacement of teeth on site.
- Should teeth prove difficult to replace on the auger cutting head, remove the cutting head from the auger string and place on ground for access. Teeth can removed by other means i.e. burning / returned to yard as required.

Auger Cleaning

In the event that bore spoil is not cleaned entirely from the auger during piling operations, then the following steps will be followed to ensure the auger is clear;-

1. Banksman to monitor that the auger cleaner is working properly.
2. Banksman to visually check for material stuck to the auger above the auger cleaner as the augers are withdrawn, and use the 360 excavator to remove it as necessary.
3. If the 360 excavator fails to remove the material and it continues up the augers, then the banksman will signal the rig operator to stop extracting and drill back into the pile until the material can be reached and removed by the 360 excavator.
4. If the 360 excavator bucket cannot remove the lodged material, it will be removed manually by an operative working from the MEWP.

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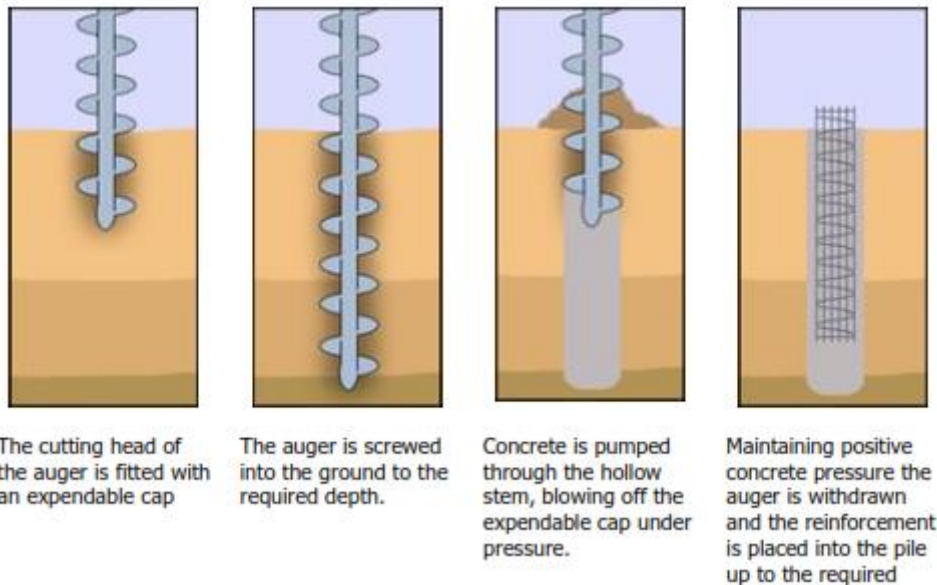
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Pile Reinforcement

All reinforcement material shall be from a CARES approved supplier. A designated area will be assigned by the main contractor for steel fixing. The steel fixing trestles will be positioned on firm ground (preferably an area of the piling platform).

Steel will be lifted onto the fixing trestles manually, or by using the attendant machine if in bundles weighing more than 25kg.

Steel fixers will fabricate one cage at a time using soft annealed tie wire, sufficiently tied to allow handling and placement.

Fabricated cages will be lifted off the trestles and stock piled within an agreed storage area (see lifting requirements below).

The Foreman will check that the reinforcement complies with the design before placing.

Reinforcement will be lifted and plunged into the wet concrete to the required level (two men if the cage weighs more than 25kg, use the attendant excavator and/or auxiliary line on the rig for cages in excess of 50kg).

Adequate numbers and rows of spacers will be used on the reinforcement cage to provide the required cover, this will consist of at least 3 no. at the top and 3 no. at the bottom of the cage.

The Foreman and banksman will ensure that there is no debris or mud on the reinforcement and that no contamination is pushed into the concrete by the reinforcement.

Care and attention is required to ensure that the excavator bucket does not catch the reinforcement cages within previously installed piles.

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De-bonding foam sleeves can be attached to the pile reinforcement cages (main bar only) projecting above the helical to aid the trimming process, if requested. Due to the cage installation method & level changes during piling mat use, there can be no guarantee of the finished level of debonding. Placement tolerances of +200mm & -0mm are achievable, with levelling in by others.

Where centre bars are installed in the pile:

- All Centre bars will be lifted using either the attending 360mc of the auxiliary line of the piling rig.
- When the pile is ready to receive the centre bar, the auxiliary line or 360mc will be deployed to ground level, by the rig operator, and under the instruction of the banksman.
- When the sling has been attached to the hook of auxiliary line or 360mc, the banksman will give the signal to lift the bar, slowly.
- Once the bar is over the pile, and the banksman is satisfied so, then the banksman will give the rig or 360mc operator the signal to lower the bar.
- The banksman will watch the bar all the way down in to the pile, in case it snags. At this point, the banksman may recommend the re-lifting of the bar from the wet concrete.
- At no point during the lift will the banksman (or any other member of the team) lift or pull the bar. In the event that the bar cannot be located over the pile satisfactorily, then another sling may be tied at the bottom of the bar and attached to the 360 machine to guide the bar.
- Once the bar is in position, the auxiliary line or chain from the 360mc and sling will be removed.
- During the lift, the banksman, must monitor and patrol the area, and not allow non piling personnel in to the piling area.

All lifting (even partial lifts) must be by done so, by mechanical methods..

Records of all work carried out will be kept on Pile Log Sheets.

Blowing Out

At the end of the shift the concrete hoses require clearing of concrete ready for work the next day. A washout skip is to be provided by the main contractor for the concrete vehicles at a suitable location. Any protection below / underneath the drum and pump needs to be in place prior to the equipment's arrival, as these pieces of equipment cannot be moved, once in place.

Blowing out is undertaken in 2 passes, as below:

First pass:

- a) The pump operator will reverse pump (see below in the event of pump break down) the concrete to relieve the pressure in the lines, then disconnect the joint next to the pump, he will then introduce a sponge ball into one end of the concrete line.

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- b) Attach the blowout adapter/Gun to the same end of the concrete hose
- c) Connect the blow out adapter to the 250cfm compressor and gradually open the compressor valve, once fully open the high pressure will push the concrete out through the lines & Augers, discharging from auger tip into an enclosed catchment vessel (The blow out Box)

Second pass:

- d) Once the lines are clear of concrete, the blow out adapter/gun is removed, and water is introduced into the line, a sponge ball is placed in the line behind the water, the blow out gun re-attached to the concrete hose, compressed air is reintroduced, thus pushing the water and ball through the concrete line and augers until clear.
- e) Prior to blowing out the concrete lines, the piling supervisor must ensure that there is adequate protection in place, i.e. The blow-out box is in place to safely catch the sponge ball.
- f) *In the event that there is an issue with the blow out chamber (i.e. damaged, too small etc), then the top of the pile of the following day will be augered to approximately 4 – 5m. The auger will be withdrawn, however, the tip will remain at least 1.0m below platform level. This will allow the lines to be cleaned, the ball / grout / concrete caught and contained. The following morning, the grout / concrete washout will be augered through and the pile formed as per the methodology detailed above. If there are no further piles to clean out in to, as designated position will be identified by the main contractor, to act as a “cleaning out pile”.*

The 360 excavator bucket will be placed on the top of blow out chamber to further secure.

In the event of a blockage in the concrete delivery system (concrete or the blow out ball):

- a) The piling supervisor will control the clearing of the blockage directly. Contact the office, if blockage greater than small & in more than one composite part of the concrete delivery system. Define, isolate, agree a plan for the specific blockage, walk away / revise plan to suit the blockage scenario.
- b) Only piling personal will be involved with the clearing of the blockage, all other personal must stay clear of the operation. Refer to risk assessment on blowing out concrete hoses & blockages.
- c) The pump will be stopped immediately. The concrete in the lines will be reverse pumped to relieve the line pressure. **Always assume that all elements of the delivery system (rig, pump, drum, concrete & steel pipework) are blocked / may have trapped pressure, until proven otherwise.** Therefore ensure any potential pressure release elements are restrained with any potential pressure / debris release, being directed safely away from any personnel, site extremities / public, structures etc.
- d) In the event of pump breakdown, potential trapped pressure may exist in the concrete delivery system. It may be necessary to unclip the lines from the back of the piling rig, pump, or pipe to pipe. The concrete pipe will be unclipped from the rear of the piling rig using the steel “T” piece connection and attached to the side of the blow out chamber. The augers will be placed in the blow out chamber to anchor the chamber and dissipate

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any objects from the concrete lines. Once the blockage has been located, the concrete line will be broken at the nearest joint, and this line cleaned, (Any damage concrete hose will be replaced at this point)

- e) Concrete / Blow out material must not be pumped through a line which is not restrained at the discharged end. Suitable restraint should be at two positions using the attendant excavator track and suitable connection to the excavator arm.
- f) Once the line has been cleared and cleaned the pump operator will re-prime this section of pipe (if required) and pumping operation will recommence,
- g) Blockage within the auger stem, Augers to be split and cleaned,
- h) Compressed air is used to move material through the concrete delivery system to clear the lines. Should a blockage occur, the delivery system should be carefully broken down one piece at a time of its composite construction i.e. flexible hose, steel lines, rotary and augers. At no point will compressed air be used to clear a concrete blockage.
- i) Correct PPE must be worn for the task.
- j) Difficult blockages (e.g. set concrete), should be located with extendable drainage rods.
- k) Difficult blockages (e.g. set concrete) to be cleared using specialist water jetting on site, or by removing from site for clearing by a specialist.

5.0 INTEGRITY TESTING

John Turner Construction are responsible for calling off the integrity testing as & when to suit their programme. A minimum of 3 days notice is required. All testing must be carried out at cut off level, prior to any reinforcement & concrete being placed.

6.0 EMERGENCY PROCEDURES

All site operatives are to be briefed and made aware of main access / egress routes and emergency assembly points at the initial induction. Designated routes are to be kept clear at all times.

The principal contractor shall deploy adequate First Aid trained personnel on site during the works and First Aiders will be identified during the induction process.

A suitably stocked first aid kit and eye wash station shall be kept on site by the principal contractor.

In the event of an emergency the principal contractor or the appointed person shall, if required, contact the emergency services.

All accidents are to be recorded in the site accident book and subsequently reported to Cohesion Piling Company Ltd's office.

The nearest Accident & Emergency department is located at:

Manchester Royal Infirmary

Oxford Rd

Manchester

M13 9WL