4.1 – METHOD STATEMENT: PILING

4.1.1 - Process	The Installation of 450 mm diameter CFA piles to maximum depth of 7.5 m using a Klemm 709 piling rig. Installed pile diameter and installation depth to be confirmed through design.
4.1.2 - Location	Within the new development for
4.1.3 - Duration	
4.1.4 - Resources	Gang of 3 no. persons
4.1.5 – Plant required	Klemm 709 piling rig; agitator; static concrete pump; compressor; diesel bowser
4.1.6 - Site set up	Attend safety induction conducted by PC, note that basic PPE comprising hi-vis vests; hard hats and safety boots are a basic mandatory requirement and must be worn at all times. Additional task specific PPE will also be required, please refer to risk assessment for these items. Make specific note of the site rules; site layout; emergency procedures; first aid location; first aider; sign in/out procedure; materials and plant storage areas; parking arrangements; delivery times; working hours; access routes; traffic management; etc. Communicate risk assessment / method statements to site operatives and ensure that the operatives sign acceptance of the working procedures. Check that all operatives have relevant personal protective equipment and that they are aware of the requirement to wear it at all times Ensure all operatives are trained and competent to undertake the activities described in the Method Statement particularly with regard to plant use Obtain service drawings for location of utility services and visually inspect and indicate them if official drawings are not available or it you feel they do not accurately show the services you must use a CAT scanner to identify any electrical, gas, water, telephone / CATV utility services. Obtain (where applicable) overhead service drawings and visually identify areas of potential services and indicate on work drawing. Ensure that the permit-to-dig has been completed and signed by PC Project Manager and copy returned to file. CWS is prepared to building footprint + 1 m all round. Safety will be the responsibility of the Keymen for the day to

	day running of the works. The Contract Manager and/or the Safety Manager will make additional monitoring Take delivery of materials and plant, checking against those itemised in the quality plan. Any damaged or missing materials / plant must be recorded on the delivery docket and on your Daily Work Record sheet. Also inform the Procurement Department as soon as possible. Ensure safety fencing is erected as required and warning signs are posted around the project indicating e.g. No Authorised Personnel beyond this point, No Smoking, PPE to be worn etc. Set up site, take delivery of skips etc. and where necessary polythene / board out access/egress/pedestrian routes. Ensure a fresh water supply is available on site and ascertain whether of not it is suitable for use as drinking water or not. The welfare facilities must be assessed to ensure that they are suitable and any arrangements other than the use of an Oasis unit must be communicated to the relevant site personnel. Any fuels or other chemical substances to be used or stored on site must be stored in a bunded storage unit away from any drainage systems.
4.1.7 - Preparation phase method of operation	Ensure all deliveries observe restrictions on delivery times and use the designated access/egress routes in accordance with the site specific traffic management plan. Always bank reversing traffic. Use the designated storage areas for the storage of plant and materials and agree the location of the agitator; concrete pump; storage container; diesel bowser. PC to erect barriers as necessary around the work area to segregate the area from other trades/personnel and erect additional signage warning of the operations being undertaken. Where possible designated walkways to be used for access and egress Take delivery of the agitator if used and set up in the agreed location. Take delivery of the concrete pump and set up immediately adjacent to agitator. Take delivery of diesel bowser and set up in bunded fuel store area. Take delivery of storage container and locate in designated area. Take delivery of piling rig; augers and ancillary items and set about commissioning the rig as follows: hoses are connected from the concrete pump to the rear of the piling rig using the integrated clips provided with the addition of whip checks; the rigs mast is raised vertical by the hydraulics and the rig tracked to the first pile position banked all the while by the banksman. Set out for the piles and ensure pile layout drawing; schedule and SI borehole logs are available for reference.

	Perform standard rig checks on fuel; lubricants; hydraulics; etc. and complete rig check form. **Ensure that the permit-to-dig has been completed and signed by PC Project Manager and copy returned to file.**
4.1.8 - Installation of Piles	Set up over pile with rig being banked into position by banksman; Drill to maximum single flight depth using 250 mm diameter CFA augers (i.e. 7.5m); Knock out connecting pins; raise drill head and side shift clear of the auger and raise vertically by 2 m; Using integral winch rope, sling next 2 m auger section and raise into position, connect using pins; side shift drill head back and lower on to add-on auger section and connect using pins; Drilldown additional 2 m and repeat process for adding on sections; Ensure spoil is cleared using attendant excavator as the drilling proceeds; Check that first pile bore coincides with SI borehole info provided; notify contracts manger of any deviation; Once target depth is reached, signal to pump operator to start pumping whereupon the pump pressure forces out auger bung from lead auger; The augers are then retracted in 2 m increments with concrete halted temporarily as the added-on sections are removed in reverse order to which they were installed and stacked to one side. When final 7.5 m of auger depth is reached, concrete pumping can be completed continuously as the flight is withdrawn to pile mat level. The rig is banked off the pile position to the next position. The top of the pile is checked and any foreign matter removed from the concrete; The reinforcement is then lowered into the concrete and rebar protection caps placed atop; A cardboard sleeve is then placed in position and topped up to level (approx. 350mm above mat level). The process is repeated for subsequent piles.
4.1.10 - Site / Area Return	Once piling is completed, ensure excavator and operator in attendance clear and clean the concrete surface in preparation for following trades. All plant is cleaned and made ready for collection; Trucks collecting plant are banked onto site, loaded securely and the site cleared of all plant. Site supervisor to ensure that PC project manager has signed all daily work sheets and pile logs. Ensure site works and cleanliness is to the satisfaction of the PC project manger.

	Inform Contract Manager on final completion.
4.1.11 - Quality Inspection	**Once complete all piles are integrity tested**