

APPENDIX 4: PILING CONTRACTOR METHOD STATEMENT – SCREWFAST FOUNDATIONS (VODAFONE PLOT)

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Method Statement

1 Introduction

1.1 Overview of Works

Installation of 128 No. Helical Piles and top hats.

1.2 Availability of Method Statement

This Method Statement will be kept in the project office and a copy will be available at all times onsite via the SFF Site Pack when work is being undertaken.

2 Scope of Works

2.1 Scope of Works

- Deliveries and Unloading,
- Installation of ScrewFast piles

The above works will take place at locations specified by the PC. Exact pile positions will be set out by the main contractor.

2.2 Limits of Working Area

The works area is situated within a non-working/not live substation. The site is secured from the public by perimeter fencing and security gates. Exclusion Zones to be implemented at works area to prevent impact/collisions with people and plant.

2.3 Location and Programme

The work location is referred to as **Ark Project Union Substation**

Site address is North Hyde Gardens, Hayes, UB3 4QQ

Works comprise of 80 No. Helical Piles installed to varying depths. Refer to ScrewFast helical pile design and drawings for details.

- Works are set to commence on- **Nov 2020 - TBA**
- The intended duration of works is 18 shifts (day works) excluding weekends. This will depend on ground conditions and any unforeseen site delays.
- Shift times are as follows – 08:00hours till 17:00hours (including lunch break etc) longer working hours are possible upon agreement if necessary.

3 Hazards

3.1 Generic Hazards Associated with Task

- Plant movements
- Plant access and egress
- Manual handling
- Sharp edges
- Noise levels
- Lifting operations
- Hot Works
- Night Working

3.2 Site Specific Hazards

- Buried services
- Weather conditions
- Slips, trips and falls.
- Site traffic / plant movements
- Lifting Operations
- Access and egress into the working area
- Restricted space

For COVID-19 Specific requirements please refer to section 11.

4 Interface Arrangements

4.1 Public Interface

SFF don't expect any Public interface as the site is secured from the public by perimeter fencing and security gates. Should any Public interface occur the SFF site supervisor will notify the client as soon as practically possible.

5 Environment

5.1 Waste

The ScrewFast piling systems themselves do not produce waste, therefore we only expect minimal general waste to be generated on site as a result of ScrewFast's Activities. The following procedure will be adhered to with regard to onsite waste:

- General Waste (litter) will be bagged and removed from site at the end of the shift.
- Spoil arising from any digging or grading of land will be spread locally or removed from site – removal from site will be the responsibility of the Principal Contractor.

5.2 Plant and Fuel

All plant used will be modern and well maintained resulting in minimum emissions and less likelihood of leaks.

Refuelling

- Refuelling of plant will take place using funnels to avoid spillages.
- Refuel well away from work areas where possible to avoid risk of spilling where hot works may take place
- Ensure the refuelling point is suitable and well ventilated
- Ensure the machine is shut off
- Allow time for machinery to cool down if possible

- Ensure the correct fuel is being used
- Make sure all ignition sources are removed while refuelling, and ensure that no smoking will occur nearby while refuelling
- Check the safety data sheet and labelling of fuel / oil containers and ensure required instructions are followed or are able to be followed.
- Confirm that all fittings, hoses terminals and tanks are in good condition and free of leaks
- Avoid spilling or splashing fuel (use of funnels and fuel containers with flexi pourers)
- If decanting:
 - use a suitable pump
 - Only pour into a container on the ground or on a solid surface
 - Wear eye protection
 - Wear suitable gloves
- No refuelling of the machine will take place within 10m of any known water course
- Plant will have a spill kit provided.
- No barrels will be used onsite. Only Bunded Fuel Bowsers will be used for carrying fuel.
- Plant nappies to be used on site at **ALL TIMES** while refuelling is taking place.
- Drip trays must be used at all times on generators etc
- SFF to provide a double skinned fuel bowser

5.3 Contaminated Land

ScrewFast Foundations have not been notified of any potential contaminants within the working area. If during the course of the works any suspected Asbestos containing materials are discovered the works will stop and the client representative will be notified. The client will be responsible for safe removal of any ACM's prior to works recommencing.

5.4 Noise

Noise will be kept to a minimum. Sound levels will be monitored onsite and noted on the daily risk assessment / daily site report. If noise levels go above 85dB then the required PPE (Ear Defenders) must be worn as highlighted in the Risk assessment. Ear defenders must be worn as mandatory when operating hand held power tools.

6 Plant and Equipment

6.1 Operated Plant and Attachment

- 21 tonne rubber tracked excavator
- 250kN Torque head
- 6m Rock auger
- 10m Telehandler

ALL Plant Operators will have the appropriate current plant proficiency certificates (CPCS only) and will have undergone induction training by ScrewFast with regards to on-site procedures and hand signals prior to commencement of work on site. Operative will also be required to complete a full JSM induction before attending site followed by and complete project induction.

- Excavator type if known: **21 tonne rubber tracked machine (see Appendix D)**

Please Note- The SFF site supervisor will complete a plant check sheet when the machine first gets delivered to site and then on a daily basis until the job is complete. A copy of plant inspection sheets must be provided to PC weekly for filing

6.2 Small Plant

- Generators
- Battery Powered Tools
- Approved CAT & Genny Scanner (eCAT4+ min)
- 110V Tools
- Cut off saw
- 9 & 4 ½ Inch Grinders
- Impact Wrench

6.3 Tools and Equipment

- Steel Erectors Podger/Ratchet
- Lump Hammer
- Sledgehammer
- Pinch Bars
- Insulated Shovels
- Spirit Levels
- Measuring Equipment
- Laser Levels
- Certificated Lifting Chains/Slings/Camlock

6.4 Base Components

- Steel Helical piles
- Steel top hats
- Bolts

6.5 Safety Equipment

- PPE will be worn as listed in 7.5.
- Fire Safety Equipment for hot works – Fire extinguishers, screens, fire blankets.

7 Personnel

7.1 Key Personnel Involved

Name	Organisation	Job Role	Contact No
Thomas Worton	JSM Group	Project Manager	01992 788 019
Iaian Turkentine	ScrewFast Foundations	Operations Director	07515 922287
Marion Lawrence	ScrewFast Foundations	Safety, Health & Environment Manager	07515 050849

7.2 Site Personnel (Crew) – subject to change

Name	Organisation	Job Role	Contact No
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Will Harris	ScrewFast Foundations	Site Supervisor/ Lift Supervisor	07469 753105
Matt Woods	ScrewFast Foundations	Senior Pile Technician / Slinger-Signaller	07880 385973
Robert Day	ScrewFast Foundations	Pile Technician / Telehandler Operative	07721 128815
Joss Wainwright	Screwfast Foundations	Senior Driller / Pile Technician	07876 896613

All site personnel will attend a site induction. All site personnel will be CSCS or CPCS card holders.

The crew shall comprise the minimum of Plant Operator and 1 Installers. The Installer will act as a Banksman. All Installers will have been trained under the ScrewFast Foundation scheme.

All members of the crew will be familiar with Standard Hand Signals.

- Banksman on site will be nominated by the **ScrewFast site supervisor**
- CPCS Slinger Banksman will assist all lifts and plant movements.

7.3 Communication

A list of personnel involved with the project along with contact numbers is included in 7.1 and 7.2. The ScrewFast Lead Project Manager will ensure appropriate communication and co-operation with all parties involved in the works.

ScrewFast Employees will be able to communicate with the Construction Manager and Projects Office from site at all times with the use of Mobile Phones (Mobiles must only be used in safe zones)

7.4 Welfare

Welfare facilities to be provided by Principal Contractor

Site staff will also make use of compound facilities. Welfare van and compound facilities will be kept clean and tidy at all times. Daily Inspection will be carried out by SFF Site Supervisor and if found to be in an unsuitable condition this will be reported to site management team to rectify.

7.5 PPE

As a minimum all Site Personnel will wear the following PPE

- Category 2 Flame retardant overalls to be worn at all times while working within all live compounds
- High Visibility Clothing/Vests/Jerkins
- Hard hat
- Safety boots (Rigger boots are not permitted)
- Safety gloves appropriate to task and including anti -vibration gloves where applicable
- Impact Glasses/Goggles
- Ear defenders where required

- FP3 masks as required

PPE to be worn correctly at all times, Long sleeves must be kept long and not rolled up

Other PPE will be worn as dictated by Risk Assessment.

7.6 Site Inductions/RAMS briefing

It is the responsibility of the Principal Contractor to carry out all the necessary Risk Assessments, Public Services Checks and Setting Out before the arrival of ScrewFast Foundations on site. All site specific information including the Risk Assessment is briefed to our staff as an induction prior to the commencement of piling works.

All members of the Screwfast site team will be required to attend a JSM SHEQ induction prior to commencing works

Under Section 2 (1) of the Health & Safety at Work Act 1974 a ScrewFast Foundations representative will carry out their own Risk Assessment upon arrival to site or at a pre work site visit and the results should be recorded in writing. Risk Assessments and Method Statements (RAMS) will be briefed to all site operatives by the SFF supervisor prior to works commencing. All RAMS briefing shall be recorded on **Appendix A**. Daily Risk Assessments will be completed onsite prior to each shift commencing.

Any proposed changes to the RAMS during the works should be notified to the ScrewFast Construction Manager or Health and Safety Manager for sign off before being re-issued and then re-briefed to all Site Operatives

7.7 Safety of Personnel & Agreed SSOW (Safe System Of Work)

- All personnel will attend site induction held by the Principal Contractor before any work is to commence onsite.
- These RAMS will be briefed to all personnel prior to works starting by the SFF site supervisor. A copy of the briefing register will be issued to the pC
- All personnel will obey work permits and no work will start without the required permit.
- Standard PPE detailed in 7.5.
- Personnel to be competent for task. (CSCS/CPCS Card holders)
- All tasks undertaken are covered by the Risk Assessment, which details preventative measures.
- All pile and equipment weights will be supplied by SFF to the client prior to ScrewFast's arrival on site
- COSHH data and assessments to be produced for any substances relevant to the work (see Appendix F)
- SFF site supervisor will issue ALL 6/12monthly certs for Plant and equipment (including lifting equipment) to the PC/Client at the site induction prior to any work commencing on site.
- All piles and equipment will be mechanically lifted wherever possible.
- The excavator will not be used to transport stillage's on/around site. Stillages to be transported using appropriate Telehandler/Forklift. Loads to be secured with Ratchet straps before being lifted.
- If deemed necessary, our site supervisor may request the need of a type 1 substance to be scattered within the working area to provide adequate grip to eliminate Slip/Trips and Falls
- Machine to have a rear-view camera fitted and the required mirrors so a good level of visibility is maintained at all times.
- SFF site supervisor to have a valid SMSTS or SSSTS certificate.

Please Note- All machine movement will require the need of a **Banksman**. Any slinging will be carried out by a CPCS Slinger/Signaller.

8 Methodology

8.1 Prior to Work

The Main Contractor will be in possession of all required paperwork.

ScrewFast to check all materials and plant are available for task and all are to specification.

Certified ScrewFast installer will ensure pile sections for each location correspond with installation sheet.

Any relevant thorough examination certs to be produced before work is to commence.

8.2 Briefing Arrangements

- These RAMS will be briefed to all individuals involved with the works prior to any work commencing on site.
- All personnel requiring to access site must be briefed prior to doing so.
- All briefed personnel will acknowledge brief by signing Method Statement Briefing Record Sheet included in **Appendix A**.
- Daily Safety Briefs will be carried out through the duration of the job relating to site specific issues that may occur.
- All work permits will be briefed to site personnel prior to work commencing.
- **SFF site supervisor must attend the daily DAB briefing at the start of each day**

8.3 Access, Site Set-up and deliveries

- All vehicles will access the worksite via a dedicated access point. The SFF site supervisor will be responsible to ensure that our vehicles are following any site traffic plans at all time.
- Piling materials/equipment will be unloaded from the delivery lorries and stored in the lay down/store area as agreed by the PC at the Pre-start meeting. The SFF site supervisor will oversee this operation and make sure the works are being carried out according to the SSOW briefed at the start of the works.
- SFF Telehandler will be used to transport piles from the laydown area to the worksite as required.
- All marking out of the pile positions will need to be completed prior to SFF arrive. It was agreed at the pre-start meeting that the ground level would be reduced to 300mm below top of pile. Any concrete obstructions below ground that conflict with pile positions would need to be removed by the PC prior to SFF arriving onsite.
- A hot works permit will be issued by the PC prior to any hot works commencing on site.
- Any hot works will require a Fire watchman to be present while the activity is being carried out and for at least 1hr after the activity is finished.

8.4 Buried Services

The Principal Contractor is responsible to inform and identify using spray paint or warning tape of any underground services within the vicinity of the works. This must be done before any work on site commences. Buried services local to the works will be plotted on the ground. These locations will then be confirmed using an eCAT4+ scanner and Genny where appropriate in accordance with the following section with data made available for download upon request. Service records to be made available for ScrewFast Site Operatives.

Prior to the installation of piles or any excavations the appropriate areas are to be scanned using a eCAT4+ Scanner and Genny (scanned in all modes) to identify any uncharted buried cables. Two types of scan are to be undertaken as follows:- firstly with the cable locating tool set to detect electromagnetic radiation from cables carrying live electrical currents and secondly set to detect radio signals from other detectable sources.

Please Note - A Permit to Dig will be issued by Client to SFF. When all parties are satisfied that the area is safe for piling / digging to begin only then can the work commence.

8.5 Set Out Pile Location

Pile locations will be set out by Principal Contractor reed bar with mushroom caps, to identify pile centres. All pile setting out must be completed prior to SFF arrival onsite.

Please Note- All setting out is the responsibility of Principal contractor unless agreements have been made prior to ScrewFast arriving **onsite**.

8.6 Earthworks

All ground works are the responsibility of others, including any excavations, vegetation clearance, tree removal, obstruction removal, exposing/diverting known services and any site levelling. This **must** be completed before SFF are to commence works on site.

***SFF require the ground level to be 300mm below finished pile height on all pile locations. ***

PC responsibility also includes any damage to the ground or making good of the ground after the installation has taken place. If SFF feel that the ground disturbance is going to be high, then this will be raised at the Prestart meeting prior to the installation taking place.

8.7 Permit to Dig and Commence Installation

As part of internal procedures, ScrewFast operatives will ask the PC to sign SFF Permit to Commence Installation. By signing this permit the PC is confirming that all the relevant checks/precautions have been complied too and they are happy for ScrewFast to commence piling (**Appendix B**). CAT Scanner must be at works area at all times and used at regular intervals.

ScrewFast Foundations permits must be signed by all parties involved prior to any works commencing onsite.

8.8 Installation of ScrewFast piles

Installation Safe Practice for working within an Exclusion Zone

- Site supervisor to set up and exclusion zone around the dipper arm/boom of the excavator by using chapter 8 fencing. Where Site conditions do not allow for the use of fencing then Line Spray will be used on the ground to identify the Exclusion Zone. The Exclusion zone should be a Min of 1metre circumference around Torque head.
- Entry to the Exclusion Zone should be restricted to trained SFF personnel. This should be controlled by the ScrewFast site supervisor.
- Entry into the Exclusion zone is restricted to the following actions/conditions:
 - Insertion and removal of Bolts to Disconnect and Connect Pile sections, Top Hats and Drive Adaptors, and manual positioning of Pile Sections during installation. In these circumstances the Machine will be in Operation however, the Torque Head will be attached to an installed section and will not be unable to swing unless lifted by the machine. The instruction to lift and fully disconnect the sections must only be given by the Banksman when all operatives have left the exclusion zone.

- All other entry to the exclusion Zone will be under the supervision of the banksman and will only be permitted when the Deadman switch on the machine has been engaged.
- All Operatives and Visitors to ScrewFast sites/works area must be briefed on the Exclusion Zone rules by the ScrewFast Site supervisor.

**** Lifting methods to be assessed by the site supervisor/lift supervisor to determine most suitable lifting method for the task.****

Lifting of Pile sections using a loading stillage (if required).

- The Lifting Frame will be placed in the correct position either by the telehandler or the machine (if using the machine, the appropriate lifting methods will be identified by the slinger signaller). The frame should be placed on firm level ground to ensure stability.
- An exclusion zone of min 1m circumference (Site supervisor to determine exact size of exclusion zone according to the working space available at each pile location) to be implemented around lifting frame.
- The pile sections will be slung and lifted vertically (using the excavator) for positioning into the lifting frame using the appropriate lifting method identified by the slinger signaller. The nominated banksman overseen by the site supervisor will ensure that the area around the lifting frame is clear. The instruction to proceed with the lift will then be given to the machine operator.
- The pile section will be lifted into position inside the lifting frame. Once the pile is safely positioned inside the frame the Senior pile technician will give the instruction for the machine operator to engage the dead man switch so the site operatives can enter the exclusion zone to tighten the bolts situated on the frame (the machine will still be supporting the weight of the pile section at this time until it is fully secured in the lifting frame. When all bolts on the lifting frame have been tightened and the pile is secured the Senior pile technician will then release the lifting accessories from the now stable pile section.
- The slinger-signaller/senior pile tech will then give the machine operator the signal to start lifting the drive adaptor over the pile section which is in the lifting stillage and line up the bolts so the adaptor can be secured to the pile section.
- Once the drive adaptor is secured the bolts securing the pile in the frame can be loosened so the pile section can be lifted out of the loading stillage under the control of the slinger-signaller/ banksman
- This method should be followed for all pile sections prior to installation and attachment of the 'Top Hat' adaptor.

For installation follow screwpiling method outlined below

Screwpiling Process

- All instructions to the machine operator will be given by nominated certified installer.
- Torque head will be attached to excavator boom.
- Torque head will be tested to ensure hydraulics are connected in correct way.
- 'Top Hat' Adapter will be fixed to the torque head.
- A visual Inspection of pile to be carried out before manual handling takes place. Any jagged edges caused by residual galvanising to be cleaned off using 4 ½" grinder to be made safe to handle.
- The pile sections will be slung and lifted vertically using the appropriate lifting method identified by the slinger signaller. The pile technicians (min 2), will hold the pile section steady in an upright position, for connection to the pile adaptor.
- The point or lead section of the pile will then be bolted to the adaptor.
- Machine will lift the point section into the correct location as guided by installer and pushed about 300mm into the ground.
- When in correct location, the installer will instruct machine operator to start the installation process.
- Line and angle adjustments to the pile will be carried out continuously throughout the installation to achieve the design.
- The pile section will be driven into the ground until just the connection point protrudes (approx 300mm).
- Pile section will be unbolted from the pile adaptor.

- Certified ScrewFast Installer will select next pile section to be added.
- Selected section will be bolted to the pile adaptor and lifted by the machine to the part-installed pile.
- Pile sections will be bolted together
- Installation process will continue.
- Line and angle adjustments will be made to achieve design.
- This process will be repeated until the pile is installed as per the installation sheet.
- The pile will now be driven down to the correct level as per design using the timber peg as a datum to work from.
- When the pile is at 1 metre from finished level the machine operator will reduce the revs of the machine to approx half, to allow accurate torque readings to be taken.
- Torque readings will be taken at 1m, 0.5m and 0.0m.
- All readings will be recorded on the installation sheet and returned to pile designer for checking.
- Upon completion of pile installation Top hats will be placed on and fastened with the appropriate bolts.

Notes on installation problems:

If design torque is not reached further pile sections can be added under the instruction of the Certified Installer and confirmation required by design manager and checker.

Ground conditions encountered may mean that the rock auger is required to bore a pilot hole.

Rock Auger Process

- The part installed pile would be removed from its position in the ground/location.
- The auger is attached to the torque head and then guided into the ground following the same guidance/method for Screwpiling
- The Rock Auger Adapter will be fixed to the foot of the Torque Head.
- The Drive Section of the Rock Auger is then lifted by the machine with a strap and held in position.
- The Drive section of the Rock Auger will then be bolted to the Top Hat adapter.
- Machine will lift the Drive Section of the Rock Auger into the correct location as guided by installer and pushed into the ground Approx 300mm
- When in correct location, the installer will instruct machine operator to start the Rock Auger process.
- Line and angle adjustments to the Auger position will be carried out continuously throughout the installation to achieve the correct piling position.
- The Rock Auger will be screwed into the ground until the connection point protrudes (approx 300mm) above existing ground level.
- Drive section will be unbolted from the Top Hat adapter.
- The Mid Section of the rock auger will then be bolted together with suitable torque applied to the nuts.
- The Rock Augering process will continue.
- Line and angle adjustments to the Auger position will be carried out continuously throughout the installation to achieve the correct piling position.
- This process will be repeated until the connection point for the mid section protrudes (approx 300mm) above existing ground level.
- The Mid Section will be unbolted from the Top Hat adaptor.
- The final section of the Rock Auger will then be bolted together with suitable torque applied to the nuts.
- The Rock Augering process will continue.
- Line and angle adjustments to the Auger position will be carried out continuously throughout the installation to achieve the correct piling position.
- When all Three Sections of the Rock Auger have been driven down to the desired levels the process to uninstall the pile begins by unwinding each section until connection points are exposed and bolts can be removed. Once all Rock Auger sections have been removed the Screw piling process begins again.

Hot Works (if required for remedial works/modification of pile sections)

It is very occasionally required to carry out Hot Cutting/Grinding to modify pile sections. In the event that Cutting of pile sections is required the following safe system of work must be followed at all times

- PC's Hot works permit must be issued prior to any hot works taking place
- Only trained and competent personnel to operate the equipment.
- Move the workpiece to safe location for carrying out hot works
- Remove nearby combustible materials (such as flammable liquids, wood paper, packaging or plastics)
- Protect nearby combustible materials that cannot be moved. Use suitable guards or covers such as metal sheeting, or fire retardant blankets.
- Prevent flame, heat sparks or hot spatter from landing on hoses
- Keep fire extinguishers nearby (**must have 2x extinguishers available onsite at all times**)
- Visually inspect equipment before use for signs of wear or damage.
- Turn the gas supply off at the cylinder when the job is finished or before the cylinders are moved or transported.
- Keep hoses away from sharp edges and abrasive surfaces or where vehicles can run over them.
- Correct wearing of flame retardant PPE, and visor.
- Appoint a fire watchman for 30mins after hot work finishes.

Hot Works Process.

- A Stihl Saw will be used to cut the section to the agreed finished pile height
- The cut section will need to have the galv cleaned ready for top caps / discs to be welded to top of pile.
- If a pile cannot progress to within 500mm or less of correct height it is to be wound out and the B1m section cut down by the correct amount?
- Use Stihl saw to cut piles to correct height. The pile will then need a new set of drive holes put into the section that has been cut.
- Holes for driving section down will be cut into the tube with oxy propane gas torch by a competent person
- The pile sections will be slung and lifted vertically using a 2m round sling which will be connected to the torque head eyelet using a shackle. The strap will be connected to the pile using its pre drilled connection holes with another shackle.
- The pile technicians (2) will hold the pile steady in a safe upright position. After standing upright, one of the 2 technicians will remove the shackle from the pile whilst the other technician remains stabilising the pile.
- After the shackle is removed from the pile the technician will then restabilise the pile with the first technician while the top hat is moved into position to then be attached to the pile.

8.9 Fitting of Top hats

- Once the piles have been installed to the correct level the top hat can be lifted onto the installed pile. If required a bolt can then be inserted into the existing drive hole or holes and secured to the pile using a nut which is tighten down using either a impact wrench or adjustable spanner.

8.10 Housekeeping

- At the end of each shift site will be tidied.
- All excess materials will be loaded to vehicles.
- All waste will be bagged and loaded to vehicles to be recycled or disposed of in waste skip in the compound (**supplied by the Principal Contractor**).
- All excavations/unfinished bases will be fenced off

- ScrewFast Supervisor will ensure that site is tidy and safe prior to leaving site.
- On completion of the project ScrewFast Supervisor will ensure that all equipment and waste is removed from site.

8.11 Installation Records

Installation sheets and logs will be completed daily as piling progresses.

8.12 Change to planned Methodology or Tasks

- If subsequent to acceptance approval of this Method Statement, any change to the planned methodology or task needs to be implemented then this must be discussed and agreed with the Client and SFF Head of Construction.
- Where changes are required at short notice, i.e. during the excavation of the works, the proposed change must be approved by the SFF Site Supervisor, SFF Head of Construction and the PC Site Manager. Once the change is approved the relevant briefing must be given to the team highlighting new risks and the necessary control measures. This will be documented and the client notified at the earliest opportunity.

8.13 Process for dealing with design change

ScrewFast installers are trained to follow strict guidelines (outlined below) should they encounter difficulties or anything that necessitates a change during installation. ScrewFast project management and design team offer a 24hour service and the individuals linked to the particular project and their contact details are available at the bottom of the installation sheets.

1. Call the ScrewFast project manager or design department. Installers must not make any changes to pile depth or configuration without project manager or designer team approval.
2. Relaying all information pertinent to the issue.
3. Design department to consider all options and where appropriate instruct a change or ask the installers to wait for further instructions.
4. Depending on the project specifics an external check by third party/consultant may be required. The ScrewFast PM or designers will seek the appropriate approval prior to instructing the installers what to do.
5. Depending on the severity of the change project management may need to seek commercial approval prior to installers progressing.
6. Installers are to only act/continue works until given clear instruction of what to do from either the project manager or design department.
7. Any change and instruction is to be captured on the installation sheets on the appropriate page provided.
8. This change will be signed off once the works are complete by the person who gave the instruction and or the design department.

It must be noted that between steps 2 and 3 the installers may be asked to try a few different techniques to install the pile (rock auguring, change of pile configuration for example). However, no change will be commissioned until cleared and approved by the ScrewFast design department and if required an external checker.

9 Environmental Controls

- All Vehicles are to be checked for defects prior to commencing work.
- Any Protected Species toolbox talk will be given to the SFF team by the PC before work commences onsite.
- Temporary fencing to delineate the site extents prior to excavation works commencing.
- Avoid stock piling of material for long periods as this becomes a desirable habitat for reptiles.
- A spill kit will be available at all times.
- All plant used on site will be supplied with drip trays. Drip trays will be used under “static” plant at all times.
- Only metallic petrol/diesel containers will be used on site and will be stored safely in the works vehicle when not in use.
- Refuelling (if required) will not be carried out near storm drains or watercourses.
- All COSHH items shall be stored and disposed of in the correct manner. (Refer to the relevant COSHH sheet/s)

- Digging by hand should avoid injury to any animals hibernating in the verge and allow them to move away safely.
- If any protected species are found on site the environmental team should be contacted immediately.
- Root disturbance should be kept to a minimum.
- Any vehicles or machinery not in use are to be switched off

10 Emergency Plans

10.1 First Aid

A first aider will be onsite at all times and a **first aid kit will be in ScrewFast vehicle.**

First Aider will be identified by a helmet sticker (white cross on green background) and will be pointed out to site personnel at briefing stage.

- ALL members of the SFF site team are first aiders

10.2 Emergency Contact numbers

Emergency Services = **999 or 112 from a mobile phone.**

Please Note- Use **112** from a mobile phone. This will put you through to local operators and they can obtain your location

British Telecom	0800 309409
Water	0845 2780845
Environment Agency	0800 807060
National Grid (Gas)	0800 111 999
SSEN	0800 072 7282

10.3 Nearest Hospital (A&E)

Ealing Hospital (2.7miles)
Uxbridge Road
Southall
Middlesex
UB1 3HW

Tel: 0208 967 5000

Operatives will also be informed of emergency plans at site induction by the PC.

10.4 Serious Incidents

Emergency services will be called to site using 999 or 112 from mobile phones, should any serious incidents occur. Iaian Turkentine, ScrewFast is also to be contacted on

Tel: 07515 922287

10.5 Accident / Incident / Near Miss Reporting

All accidents will be recorded in ScrewFast/PC's Accident Book. All incidents/accidents and near misses will be reported to the PC/Client (within 30mins) and will need to be reported in accordance to ScrewFast procedures. **Please note ALL the above must be reported to (details below)**

Name- Thomas Worton

Position- Project Manager

Company- JSM Group **Contact No-** 01992 788 019

Site specific First Aid and Emergency Procedures will be briefed to all site personnel at induction provided by Principle Contractor / Client.

11 COVID-19 Specific Requirements

Please find below a list of controls to be implemented by ScrewFast. These will be performed in conjunction with any site-specific and government requirements as detailed/briefed in the site induction by JSM Group.

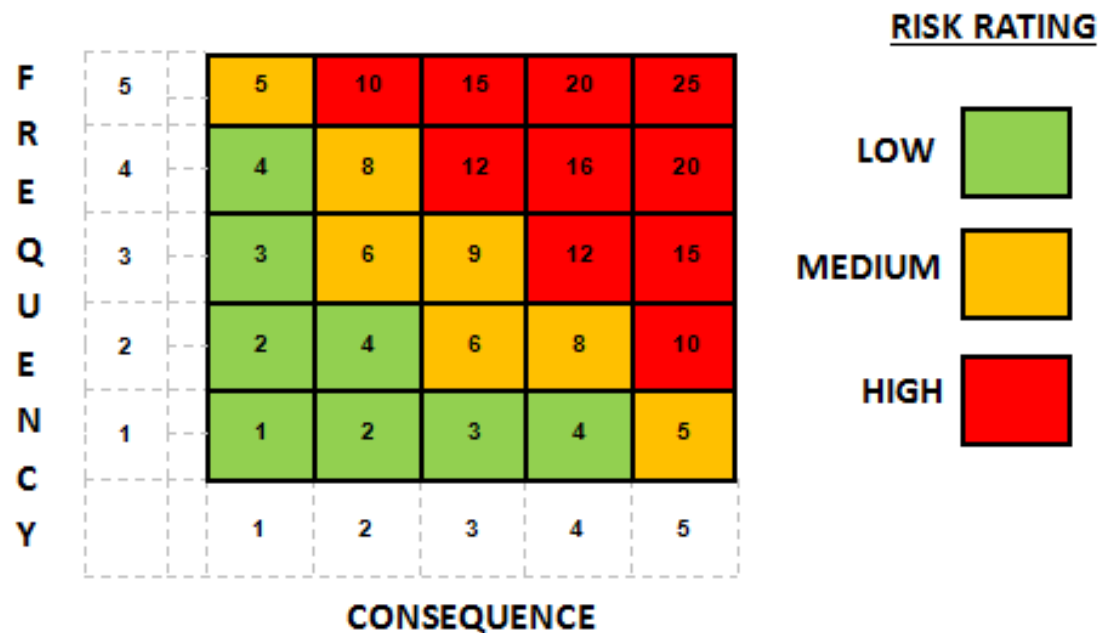
- We continue to regularly reminding our employees about the need to maintain good hygiene, and updating them on the latest Government guidance on self-isolation
- Daily monitoring of the latest Government guidance, and ensuring this is effectively communicated to our employees and our supply chain colleagues working on our sites.
- Stopped the practice of vehicle sharing – all workers to travel alone in vehicles to ensure social distancing 2m rule is adhered to.
- Our site operatives as we will not be asked to stay away in hotels as a result of COVID-19. Please note we may have to reduce our working hours onsite to accommodate travel time. We will attempt to select the team nearest to the project location to maximise time onsite.
- 2m distancing rule to be applied onsite. The nature of ScrewFast's activities make it possible to enforce a 2m distance rule when working onsite. The site supervisor will oversee all works to ensure that this safe distance is maintained during top hat fitting and beam landing.
- 1 tool – 1 operative. Tasks will be planned and allocated to ensure only 1 operative uses each individual tool per day. At the end of each day all tools and equipment will be subject to thorough antibacterial cleaning/wipe down.
- All operatives will be provided with a supply of antibacterial gel and cleaning wipes to maintain hygiene.
- Operative will be advised to bring their own drinking/eating utensils to site to avoid using shared items (cups/forks/spoons)

- Regular safety briefings and toolbox talks to be carried out to remind people of the controls to take to prevent the spread of COVID-19.
- Appropriate PPE to be worn at all times.
- ScrewFast to bring own pens. Alternatively, briefings can be recorded verbally or by video and sent to ScrewFast PM before work starts.
- ScrewFast supervisor to liaise with haulage drivers prior to arrival for best way to unstrap loads, avoiding potential contact with each other.

Refer to appendix G – COVID-19 Risk Assessment for full COVID-19 controls.

HEALTH, SAFETY & ENVIRONMENTAL RISK ASSESSMENTS

SFF Ref:	7039	Site:	Ark Project Union
Client:	JSM Group	Rev No:	000
Produced By:	M Lawrence	Date:	27/10/2020
Checked By:	J Wright	Date:	27/10/2020
Doc Name:	SFF 70379 – Ark Union Project – RAMS		



Health & Safety Risks

This Risk Assessment should be read In conjunction with the referenced Method Statement		(C) Health and Safety Consequence		(F) Frequency			(RR) Risk Rating = Consequence x Frequency			
		1 Insignificant (no effect)		1 Very rare (1 in 10-20 years)			1-5 Insignificant			
		2 Marginal (minor injuries)		2 Rarely (1 in 2-10 years)			6-8 Acceptable WORK SHALL PROCEED			
		3 Serious (major injuries)		3 Likely (1 in 1-2 years)			9-15 Unacceptable			
		4 Critical (fatalities)		4 Frequent (< 1/Year)			16 – 25 Intolerable WORK SHALL NOT START			
5 Catastrophic		5 Very Frequent (1/Month)								
ACTIVITY/ EVENT FEATURE/ SITUATION	HAZARD/ ISSUE/ INTERACTION (CAUSE)	UNDESIRE D EVENT	CONSEQUENCES	BEFORE CONTROL			CONTROL	AFTER CONTROL		
				C	F	RR		C	F	RR
Working within close proximity to others	Exposure to COVID-19	Contracting COVID-19	Fatality, illness	5	3	15	Follow government guidelines on prevention. Refer to Appendix G Agreed COVID-19 requirements. Remain 2m+ from any individual Do not share tools.	5	1	5

							Travel separately. Avoid any close interface with clients by doing paperwork prior or via video logging. Required PPE to be worn at all times. Continually use anti bac/wipes spray when touching surfaces. Wash hands. Avoid hand contact with face and mouth Dispose of tissues/litter appropriately			
The public, third parties and trespassers	General Public	Contact with Construction work / plant	Major injury	4	4	16	Implement fencing to segregate from public access. Immobilise/ use Vandal guards/ remove plant when not in use/ overnight. Do not leave excavations uncovered. Leave all work areas in a safe condition at all times.	4	1	4
Lifting Operations	Unsafe load	Falling load Overturning machine	Fatality, Major Injury, damage to infrastructure	5	4	20	Pile and equipment weights and SWL of the machine to be supplied prior to the works taking place. Lift plans to be implemented and checked by an appointed person where necessary Trained operatives to complete any lifting tasks eg slingers/signallers and lift supervisors etc Certified in-date lifting equipment to be used at all times Stable Ground conditions Exclusion zones to be set up where the lifting operation is taking place Segregation of the working area to allow access to competent and trained operatives only	5	1	5
Setting up/Changing of Torque Head	Hydraulic spill, unsafe load	Oil spill, falling load	Fatality, Major Injury, contaminated land	5	4	20	Trained operatives and slingers to perform works. Certified lifting gear.	5	1	5

							Switch machine off when changing Torque Head. Spill Kits and Plant Nappies on standby. To be completed in a suitable area agreed by the PC rep - Not within 10m of a known water course			
Weather Conditions	Fog/Mist/Heavy rainfall	Inadequate vision	Fatality/Major injury	4	4	16	Hi – vis clothing worn by all work force PC rep to advise if weather changes may affect the task	4	1	4
	Sun	Dehydration	Major Injury	2	5	10	Drink plenty of water Adequate breaks during the working day Application of sunscreen	2	1	2
Working within open Excavations while piling	Unprotected excavations	Trench collapse	Fatalities	4	4	16	Excavation to be adequately supported in compliance with construction design management Regs 2015 (CDM) Any excavations on site are to be clearly identified by the PC with good signage and barriers Excavation and earth work to be inspected regularly and recorded. Inspect prior to each shift and after inclement weather. Safe access and egress into the excavation must be provide by the PC/Client Temporary fencing to be erected around the edge of the excavation to warn others, must be provided by the PC/Client	4	1	4
	Biological Hazard	Personal injury	Fatality/Major injury	4	3	12	Staff are briefed on good hygiene practices. All staff to be trained on Leptospirosis/other diseases. Cover any open cuts with plasters Wear suitable gloves at all times within the working area	4	1	4

							SFF to make sure good hygiene is being maintained by all operatives			
	Moving Machinery	Personal injury	Fatality/Major injury	4	4	16	Only to be operated by trained and competent staff Banksman to supervise all machine movements at all times. Remove keys when not in use Be aware of others entering the work area at all times Use segregation and walkways wherever possible	4	1	4
	Crush injuries	Personal injury	Major injury	3	4	12	Workforce briefed about placing fingers near pile connections. Suitable gloves to be worn at all times Good communication between machine driver and installers at all times	3	1	3
Unloading of Vehicles	Falls from Height	Personal Injury	Major injury	4	4	16	All unloading/loading activities to be carried out within tM Trained operatives only to carry out unloading tasks. All unloading tasks to be overseen by Site Supervisor. ALL Delivery contractors/SFF staff to receive site induction/safety briefing prior to commencement of unloading vehicles. Appropriate PPE to be worn at all times. If accessing the back of a lorry then appropriate harness/lanyard must be used to prevent falls from height. Use of loading area advised by the PC rep at site induction Task Specific Risk Assessment to be carried out by Operator & Site Supervisor prior to use	4	1	3

Services (Surface and Buried)	Buried services	Personal injury	Fatality/Major injury	4	4	16	Clients permit to dig system will be implemented at all times. Known services protected / highlighted. CAT scan of area prior / during works	4	1	4
	Protection of exposed services	Striking Explosion Damage Personal injury	Fatality/Major injury	4	4	16	All exposed services to be suitably identified, colour coded Any services within 500mm of pile centres need to be exposed prior to piling commencing PC rep to advise on any known services within the working area and a full brief given to the SFF site supervisor prior to pile commencing	4	1	4
Use of power tools (general)	Vibration from prolonged use of tools	Over exposure	HAVS	3	4	12	The appropriate exposure limits will be strictly adhered to. Keep hands warm and implement regular rotation of trained operatives to share exposure. Monitor and record findings	3	1	3
	Noise	Hearing loss/damage	Major injury	3	4	12	At or above 85dB suitable ear protection is mandatory. Above 80dB but below 85dB suitable ear protection is advised. Ear protection will be available onsite at all times. Any changes in noise levels picked up by SFF site supervisor will be reported to the PC rep onsite Good signage in high risk area supplied by PC Monitor/record findings	3	1	3
	Dust / Debris	Inhalation / Flying Debris	Major injury	3	4	12	Appropriate PPE to be worn (Goggles / dust mask) by operator and personnel working in close proximity.	3	1	3

							Examination of tool bits / blades for excessive wear or damage prior to commencement. Damp down any airborne dust Good signage in high risk areas supplied by PC			
	Re-fuelling	Fire Spills	Burns Environment Contamination	3	3	9	No smoking or naked flame when re-fuelling or within 10m. Use correct funnel for re-fuelling Fuel to be stored in bunded bowsters Spill kits & drip trays to be employed Refuelling area to be advised by PC during induction	3	1	3
	Incorrect use, missing guards, Position of operation	Entanglement Poor posture Fire	Major injuries, Lacerations Soft tissue injuries Burns	3	3	9	Only competent personnel are to operate equipment. Do not use if guard is missing or incorrectly positioned. Flame retardant PPE to be used wherever possible	3	1	3
Cutting of Galvanised Steel Sections. Hot Cutting/Gas/Grinder/Stihl saw	Defective equipment Moving Parts Emissions/Fume – Zinc fumes from cutting Galvanised Steel Noise Vibration Fuels and oils Fire	Personal injury Cuts / Abrasions Metal Fume Fever / Inhalation of fumes Burns	Fatality/Major injury	4	3	12	PC's Hot works permit must in place prior to any hot works commencing Pre-use check of equipment to be carried out each day before use and every time a blade/disc is changed. Defects must be reported. Saw must not be operated unless guard is in place Suitably well-maintained plant to be used at all times. RPE mask to be used when cutting galvanised steel sections with appropriate filter to prevent inhalation of fumes. Cutting to be carried out in well ventilated area.	4	1	4

							Only trained & competent personnel are to operate equipment. Keep hands warm and avoid prolonged use of the equipment- alternate jobs When using the equipment ensure clear working space and ensure a good foot hold. Ensure sparks cannot land on flammable material Ear defenders must be worn when operating the saw – this also includes other personnel within the operating area. An exclusion area to be set up to protect people from sparks/dust/fumes/noise Correct wearing of flame-retardant PPE Fire extinguisher to be available at works area Fire watch to be implemented for 30 mins after hot works finish.			
Slips, Trips & Falls	Access and Egress	Slips, Trips & Falls	Minor injury Cuts and bruises	2	5	10	Visual Awareness Adequate Lighting Correct wearing of PPE Good housekeeping to be maintained at ALL times SFF site supervisor will carry out regular Tool Box talks to changing hazards	2	3	6
Manual Handling	Sprain and strains Torn ligaments/tendons	Lifting heavy/awkward loads	Major injury Pulled muscles	3	4	12	Mechanical methods of lifting to be implemented for pile sections at all times Briefing in manual handling to be given to all site operatives in accordance with company guidelines Gloves and steel toe cap boots to be worn at all times	3	2	6

	Cuts/bruising	Sharp edges	Major injury	3	4	12	Briefing in manual handling to be given to all site operatives in accordance with company guidelines Visual inspection of all pile sections to be carried out prior to handling. Any sharp edges identified will be removed using 4 ½ inch grinder before handling. Agreed SSOW with PC rep Gloves, long sleeved vests/coat and steel toe cap boots to be worn at all times. Good communication between operatives	3	1	3
	Trapped feet/hands	Dropped objects	Major injury	3	4	12	Briefing in manual handling to be given to all site operatives in accordance with company guidelines Gloves and Steel toe cap toe boots to be worn at all times. Good communication between operatives	3	1	3
Head injury from falling objects obstruction or collision with plant	Injury due to unsafe stacking/positioning/storage of plant/materials or vehicles	Employees and general public	Major Injury	3	3	9	PPE- Safety helmets to be worn at all times Exclusion zones to be set up when others are working at height directly above Agreed SSOW by PC rep Good communication between operatives Good signage	3	1	3
Equipment/Plant access and egress with-in, to and from site	Injury to employee or member of the public	Employees and general public, Fuel spillage/ leak	Major Injury,	4	4	16	Signage Trained and competent plant operators Site briefings Traffic routes marked as necessary Warning indicators fitted to vehicles (eg. flashing light /horn) When accessing or exiting a vehicle the following should be followed:	4	1	4

							• 3 points of contact • Facing inwards • Never jumping off • Checking surroundings prior.			
Hazardous substances - COSHH	Coming into contact with potentially hazardous substances	Employees	Major injury	4	3	12	COSHH assessments to be adhered too Correct PPE for the task eg gloves and eye protection etc COSHH procedure outlined in induction/ Supervisors briefing Environmental SDS/RA Follow manufactures guidelines at all times	4	1	3
Machinery and plant movements	Contact With People Collisions Crush Structural collapse	Pedestrians, employees and general public Falling load Overturning machine	Major injury, damage to infrastructure	4	4	16	Provision of banksman to oversee All movements Vehicular movements restricted wherever possible Trained operators Good lighting within the working area Segregation of the working area to competent and trained operatives only Use pedestrian walkways wherever possible Good communication between operatives Appropriate signage	4	1	4
	Contamination of watercourse	Environment	Environmental Disaster	4	3	12	Spill kits and drip trays to be employed. Use of plant nappies and drip trays Report to PC	4	1	4
Use and storage of Petrol & Diesel (highly flammable & combustible fluids)	Contact with contaminant Fuel spills Fire	Fire /explosion Spills	Major Injury Fatality	5	4	20	Diesel to be stored in bunded fuel tanks Petrol will be stored in metallic containers which will not exceed 20litres. They must be marked labelled with correct signage. Petrol containers will be stored safely in works vehicle when not in use.	5	1	5

							Refuel well away from works area Ensure refuelling pint is suitable and well ventilated Ensure the machine is shut off Make sure ignition sources are removed while refuelling, and ensure that no smoking will occur nearby while refuelling Check the data safety sheet and labelling of fuel/oil containers and ensure that required instructions are followed or able to be followed Confirm that all fittings, hoses, terminals and tanks are in good condition and free of leaks Avoid spilling or splashing fuel (for example, us funnels and flexi pour containers) If decanting: Use a suitable pump – Only pour into a container on the ground on a solid surface – wear eye protection – wear suitable gloves Spill kits to be made available Relevant Coshh Assessments to be included in site pack.			
Protective Guard for pile rig	Coming into contact with pile rig whilst in motion	Personal injury	Major Injury	4	4	16	All operatives to retreat to a safe working zone when pile being installed. Revolutions of machine are limited to 9rpm, the average allowable without a protective guard is 12rpm. Maintain safe distance for operation Only trained and competent operative should be allowed within 1m of the task being carried out	4	1	4

Who is at risk Key: Animals, Ground, Public, Vegetation, Water, General Environment GENERAL ENVIRONMENTAL RISKS									
Activity / Hazard	Risk	Who Is at Risk	Risk Rating			Control Measures	Ranking + Controls		
			How Likely	How Severe	Risk(L x S)		How Likely	How severe	Risk(L x S)
Needles and Sharps	Discovery during works in an area or en-route to site (car parks, access points etc)	Public	3	5	15	If noted, record locations and do what you can to mark area and keep others away. Report to Site Manager ensure these get removed	1	5	5
Access and Egress	Spread of mud from sites onto surrounding land and roads	Public and Vegetation	3	2	6	Seek site help to keep entrance clean, ask them if you can wash wheels etc.	2	2	4
Machine breaks down	Loss spillage of fuel, hydraulic fluids, engine oil or other hydrocarbons to ballast or lineside	Animals, Ground and Vegetation	3	4	12	Maintain vehicle regularly. Compound this by daily inspection of vehicle to check for signs of leakage. Carry spill kits suitable for where you are working. On hard surfaces granules can be put down, on ballast or soil use flexible spill mat/tray	1	4	4

Hydrocarbon transferal	Spill during refuelling, draining of engines, tank discharge	Animals, Ground and Vegetation	3	4	12	Ensure any operations with higher risks have a full set equipment (e.g. enough containers, funnels etc.) Ensure a flexible spill mat or tray (e.g. 'plant nappy' type) is available	2	4	8
Oil/fuel Spill Sensitive Areas	Hydrocarbon spillage (e.g. leak, burst hose, during repairs/refuelling) affects streams, ponds or countryside	Animals, Water	3	4	12	Sensitive areas to be identified before works start (workers instructed not to carry out high risk tasks at the locations) Identify suitable locations (e.g. access points) and get staff to use them.	1	4	4
Spillage of COSHH Substances	Substance spillage affects homes, street works sites, streams, ponds or countryside	Animal, Ground, Water, Vegetation, Water and Public	3	4	12	Seek lowest risk form of substance to use and follow instructions for use. Carry out COSHH and usage risk assessment and do actions from assessment.	2	4	8
Vibration	Machine noise disturbs residents or other public	Public	4	3	12	Ensure machines are properly maintained and that any springing or dampening is working. Client to inform residents possible disturbance. Brief staff to turn machines off when not in use and to take regular breaks	2	3	6
Damage from works or material stacking	Plants or animals squashed, burrows or territorial/feeding routes blocked.	Animals, Vegetation	3	4	12	Ensure lineside not disturbed unnecessarily- for example by taking 'shortcuts'. Ensure materials are left in cess area and removed promptly	1	4	4

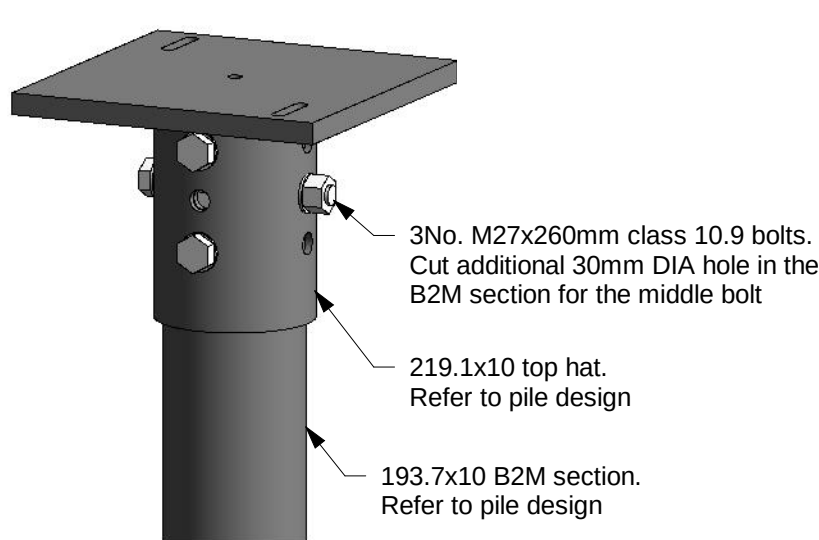
Waste and leftovers	Plants or animals squashed, burrows or territorial/feeding routes blocked. Public/worker trip hazard	Animals, Vegetation and Public	3	4	12	Instruct that waste and off-cut materials are returned to the depot. Supervisors to check over site before leaving area	1	4	4
Disturbance of controlled weeds	Lax, uniformed works practices lead to spread of Japanese Knotweed, Himalayan Balsam, Giant Hogweed or others	Vegetation and Public	4	4	16	Brief staff about plants, keeping clear of them and the need to report any contact with them. Supervisors to check over site before leaving area	1	4	4
Disturbance of rare wildlife	Badgers, bats and water voles all known form this route	Animals and Vegetation	4	4	16	Brief staff about rough locations, keeping clear of them and the need to report any contact with them. HSE Advisor to visit area when staff are present to monitor possible contact or signs of presence	1	4	4
Disturbance of rare wildlife	Nesting birds frightened off and abandon young	Animals	4	4	16	Brief staff about risks in bird nesting season (March to August inclusive). Plan works to avoid trees and hedgerows during the nesting period	2	4	8
Discharge of water	Need to remove fluid from pits, chambers or others locations for cabling/pole installation	Water	2	4	8	Check whether locations contain water in advance of works. If so seek clearance by civils. Obtain permission and permits (confined space – discharge of water – power off) before setting up site	1	4	4

Hazardous substance discovery	Asbestos discovered in course of works	Public	2	5	10	Brief staff on keeping away from/urgent reporting of possible asbestos finds	1	5	5
Use of energy	Most equipment, lights, machines etc. used on site less than domestic/work shop types	General Environment Public	4	3	12	Brief staff on lean operations, switching off when not in use etc. Use green fuel, test plant regularly, ensure new buys are efficient as possible	2	3	6

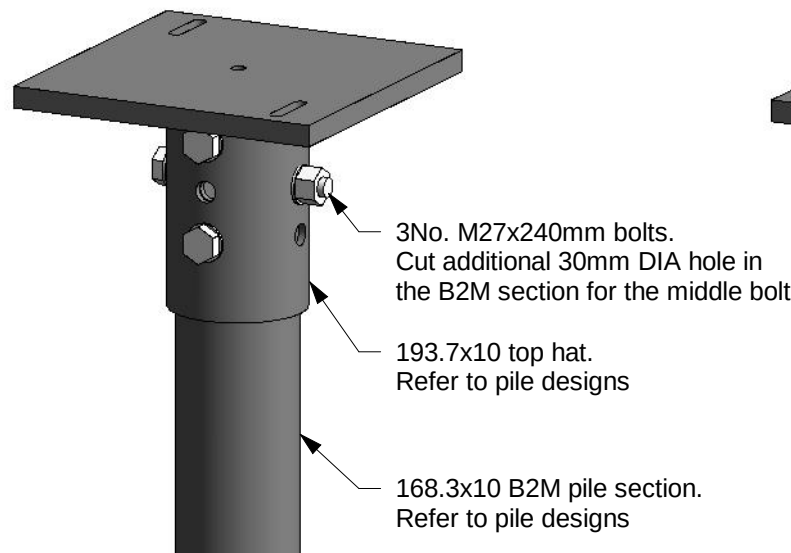
Person completing assessment: **Marion Lawrence** Date: **27/10/2020** Signed:



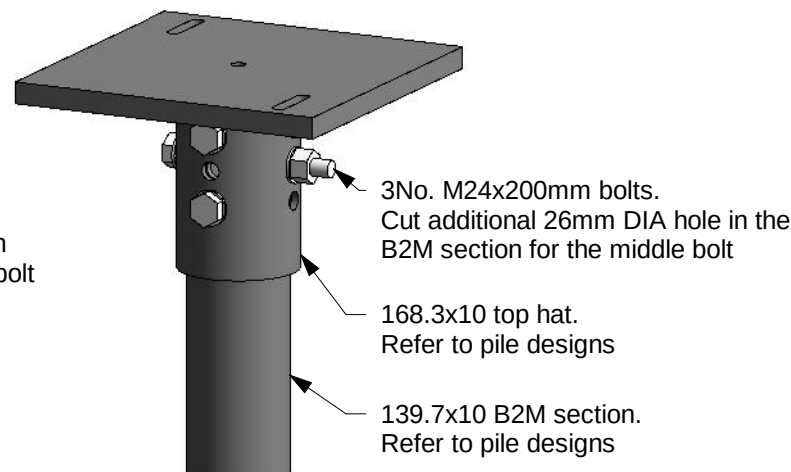
Supervisor on site can carry out further risk assessments if necessary.



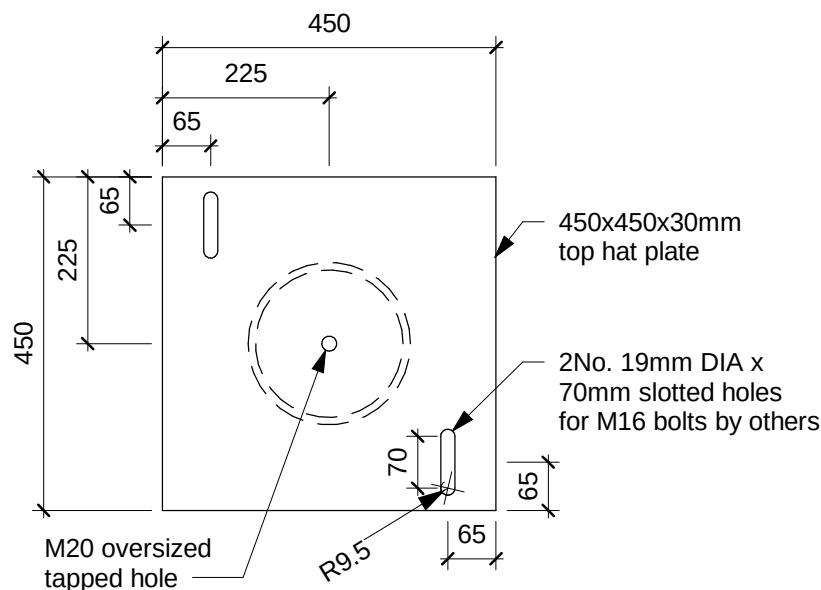
PILE T1 CONNECTION



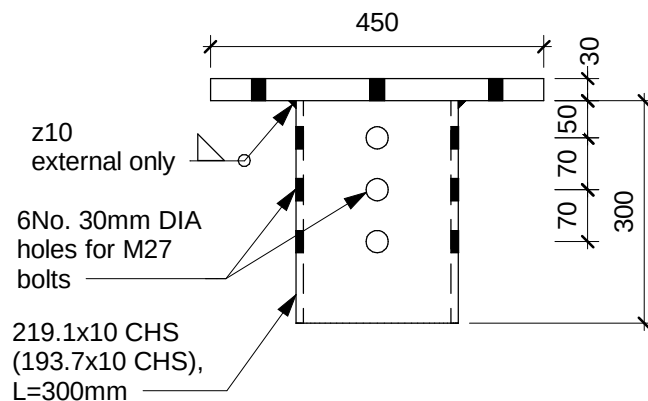
PILE T2 & T3 CONNECTION



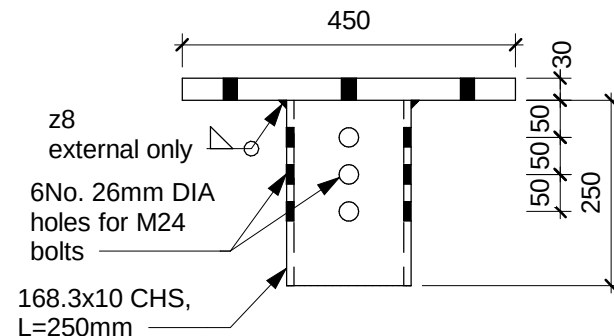
PILE T4 & T5 CONNECTION



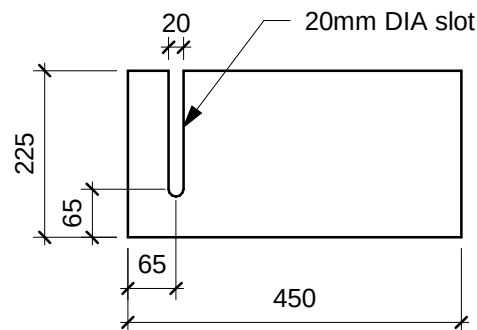
TOP HAT. PLAN VIEW
(all top hat types)



219.1x10 (193.7x10) TOP HAT. SIDE VIEW



168.3x10 TOP HAT. SIDE VIEW



5mm THICK SPACER PLATES FOR LEVELLING
BETWEEN TOP HATS AND SUPERSTRUCTURE
COLUMNS (STEEL S275)

General Notes:

1. Conforms to BS8888. All geometrical tolerances must not exceed steel execution tolerances specified in BS EN 1090 for the execution class specified in General Note 5.
2. All dimensions are in millimetres unless otherwise stated.
3. All levels are in metres related to site datum unless otherwise specified.
4. This drawing is to be read in conjunction with the relevant specification.
5. Design & fabrication to latest edition of BS EN 1993-1, BS EN 1993-5, BS EN 1990:2002+A1:2005 & BS EN 1090-2 (execution class 2) unless otherwise specified.
6. All constituent products to be CE marked and DoP's provided upon request.
7. All RHS, SHS and CHS to be minimum S355 J2H complying with BS EN 10219, BS EN 10210 unless otherwise stated.
8. All open sections and plates to be S355 J2 complying with BS EN 10025 unless otherwise stated. Plates greater than 55mm thick are to be grade S355 NL unless otherwise stated.
9. All welding to be by qualified personnel certified to BS EN ISO 9606-1 in accordance with client requirements and approved by Screwfast Foundations.
10. All welds to be BS EN 1011-1 and are specified as 'z - leg length' on drawing. Continuous fillet welds to all seams unless otherwise specified.
11. Trim or notch all mating ends of sections and prepare all edges of sections or plates for acceptable fit before welding.
12. Do not grind off welds unless otherwise specified.
13. All butt welds where specified to full penetration and capped over with additional cap weld where specified.
14. All structural bolts to be BS EN 15048 class 8.8. Bolts galvanised above ground and to a depth of 2.0m BGL. Pile bolts below 2.0m BGL to similar class but zinc coated unless otherwise stated.
15. All structural bolts to be torqued as per the installation requirements on the quality checklist. Fit & tighten lock nuts as required after primary nuts have been torqued.
16. All holding down bolts, washers, nuts & lock nuts as specified to be provided by others unless otherwise agreed.
17. Min. 40Mpa grout to be used where specified unless otherwise indicated.
18. Grout to be placed as soon as reasonably possible after placement of grillage.
19. All steelwork unless specifically indicated to be self colour, to be galvanised.
20. All galvanising to be in accordance with BS EN ISO 1461 min. cover 85 microns unless otherwise stated. All galvanising drainage holes to be fitted with plastic plugs during assembly.
21. It is the fabricators responsibility to perform all quality checks in accordance with Screwfast quality procedures and observe all normal good practice.
22. All health and safety regulations during fabrication, handling, loading or offloading and while transporting components or complete assemblies should be adopted.
23. The fabricator must assemble the grillage prior to delivery to ensure full design compliance. Failure to comply could necessitate in on site remedial work which will be at the cost of the fabricator.
24. Grillage and other structures or substructures to be delivered in fully or partially assembled form as confirmed by the Screwfast project manager prior to delivery on site.
25. Where required, the supply and installation of earth bonding equipment is by others. Where foundation earthing or equipotential bond testing is required, this is to be by others.
26. This design is copyright to Screwfast Foundations and some patents may apply.

AS BUILT

Design Residual Risk Assessment - Construction

Activity	Residual risk	Control
Piling near to existing structures	Causing minor damage to existing structure during piling operation	Undertake investigations to determine position and level of existing structure prior to piling
Piling installation including work on sloping ground	Personal injury	Use mechanical lift. Adequate lighting. Manual handling risk assessment. Create level access on sloping ground. Exclusion zone around work zone area.
Buried/overhead services	Damage to service and workers	Provide with information and drawings. contractor to ensure adequate steps are followed onsite to locate services
Unexpected ground conditions	Not being able to get piles into ground, or longer piles required	Pre-auger, to request redesign, or to request site move.
Piles installed out of position	Not being able to land structure in correct position	Ensure piles are installed within allowable tolerance
Lifting materials	Dropping materials	Certification for all lifting equipment and provide suitable supervision

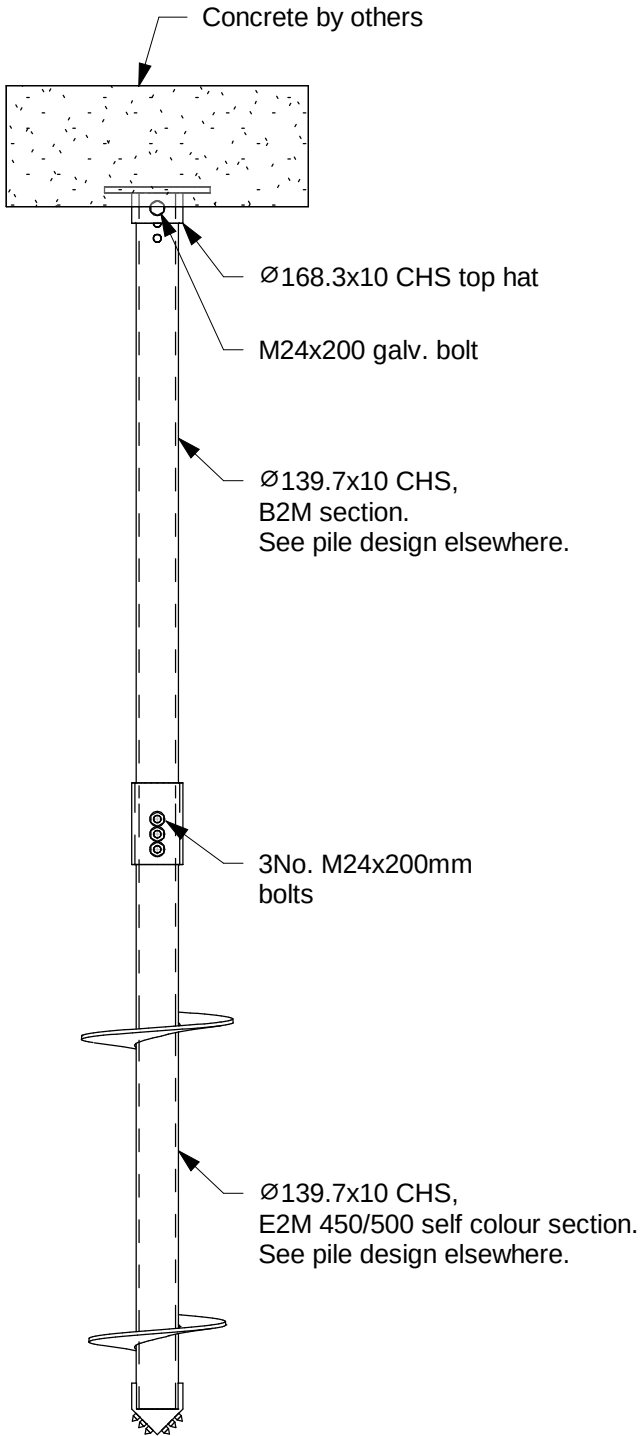
Do not scale
Design life: 60 Years

COPYRIGHT SCREWFAS

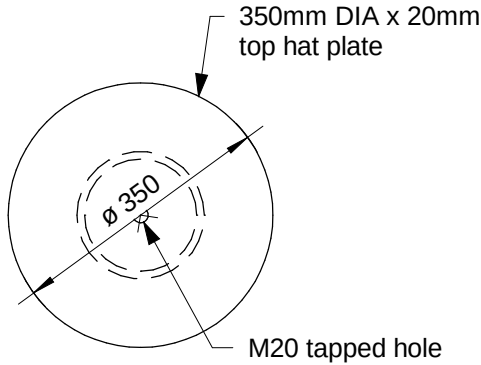
 4 SANDRIDGE PARK, PORTERS WOOD, ST ALBANS, HERTS, AL3 6PH TEL: 01727 735 550 FAX: 01727 828 098 EMAIL: info@screwfast.com ISO 9001:2008, NO. GB9498, UVDN NO. 77558, RAIL LINK NO. 18290 SCREWFAS	CLIENT 	CONTRACTOR	PROJECT TITLE DOVERCOURT SUBSTATION	DESIGNED SM	DRAWN APA	CHECKED LC	APPROVED AP
	CONSULTANT	CHECKER	DRAWING TITLE HELICAL PILE CONNECTIONS AND TOP HAT FABRICATION DETAILS	06-12-17	07-02-17	07-02-17	08-02-17
				SFF No	DWG No	STATUS	REV No
				6014	03	C	0



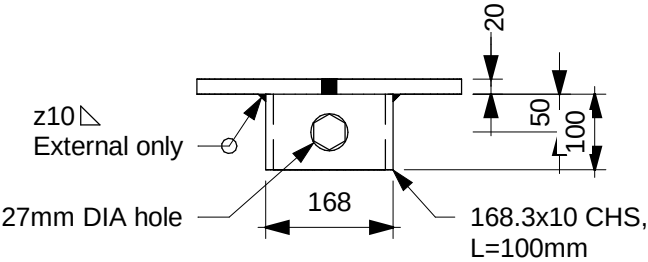
ISOMETRIC VIEW



SIDE VIEW



Top hat. Plan view



Top hat. Side view

- General Notes:**
1. Conforms to BS8888. All geometrical tolerances must not exceed steel execution tolerances specified in BS EN 1090 for the execution class specified in General Note 5.
 2. All dimensions are in millimetres unless otherwise stated.
 3. All levels are in metres related to site datum unless otherwise specified.
 4. This drawing is to be read in conjunction with the relevant specification.
 5. Design & fabrication to latest edition of BS EN 1990-2 (execution class 2), BS EN 1990:2002+A1:2005, BS EN 1993-1, BS EN 1993-5 unless otherwise specified.
 6. All constituent steel products to be CE marked and DoP's provided upon request.
 7. All RHS, SHS and CHS to be minimum S355 J2H complying with BS EN 10210 unless otherwise stated.
 8. All open sections and plates to be S355 J2 complying with BS EN 10025 unless otherwise stated. Plates greater than 55mm thick are to be grade S355 NL unless otherwise stated.
 9. All welding to be by qualified artisans certified to BS EN ISO 9606-1 in accordance with client requirements and approved by Screwfast Foundations.
 10. All welds to be BS EN 1011-1 and are specified as 'z - leg length' on drawing. Continuous fillet welds or butt welds to all seams unless otherwise specified.
 11. Trim or notch all mating ends of sections and prepare all edges of sections or plates for acceptable fit before welding.
 12. Do not grind off welds unless otherwise specified.
 13. All butt welds where specified to full penetration and capped over with additional cap weld where specified.
 14. All structural bolts to be BS EN 15048 class 8.8 unless noted otherwise. Bolts galvanised above ground and to a depth of 2.0m BGL. Pile bolts below 2.0m BGL to similar class but zinc coated unless otherwise stated.
 15. All structural bolts to be torqued as per the installation requirements on the quality checklist. Fit & tighten lock nuts as required after primary nuts have been torqued.
 16. All holding down bolts, washers, nuts & lock nuts as specified to be supplied by others unless otherwise agreed.
 17. Min 40Mpa grout to be used where specified unless otherwise indicated.
 18. Grout to be placed as soon as reasonably possible after placement of grillage.
 19. All steelwork unless specifically indicated to be self colour, to be galvanised.
 20. All galvanising to be in accordance with BS EN ISO 1461 min. cover 85 microns unless otherwise stated. All galvanising drainage holes to be fitted with plastic plugs during assembly.
 21. It is the fabricators responsibility to perform all quality checks in accordance with Screwfast quality procedures and observe all normal good practice.
 22. All health and safety regulations during fabrication, handling, loading or offloading and while transporting components or complete assemblies should be adopted.
 23. The fabricator must assemble the grillage prior to delivery to ensure full design compliance. Failure to comply could necessitate in on site remedial work which will be at the cost of the fabricator.
 24. Grillages and other structures or substructures to be delivered in fully or partially assembled form as confirmed by the screwfast project manager prior to delivery on site.
 25. Where required, the supply and installation of earth bonding equipment is by others. Where foundation earthing or equipotential bond testing is required, this is to be by others.
 26. This design is copyright to Screwfast Foundations and some patents may apply.

FOR APPROVAL

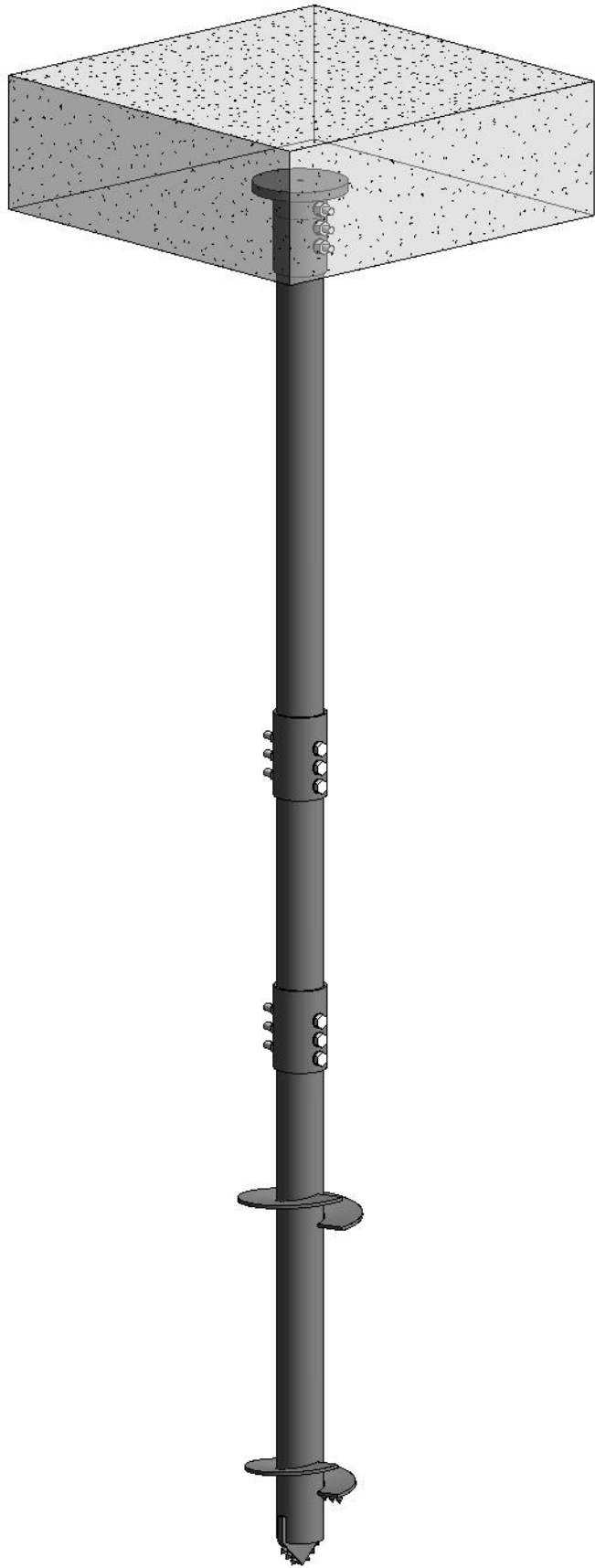
Design Residual Risk Assessment - Construction				
Activity	Residual risk	Control		
Piling near to existing structures	Causing minor damage to existing structure during piling operation	Undertake investigations to determine position and level of existing structure prior to piling		
Piling installation including work on sloping ground	Personal injury	Use mechanical lift. Adequate lighting. Manual handling risk assessment. Create level access on sloping ground. Exclusion zone around work zone area.		
Buried/overhead services	Damage to service and workers	Provide with information and drawings. contractor to ensure adequate steps are followed onsite to locate services		
Unexpected ground conditions	Not being able to get piles into ground, or longer piles required	Pre-auger, to request redesign, or to request site move.		
Piles installed out of position	Not being able to cast concrete in correct position	Ensure piles are installed within allowable tolerance		
Lifting materials	Dropping materials	Certification for all lifting equipment and provide suitable supervision		

Do not scale
Design life: 120 Yrs

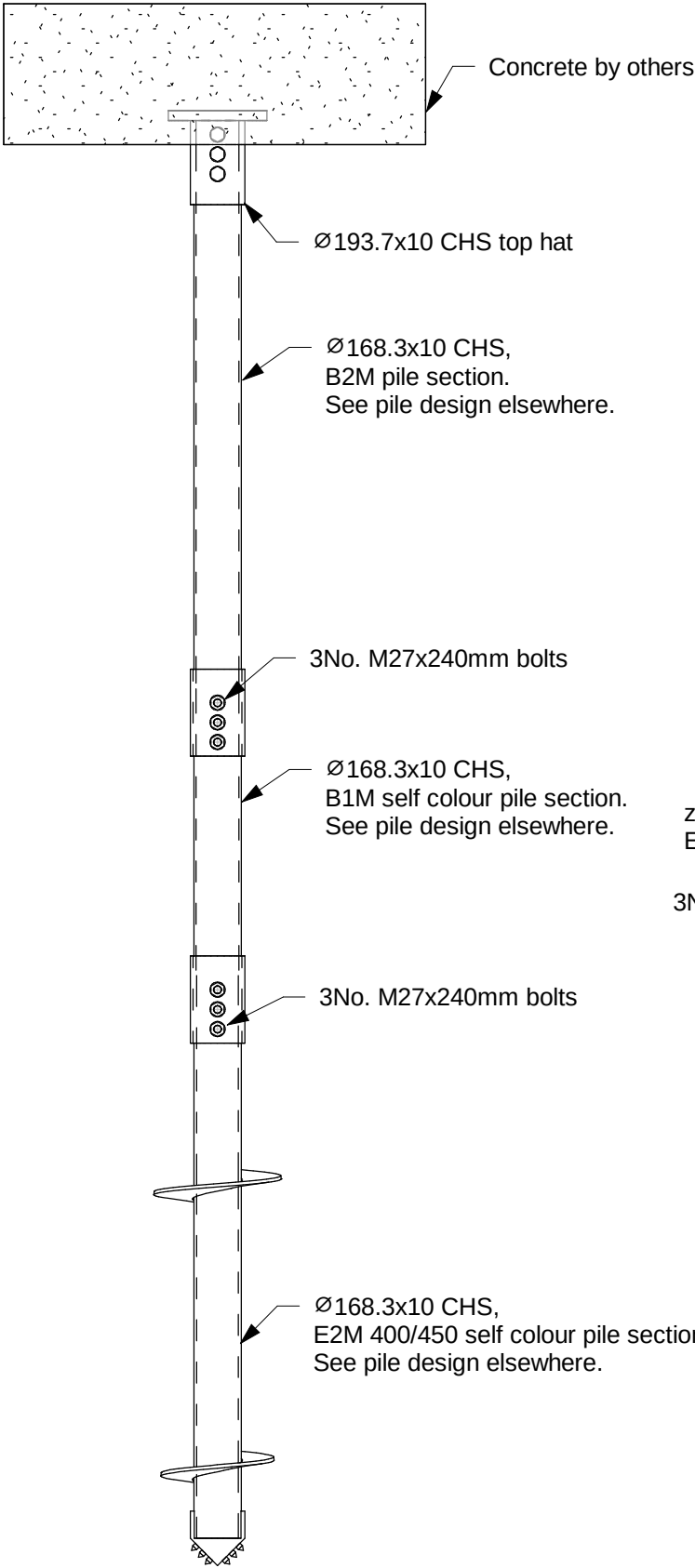
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										15-09-17	27-09-17	26-09-17	27-09-17
				CONSULTANT		CHECKER		DRAWING TITLE		SFF No	DWG No	STATUS	REV No
								RETAINING WALL TYPE 1 HELICAL PILES		6082	01	A	0

ScrewFast
FOUNDATIONS
LTD

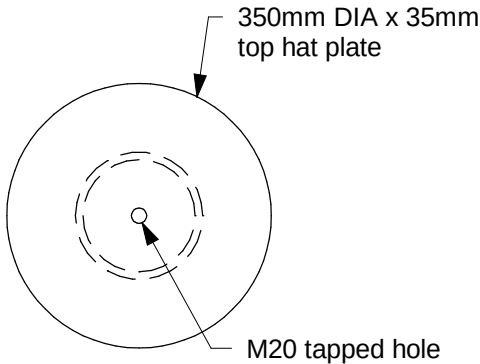
4 SANDRIDGE PARK, PORTERS WOOD, ST. ALBANS, HERTS, AL3 6PH
TEL:01727 735 550 FAX:01727 828 098 EMAIL: info@screwfast.com
ISO 9001:2008, NO.G89496, UVDB NO. 77558, RAIL LINK NO.18290
SCREWFEST PRODUCTS ARE PROTECTED BY COPYRIGHT & PATENTS FILED AND PENDING.UK & FOREIGN PAT'S:
Nos: 0104330.6, 0311022.8, 0400863.7, 0407082.7, 0408155.0, 0422062.0, 0426025.3, 0505127.1, 0505558.7, 0507345.7



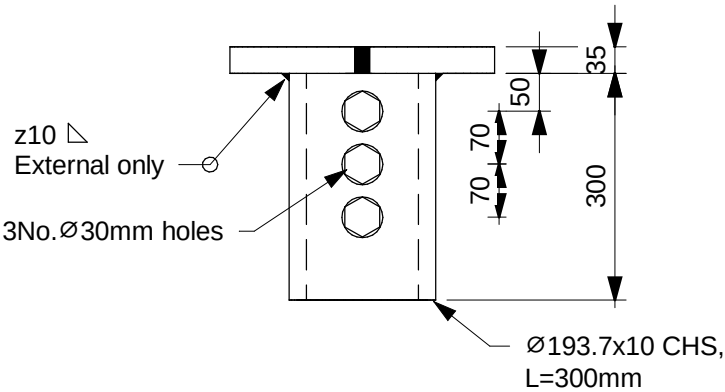
ISOMETRIC VIEW



SIDE VIEW



Top hat. Plan view



Top hat. Side view

General Notes:

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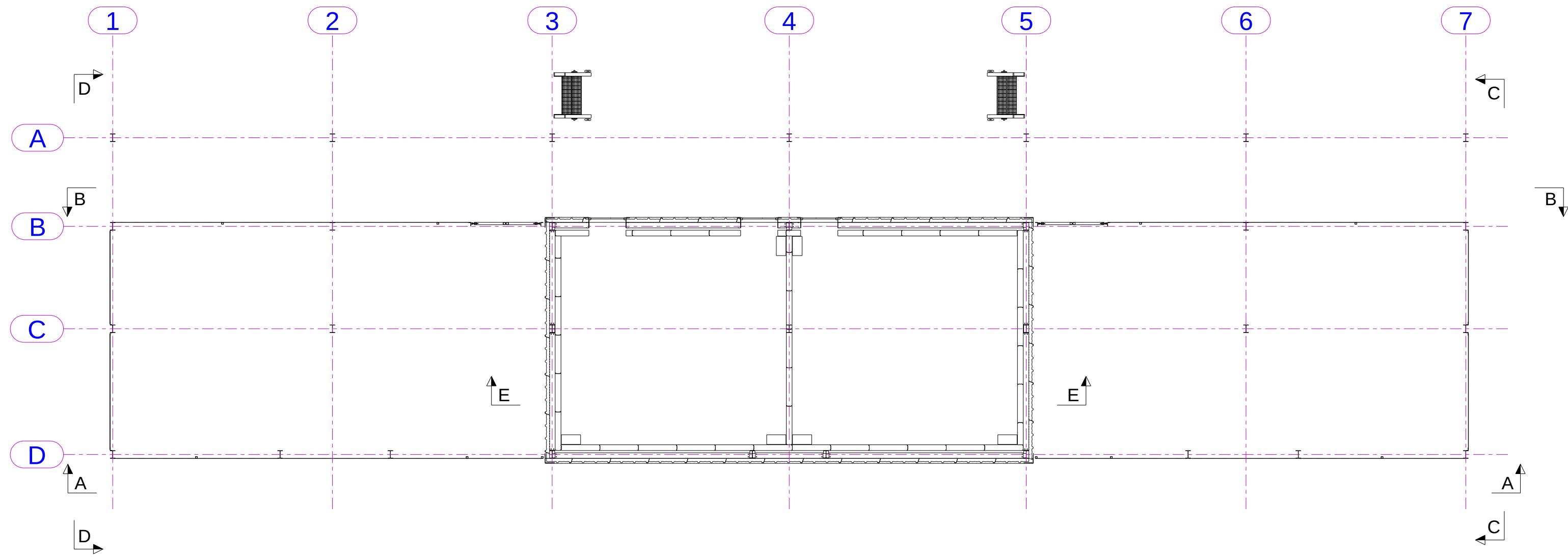
FOR APPROVAL

Design Residual Risk Assessment - Construction							
Activity	Residual risk		Control				
Piling near to existing structures	Causing minor damage to existing structure during piling operation		Undertake investigations to determine position and level of existing structure prior to piling				
Piling installation including work on sloping ground	Personal injury		Use mechanical lift. Adequate lighting. Manual handling risk assessment. Create level access on sloping ground. Exclusion zone around work zone area.				
Buried/overhead services	Damage to service and workers		Provide with information and drawings. contractor to ensure adequate steps are followed onsite to locate services				
Unexpected ground conditions	Not being able to get piles into ground, or longer piles required		Pre-auger, to request redesign, or to request site move.				
Piles installed out of position	Not being able to cast concrete in correct position		Ensure piles are installed within allowable tolerance				
Lifting materials	Dropping materials		Certification for all lifting equipment and provide suitable supervision				

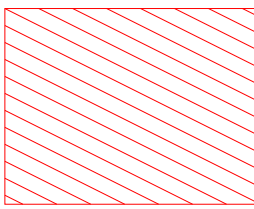
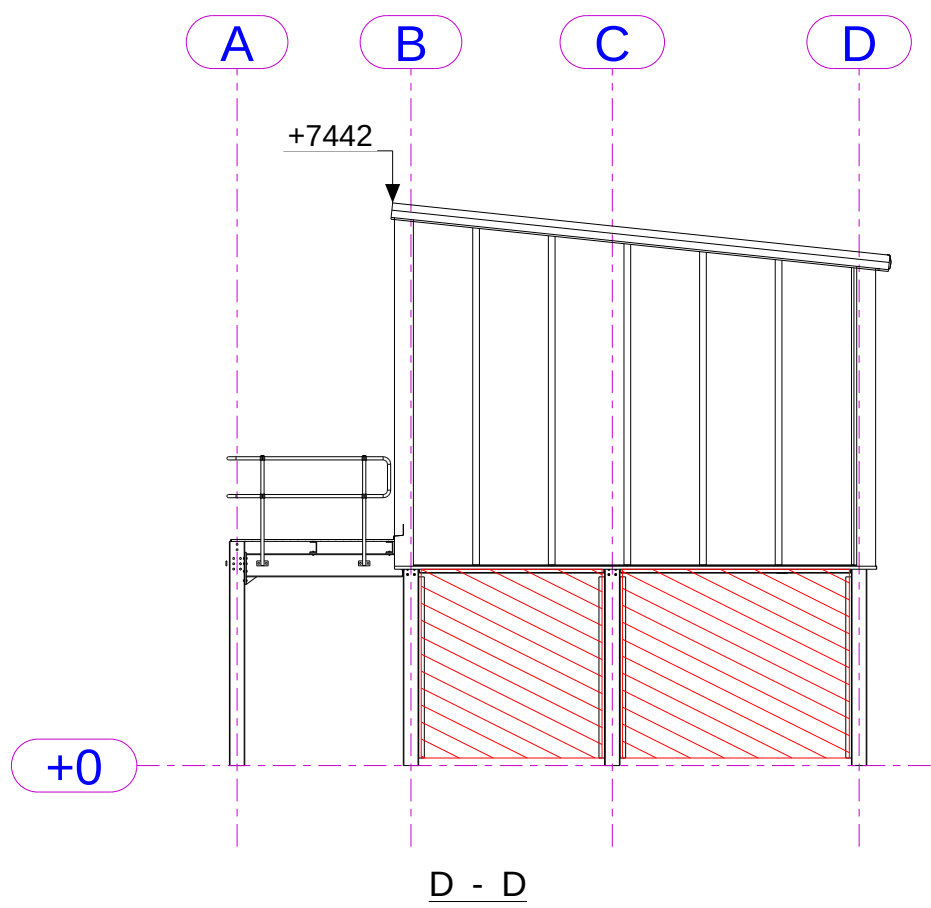
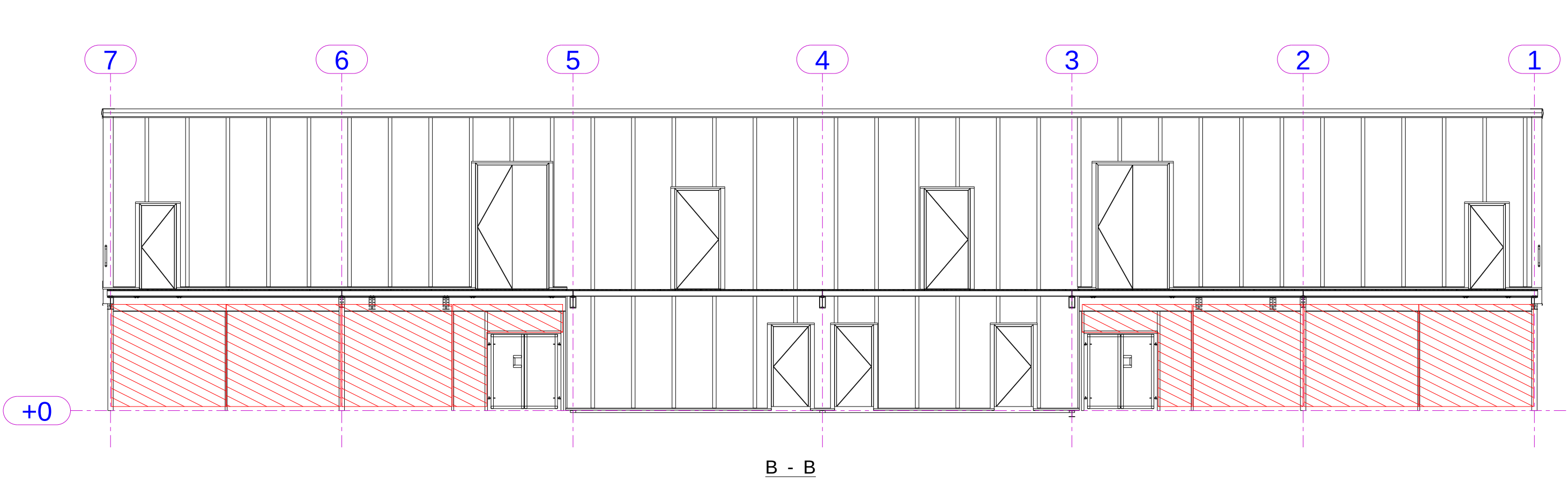
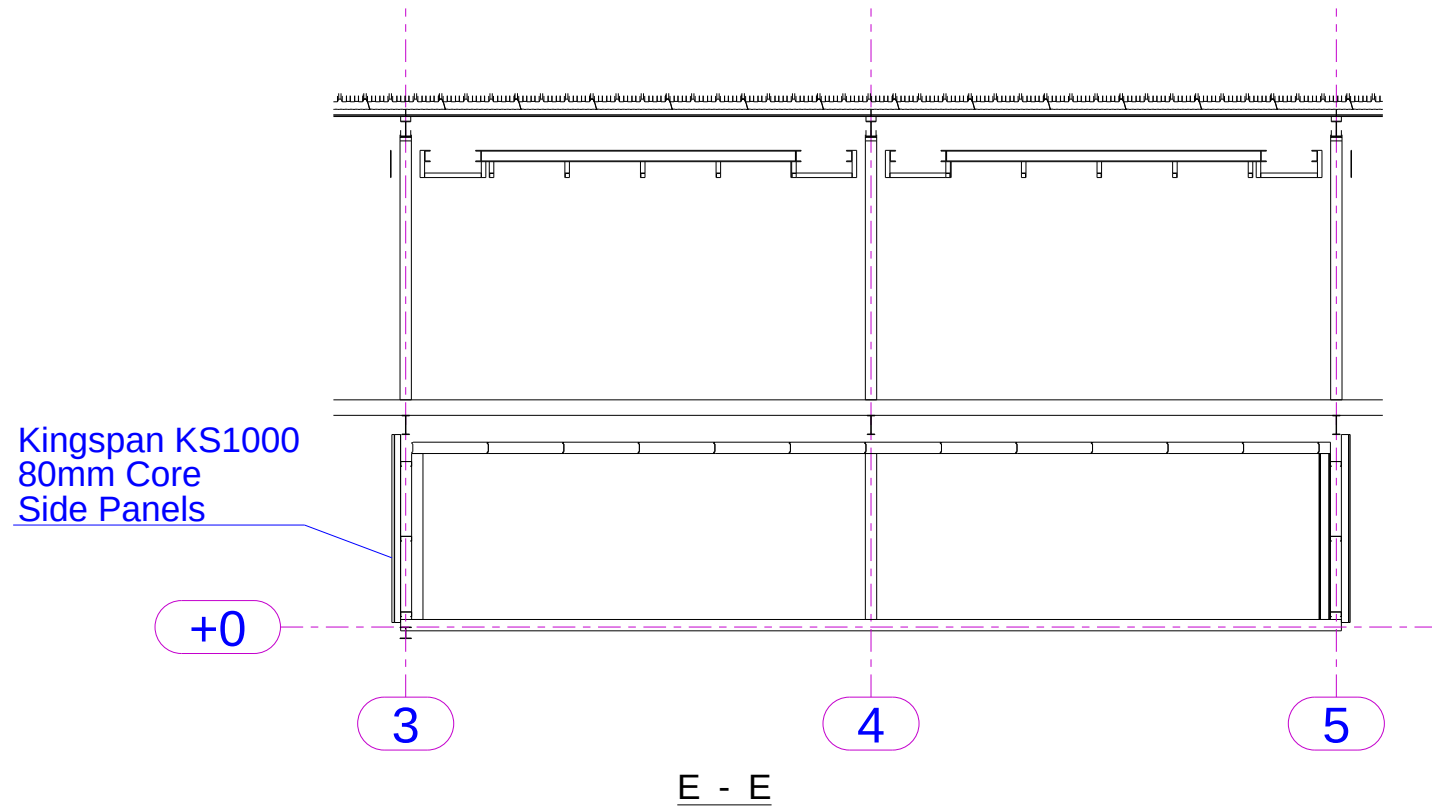
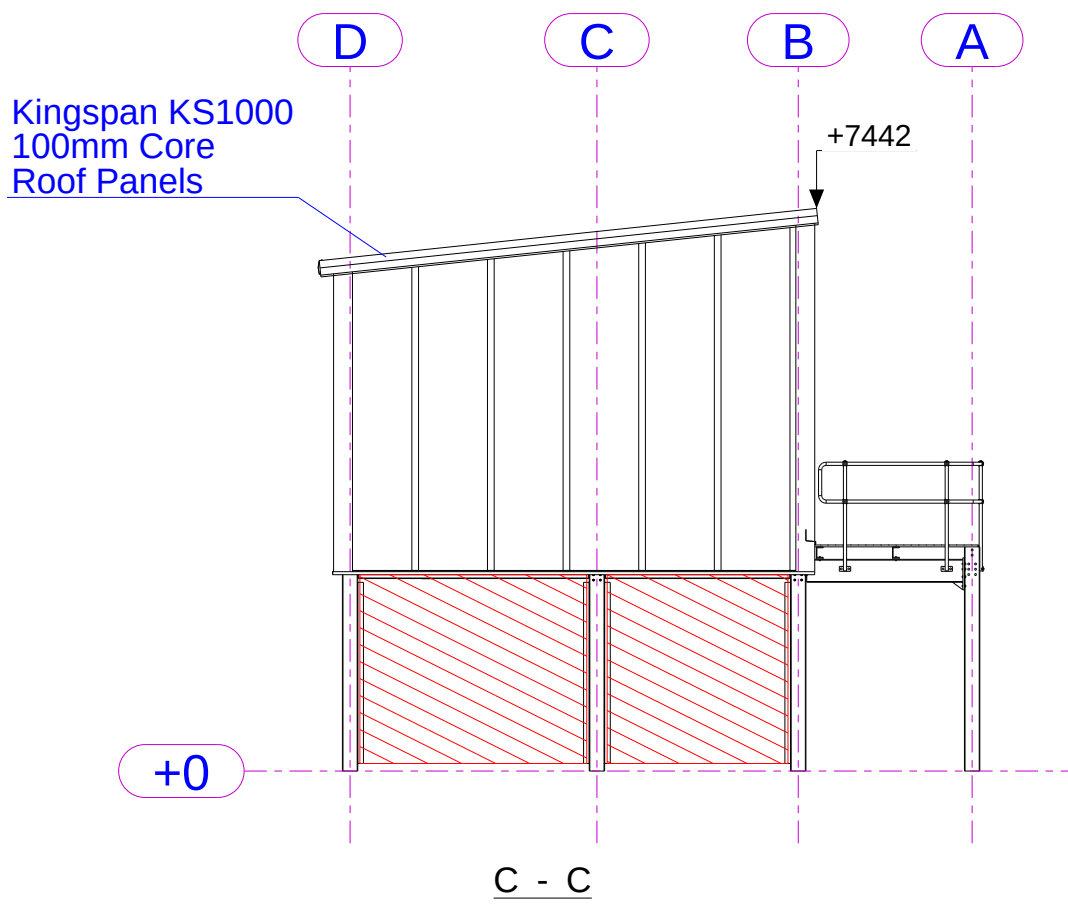
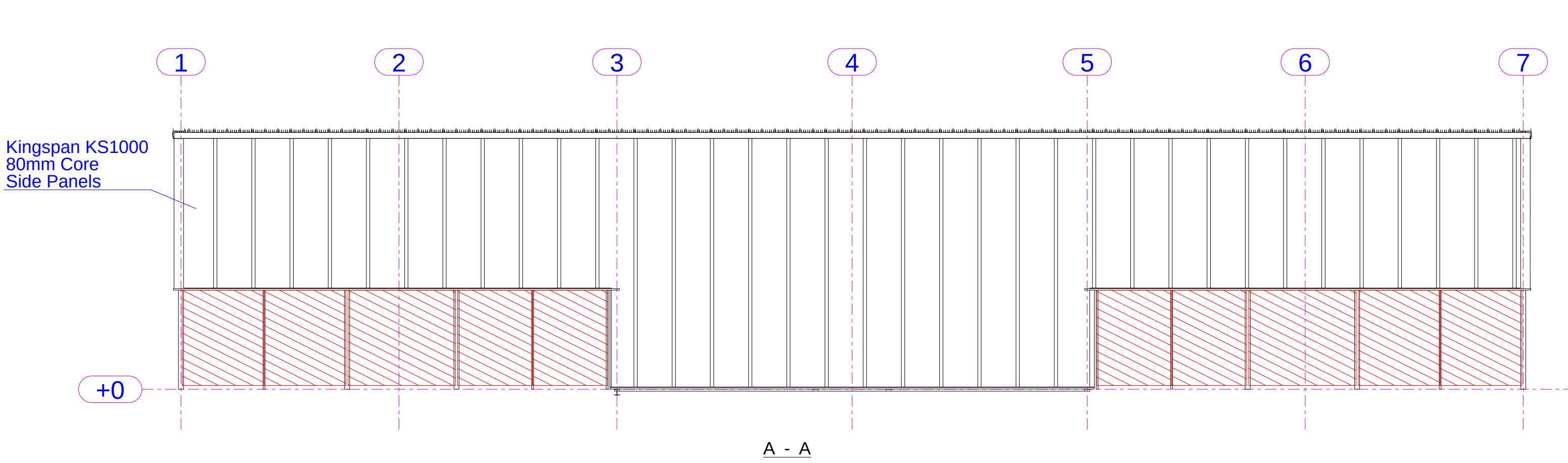
Do not scale
Design life: 120years

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JSM Project Union - Plan View



Hatched Areas Denote A358
Weld Security Mesh Panels

REV MARK	REVISION DESCRIPTION	REVISION DATE
JSM	Project Union Data Centre	
 HAWKINS STEEL LTD Unit 5a, Thorpe Way, Bridgway, Chichester, OX16 4SP T: 01299 252 363 F: 01299 251 099 E: info@hawkins-group.co.uk www.hawkins-group.co.uk		
DRAWING TITLE	Project Union - Plan & Elevation Views	
CONTRACT	Project Union Data Centre	
MODELLED BY	MC	ISSUE DATE
CONTRACT NO	JOB149970	SCALE 1:100
DRAWING No	149970_101	REVISION No.