



Method Statement for the vibratory installation of sheet piles using an excavator mounted 'Movax' to form permanent boundary retaining wall

Contract No.	Contract Name.	Principal Contractor
C1642	Newport Transporter Bridge	John Perkins Construction

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24. Appendix C. Example Working Platform Certificate._____ **26**

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These Documents MUST be submitted weekly as part of the Friday Pack:

- Daily Safety Briefing
- Site Safety Inspection Report
- Weekly Toolbox Talk
- Weekly PUWER & LOLER Inspection Register

Daily Reports:

- Daily Report
- Pre-Auger Record Sheet
- Driving Record Sheet - Impact Hammer
- Operator Report
- Daily Piling Record - Installation Record Sheet - Vibratory Hammer or Silent Piler
- Daily Piling Record - Extraction Record Sheet - Vibratory Hammer or Silent Piler
- Weekly Plant Return
- Basic Maintenance Checks on Work Vehicles

Special Conditions On Site That Require Third Party Approval:

Special Ecology ☐ Watercourses ☐ Highways ☐ Railway Asset ☐ Bridges ☐
Project Handover to Supervisor

- | | | | |
|----------------------------|--------------------------|-----------------------------------|--------------------------|
| ➤ DRAWINGS | ☐ | ➤ PLANT & EQUIPMENT | ☐ |
| ➤ DELIVERY SCHEDULE | ☐ | ➤ LOLER CERTIFICATION | ☐ |
| ➤ METHOD STATEMENT | ☐ | ➤ 12m THOROUGH INSPECTIONS | ☐ |
| ➤ RISK ASSESSMENTS | ☐ | | |
| ➤ LIFT PLANS | ☐ | | |

Signed Manager:print:.....

Signed Supervisor: print:.....

Date:

THIS MUST ONLY BE SIGNED WHEN THE SUPERVISOR HAS HAD A FULL HANDOVER FROM THEIR MANAGER AND UNDERSTANDS THE FULL PROJECT

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1. Purpose and Scope

- 1.1 This method statement defines the Sheet Piling UK Company Standard Implementation procedure for the vibratory installation of approx. 51.10m lineal metres of EZ19-700 sheet piles, using an excavator mounted 'Movax' to form a permanent boundary retaining wall.

2. Site Specific Hazards

- 2.1 Please refer to section 18 and attached Risk Assessments C1642-SPUK-RA-EJ-001-Rev0
- 2.2 Existing decommissioned gas main intersecting pile line. Required to be fully exposed and/or removed prior to sheet pile installation.
- 2.3 Existing 'live' service intersecting pile line. Required to be fully exposed and/or accurate service plans provided to avoid contact. Details to be provided John Perkins Construction.
- 2.4 Piling works in proximity to watercourse. Environmental controls to be in place during piling works. All relevant permits/notifications to be in place prior to piling works (Environment agency etc).
- 2.5 Environmental controls - All fuel powered piling plant/equipment to come with 'plant nappies'. Only bunded fuel bowsers to be used on site.

3. Site Organisation and Control

3.1

Name	Contact Number	Position
Hayden Pickett	07771904283	Site Manager
		-
		-
		-

3.2 **Sheet Piling (UK) Ltd**

Name & Contact Number	Position
Elliott Jones – 07890 943 541	Contracts Manager
Richard Greenwood – 07368 868 358	Health & Safety Advisor
Andy Ball – 07584 604 460	Operations Manager
Andy Foy – 07967 794 141	Director
	-
	-

4. Site Location & Access

- 4.1 The site address is: **Newport Transporter Bridge, Brunel St, Newport, NP20 2JY**
- 4.2 Access to the site is via: *John Perkins site entrance, Off Stevenson St, Newport*

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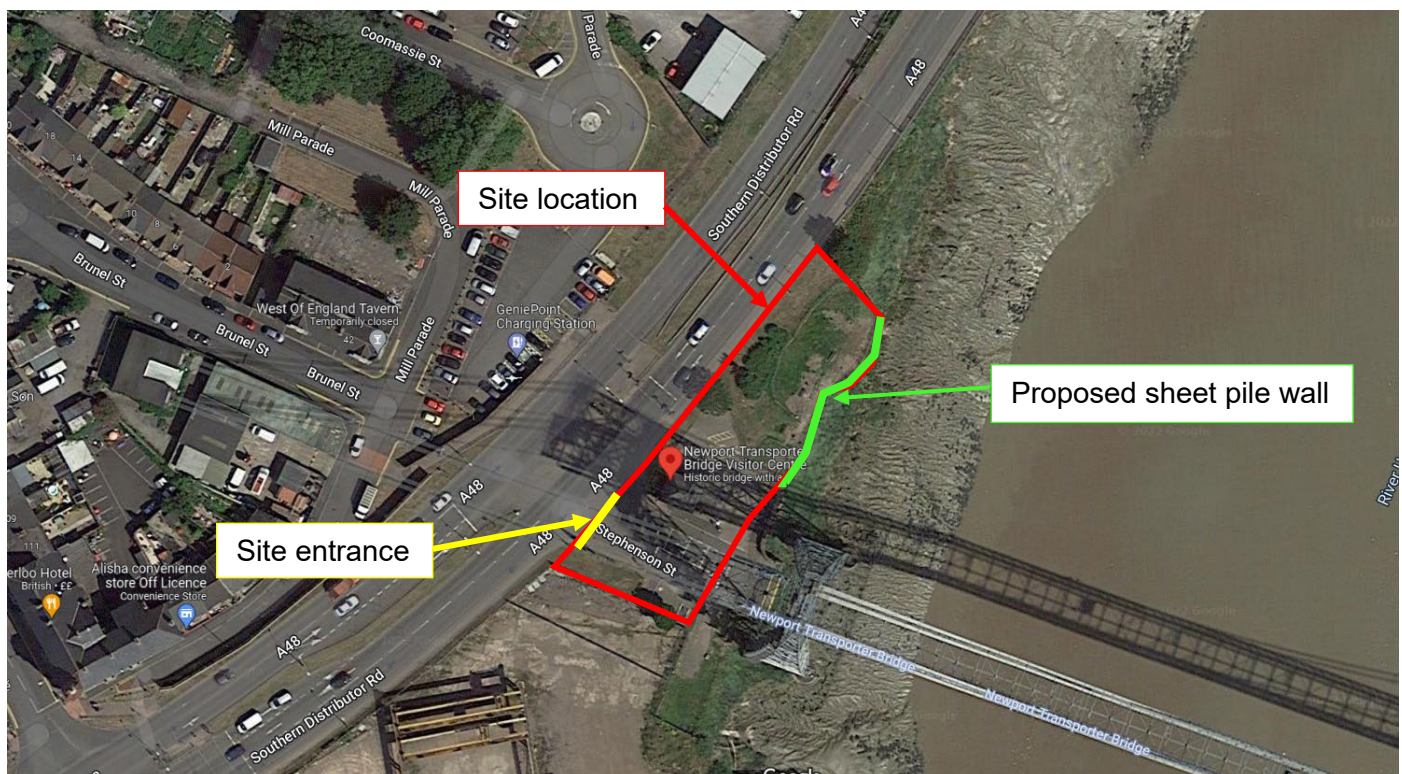
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- 4.3 Traffic Management: To be provided by John Perkins Construction
- 4.4 Restricted Delivery Times: **SPUK have not been made aware of any restrictions in regards to delivery times. All deliveries will be made between 08.00 – 18.00 unless classed as abnormal loads.** Abnormal loads will be delivered to site in compliance with the approved

5. Scope / Sequence of Works

- 5.1 The Sheet Piling UK works are to be carried out in compliance with this Method Statement, associated documents:
- 5.1.1 Risk Assessments - C1642-SPUK-RA-EJ-001-Rev0
 - 5.1.2 COSHH Assessments – C1642-SPUK-COSHH-EJ-001-Rev0
 - 5.1.3 Drawing Number – C1642/DR/01/RevP1
 - 5.1.4 Sequence of works – Visit 1;
 - 5.1.4.1 Mobilisation of piling plant/equipment.
 - 5.1.4.2 Commencement of sheet pile installation using Movax from agreed location.
 - 5.1.4.3 Fabrication of final pile interface with existing concrete retaining wall.
 - 5.1.4.4 Demobilisation of piling/equipment.
 - 5.1.4.5 Visit 2 – Start date TBC

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5.1.4.6 Mobilisation of piling plant/equipment

5.1.4.7 Commencement of sheet pile installation form previously installed piles.

5.1.4.8 Cut 50mm weepholes at 2.8m c/c

5.1.4.9 Demobilise piling plant/equipment.

6. Duration and Hours of Works

6.1 Commencement date: 3rd October 2022

6.2 Intended programme duration is approx. 1 week (Visit 1)

6.3 Site Working hours as below.

Monday – Thursday	08:00 - 18:00
Friday	08:00 - 18:00
Weekends	To be confirmed where necessary.

6.4 Timings and dates may vary during the works dependant on Site Rules and changes in Conditions.

7. Competent Labour

Qty	Job Role	Additional Comments
1	Contracts Manager	Visiting
1	Piling Supervisor	Visiting
1	Safety Advisor	Visiting
1	Piling Foreman	Full time
1	Piling Operative / Signaller / Slinger	Full time
1	Crane Operator	Lifting Ops
1	Piling Welder	Full time
1	Temporary Works Coordinator	Site attendance when required for inspections
1	Temporary Works Supervisor	Site attendance when required for inspections
1	Plant Fitter	Site attendance when required

8. Welfare

8.1 Welfare arrangements will be supplied by the client or **John Perkins Construction**. These should be in line with Schedule 2 of the Construction Design & Management Regulations 2015 (CDM). All sites are to have a minimum amount of welfare facilities available for workers, which include the Following:

8.1.1 Toilets

8.1.2 Washing Facilities (with Hot and Cold running water)

8.1.3 Drinking Water

8.1.4 Changing rooms and lockers

8.1.5 Heating

8.1.6 Rest facilities

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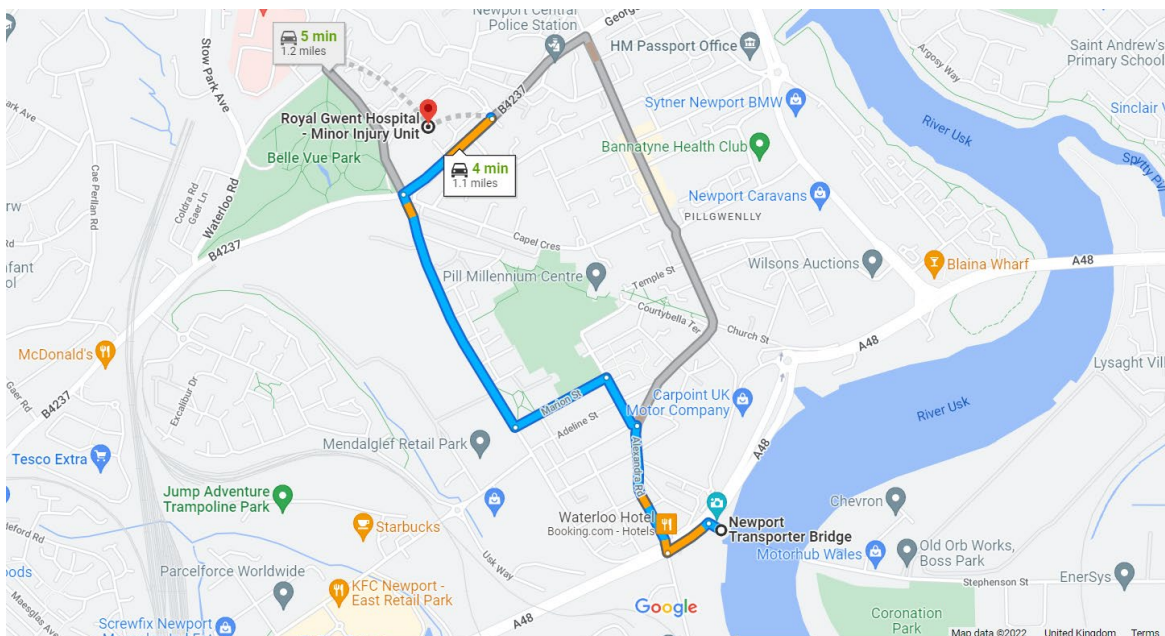
- 8.1.7 Suitable and Secure Drying Facilities
- 8.1.8 Suitable Canteen Facilities to Prepare Hot and Cold Food
- 8.1.9 Suitable Access and Lighting to Facilities

9. First Aid

- 9.1 First Aid Provision will be identified in **John Perkins Construction** induction. Additionally, Refer to the onsite safety notice board for all first aid information.
- 9.2 Any accidents, incidents or Near Miss will be reported to **John Perkins Construction** Nominated Person.
- 9.3 Where required all Accidents will be reported in line with RIDDOR - Reporting of Injuries, Diseases and Dangerous Occurrences Regulations 2013.
- 9.4 All accidents and incidents will be reported to SPUK Management.

10. Emergency Procedures

- 10.1 The Client or **John Perkins Construction** will ensure that the existing site emergency procedures are followed, and that relevant information is given to operatives at time of induction or when changes are made to procedures.
- 10.2 The nearest Hospital is: **Royal Gwent Hospital, Cardiff Rd, Newport, NP20 2UB**



- 10.3 All Emergency Provisions will be established and briefed by **John Perkins Construction** during the Site Induction.
- 10.4 All SPUK Ltd Persons must make themselves aware of all Health and Safety Notice boards and Emergency Signs indicating nearest Assembly Points, First Aid and Fire Points.

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- 10.5 If a member of the team is involved in an accident, in the first instance ensure the operative is safe and receives any first aid treatment, report it to site management and ensure all is recorded in the accident book.
- 10.6 **John Perkins Construction** are to be informed of any emergency as soon as is practicable possible.
- 10.7 SPUK Management to be notified as soon as possible of any incident.

11. Site Security

- 11.1 SPUK will ensure that all Plant and equipment are secured during and at the end of each Shift.
- 11.2 All Plant and Cranes will have keys removed and doors locked when left unattended.
- 11.3 All small tools and equipment will be safely secured in containers to prevent theft or damage.
- 11.4 All Flammable Materials will be secured and Stored correctly to minimise the risk of Fire or Arson.
- 11.5 During Works, SPUK will ensure that exclusion zones are established to prevent any unauthorised access.
- 11.6 SPUK will report all Security Concerns to the relevant persons who shall be nominated in the Site Induction.
- 11.7 **John Perkins Construction** is responsible for Site Security including secured site perimeter.
- 11.8 SPUK Site Foreman / Supervisor to inspect work area before leaving at the end of every shift, ensuring work area left secure. This is to be recorded in daily diary.

12. Proposed Plant & Equipment

Plant/Equipment Type	Qty	Activity (General)
CAT 328D Excavator GBP 219kN/m2	1	Sheet Piling Activities
Movax SG-60 vibratory hammer attachment	1	Sheet Piling Activities
Gas Cage c/w Bottles (2 Oxy and 1 propane)	1	Storage and movement of gas bottles around the work area. Gas bottles are to be stored outside and within a secured bottle cage
Bunded Diesel Bower	1	Fuelling of all SPUK plant.
Fire Extinguishers	1	Two number per hot works permit
Lifting Accessories (Various)	1	General Lifts / Off-loading & Loading plant and equipment, handling and distribution of sheet piles - pitching of sheet piles.
Site toolbox	1	Containing piling accessories, spill kits, fire-fighting equipment
Burning Equipment (Torch,Hoses,Regulators)	1	Flame cutting/Hot works activities
300amp Welding set	1	Welding activities

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12.1 Movax Excavator Specification

CAT 328D LCR EXCAVATOR

Base Machine	CAT 328D LCR
Engine Type	CAT C7
Engine Power	187 kW
Fuel Tank	406 litres
Hydraulic Tank	155 litres
Undercarriage	Fixed
Operating Weight	34.0 tonnes

Vibro Hammer	Movax 8060
Static Moment	6.1 t/m
Frequency	2600/minute
Centrifugal Force	600 kN
Weight without Clamp	2600 kg

DIMENSIONS: CAT 328D LCR EXCAVATOR	
Reach Boom	6,150 mm
Long Stick R3.2CB2	5,200 mm
1 Shipping Height	5,370 mm
2 Shipping Length	9,820 mm
3 Transport Width	
850 mm shoes	5,440 mm
4 Length to Centre of Idler and Sprocket	4,040 mm
5 Track Length	5,020 mm
6 Ground Clearance	510 mm
7 Track Gauge	2,990 mm
8 Tail swing Radius	1,900 mm
9 Cab Height	5,190 mm
10 Counterweight Clearance	1,200 mm

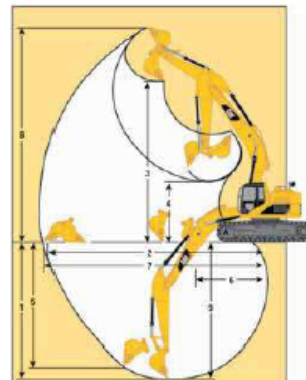


With SL20 Impact Hammer Attachment



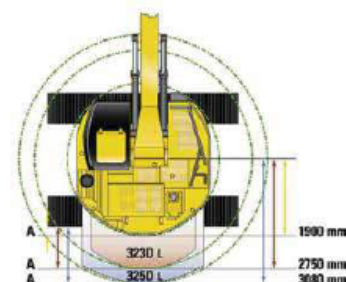
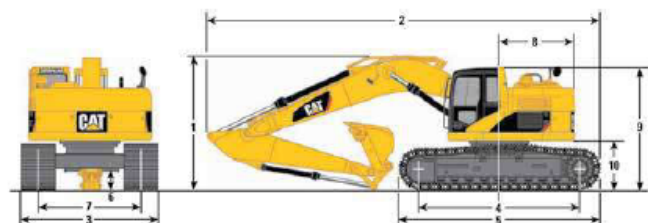
With SG-60 Vibratory Hammer Attachment

WORKING RANGE: BOOM REACH AND RADIUS/OVER HANG



WORKING RANGE REACH BOOM	
Stick Length	mm 5,200
1 Maximum Digging Depth	mm 6,920
2 Maximum Reach at Ground Level	mm 10,560
3 Maximum Loading Height	mm 8,040
4 Minimum Loading Height	mm 2,990
5 Maximum Vertical Wall Digging Depth	mm 6,260
6 Minimum Front Swing Radius	mm 3,400
7 Maximum Reach	mm 10,770
8 Maximum Cutting Height	mm 11,110
9 Max Digging Depth 2500mm Level Bottom	mm 6,760
Bucket HD	m3 1.2
Bucket Force (ISO 6015)	kN 179
Stick Force (ISO 6015)	kN 150

No.	328D LCR
Tail Swing Radius (mm)	1,900
Overhang (mm)	
A with 850 mm shoes	180



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12.2 Movax Attachment Specification

PILE DRIVERS

SG-60

FEATURES

- Designed to match the capabilities of larger excavators and to combine a robust structure with excellent pile handling characteristics.
- Fitted with heavy-duty arms/clamps capable of driving a wide range of piles including sheet piles, H-piles, tubular steel piles and other pile sections.
- High frequency pile driver with fixed eccentric moment.
- Based on the Movax Modular System (MMS™). The unit is always equipped with one of the standard arm/clamp systems and the bottom clamp. Customised arms and clamps are available upon special request.
- Controlled with the MOVAX Control System (MCS™)
- Available with the MOVAX Information Management System (MIMS™)



TECHNICAL DATA

Weight (excl. adapter) *	kg	2550 - 2850
Height	mm	2550
Depth	mm	1210 - 1585
Width	mm	1193
Engine power, min, Tier III / Tier IV	kW	135 / 160
Return pressure, max	bar	5
Pressure setting	bar	350
Frequency	1/min	2300 - 3000
Eccentric moment	kgm	6.1
Centrifugal force, max	kN	600
Ground vibration		Normal
Driving method		Vibration
Swing angle	°	+/- 360
Tilt angle	°	+/- 30

* with standard bottom clamp, exact weight depends on the side arm/clamp system

SUITABLE PILES

TYPES AND DIMENSIONS

Sheet pile	width mm	400-1200
	depth mm	265
Timber pile	mm	Ø 160-420
Tubular pile, tubes *	mm	up to 762
H-beam	size	H100-H500

* up to 1220 mm diameter with modular tube arms and tandem bottom clamp



LENGTH & WEIGHT

8m / 2300kg

12m / 1600kg

16m / 1200kg

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13. Mobilisation / Demobilisation

- 13.1 All required Traffic Management will be established and controlled by **John Perkins Construction**, parked vehicles or any other obstacles at the access to the site to be controlled or prohibited by **John Perkins Construction** so access/egress is unhindered.
- 13.2 The piling plant and crane will be delivered on low loaders using the routes identified under the movement order, this will also dictate delivery/collection time which may be out of hours.
- 13.3 All plant, equipment and sheet piles will be delivered on articulated vehicles which will be unloaded by the site crane.
- 13.4 All delivery vehicles to be fitted with compliant safety handrails, to suit the load being carried.
- 13.5 Access to the site is via *John Perkins site entrance, Off Stevenson St, Newport*.
- 13.6 Loading out will be similar unless site conditions change whereby suitable and sufficient Risk assessments will be undertaken and briefed prior to demobilisation.

14. Materials

- 14.1 **47no EZ19-700** at **12.0m** long in plain uncoated steel
- 14.2 **26no EZ19-700** at **14.0m** long in plain uncoated steel

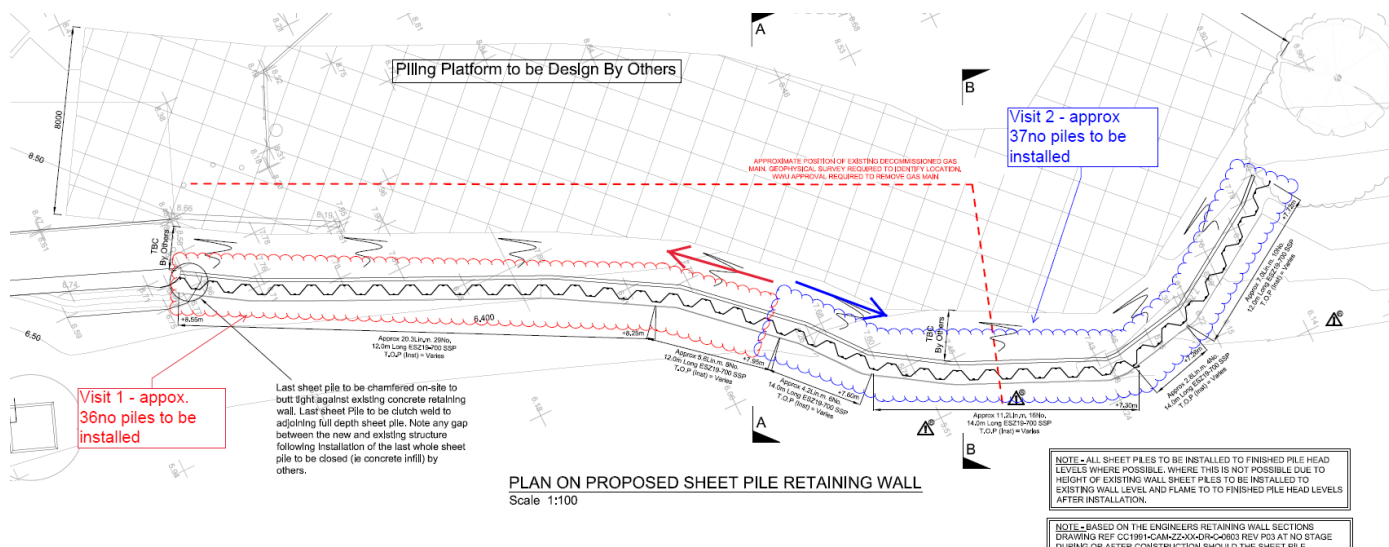
15. Prior to Works Commencing

- 15.1 Prior to the commencement of any works on site, the following will be in place:
 - 15.1.1 A valid lift plan has been developed and signed off by the Appointed Person.
 - 15.1.2 A Permit to Dig / Break Ground verifying that a utility drawing desk study has been completed and sufficient probing and CAT scanning has been carried out to ensure services are not present beneath the Piling Platform and Pile Lines. All carried out by **John Perkins Construction**
 - 15.1.3 A Daily Hot Works Permit which must include 60min fire watch.
 - 15.1.4 A Certificate verifying the Platform design has been completed to withstand the loading of the specific plant use on the site.
 - 15.1.5 Any overhead hazards / structures / services have been identified and appropriate safety measures implemented. i.e goal posts, warning signage, exclusion zones.

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16. Sequence of Works

- 16.1 **Visit 1** – Install **37no EZ19-700 at 12.0m** piles as per construction issue drawing below
- 16.1.1 Mobilisation of piling plant/equipment. Commission excavator with Movax on piling platform. Complete site inductions with John Perkins Construction.
- 16.1.1.1 **All permits/certification to in place prior to sheet pile installation. HOLD POINT*
- 16.1.2 Commence installation of sheet piles from the agreed position towards the existing concrete retaining wall.
- 16.1.2.1 **Existing commissioned/decommissioned services to be fully exposed prior to sheet pile installation. HOLD POINT*
- 16.1.3 Fabricate 'chamfered' last pile to butt tight against existing concrete wall. Weld clutch to adjoining full depth pile.
- 16.1.3.1 **All sheet piles to be installed to finished pile head level where possible. Where this is not possible due to height of existing wall, sheet piles to be installed to existing wall level and flame cut to finished pile head levels after installation.*
- 16.1.4 Demobilise piling plant/equipment
- 16.2 **Visit 2** – Install **26no EZ19-700 at 14.0m** and **10no EZ19-700 at 12.0m (36no Total)**
- 16.2.1 Mobilisation of piling plant/equipment. Commission excavator with Movax on piling platform. Complete site inductions with John Perkins Construction.
- 16.2.1.1 **All permits/certification to in place prior to sheet pile installation. HOLD POINT*
- 16.2.2 Commence pile installation starting from visit 1 piles continuing towards end of sheet pile wall
- 16.2.2.1 **All sheet piles to be installed to finished pile head level where possible. Where this is not possible due to height of existing wall, sheet piles to be installed to existing wall level and flame cut to finished pile head levels after installation.*
- 16.2.3 Once all piles installed, 50mm weepholes to flame cut at 1.0m above GL at 2.8m c/c.
- 16.2.4 Demobilise piling plant/equipment.



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Title:**the vibratory installation of sheet piles using an excavator
mounted 'Movax' to form permanent boundary retaining wall****16.3 Pitching and driving of sheet piles using a Cat 328D Excavator (or similar) c/w Movax SG-60 Side Grip Vibratory Piling Hammer.**

16.3.1 The 'Movax' type piling hammer which will be used for these works is equipped with two jaw clamps, which are utilised as follows:

16.3.1.1 Two hydraulically operated arms are included, which act as a 'side-clamping' device whilst the pile is driven using the vibratory hammer.

16.3.1.2 A 'bottom' (lower) piling clamp is then used to drive the pile directly from above.

16.3.1.3 The piling hammer is fitted with 360 degree controls and is 'gyroscopic' which enables the vibratory hammer to drive piles gripped onto the side and from above

16.3.1.4 The sequence for pile installation works will be as follows: -

16.3.1.5 The Excavator will be mobilised to the proposed work location complete with the 'Movax' SG-60 Vibratory Piling Hammer fitted/commissioned.

16.3.1.6 Piles will be laid out by SPUK in order that it is able to comfortably slew into a position where each pile can be clamped for the side grip clamps to be used to initially pitch and drive each pair of piles.

16.3.1.7 The side clamping arms/device will then be clamped around the sheet pile. Once clamped, the boom of the excavator will be lifted vertically, and the hammer rotated so that the sheet pile is stood vertically.

16.3.1.8 A pipe laser is used as an aid to ensure verticality during installation the laser will be positioned over the engineers setting out pegs and will be set on the inside face of the pile line.

16.3.1.9 The pile will then be positioned true to the required line and partially driven using the side grip clamp to at least half of the required pile length.

16.3.1.10 The side grip clamps will then be released, the hammer lifted upwards using the boom of the excavator and the piling hammer will then be rotated so that the lower/bottom clamp of the piling hammer can be lowered over the top of the pile.

16.3.1.11 Once the bottom clamp is secured, again the vibratory hammer will be used to drive the sheet pile to the required finished head level or refusal, the clamp will then be released and the piling hammer withdrawn from the top of the pile.

16.3.1.12 This operation will be repeated for all subsequent piles.

NOTE

- ❖ ***Due to the unique safety features of the 'Movax' hammer, the risk of a pile being dropped during pitching or driving with the side/bottom clamp is avoided as non-return valves are fitted on the hydraulic pipes feeding the vibratory hammer from the base machine.***
- ❖ ***In the event that hydraulic power is cut, these non-return valves will maintain pressure to the clamps holding the pile.***

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- ❖ *The above process is repeated until all the piles have been pitched and driven to level or reach practical refusal with the Movax.*

16.4 Vibratory Installation Practical Refusal

16.4.1 During vibratory sheet pile installation practical refusal may occur, this is defined as when the head of the pile starts to deform or when the rate of driving exceeds the following limits for a continuous period of 5 minutes:

- (i) Single 'Z' piles, less than 100mm of pile penetration per minute

If practical refusal is encountered, this will require witnessing by John Perkins Construction Ltd and a clear instruction issued on how to proceed.

HOLD POINT – If refusal is encountered due to an obstruction in the sheet pile line, this will require witnessing by the Client, and a clear instruction issued on how to proceed. The SPUK Contracts Manager must be informed of the obstruction at this stage and ensure that the correct procedure is followed by the site team.

16.4.2 Should obstructions or early refusal be encountered in the sheet pile line then the obstructed/refused sheet pile should be extracted until the rig can lift the pile without the use of vibration.

16.4.3 The rig should then be detached from the sheet pile and slewed out of the way.

16.4.4 An operative wearing the appropriate safety harness and PPE working from a MEWP (or from ground level if the head of the pile is safely accessible) will then access the top of the sheet pile to attach the Ground Release Piling Shackle suspended from the crane to the top of the sheet pile.

16.4.5 Once attached, the crane will lift the pile free of the ground and the clutch of the previously installed pile and lay the pile on the ground.

16.4.6 If the above procedure cannot be followed, then the obstructed pile should be fully extracted by the rig and re-driven further back along the pile line (adjacent to previously driven piles).

16.4.7 The pile must be driven at least 2 thirds of its length before the rig is released from the pile.

16.4.8 Once the obstruction has been removed from the pile line by the client the pile can be extracted and reinstalled in the correct location.

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16.5 Flame Cutting

16.5.1 Flame cutting will be carried out by the operatives who are trained and authorised as competent.

16.5.2 A 'Hot Works' permit should be issued by the John Turner Construction Ltd before starting work.

16.5.3 Where mobile platform (MEWP) is to be used, ensure that John Turner Construction Ltd has prepared the working platform to the correct standard prior to commencing work.

16.5.4 The following indicative procedure should be adopted:

- In the immediate work area, and behind the steel work to be cut (or worked on), ensure that the area is cleared of all loose combustible material.
- Cover other combustible material with sand or other non-combustible material e.g., a fire blanket.
- Examine equipment for damage and leaks.
- Make sure flash back arrestors are fitted.
- Use correct nozzle for the type of gas and work being done.
- Have two fire extinguishers at the immediate work area.
- Wear the correct PPE including goggles and gloves, cover skin.
- Wear the correct RPE minimum of FFP3 EN149
- Keep cylinders secure and upright.
- Cylinders to be stored in bottle cages.
- Do not work in poorly ventilated areas.
- Use scaffold towers or podium steps when the cut off level is between 1.0m and 2.0m from ground level.
- Use a scissor lift/telescopic boom when cut off level exceeds 2.0m from ground level.
- Use welding screens where other workers or third parties may be susceptible to 'Flash'.
- Ensure welding leads and earth clamps are in good condition. Always check before use.
- Drip trays should be placed under welding sets.
- A fire safety check of the work area must be carried out approximately 60 minutes after the completion of each period of work. Immediate steps must be taken to extinguish any smouldering material or flames discovered.

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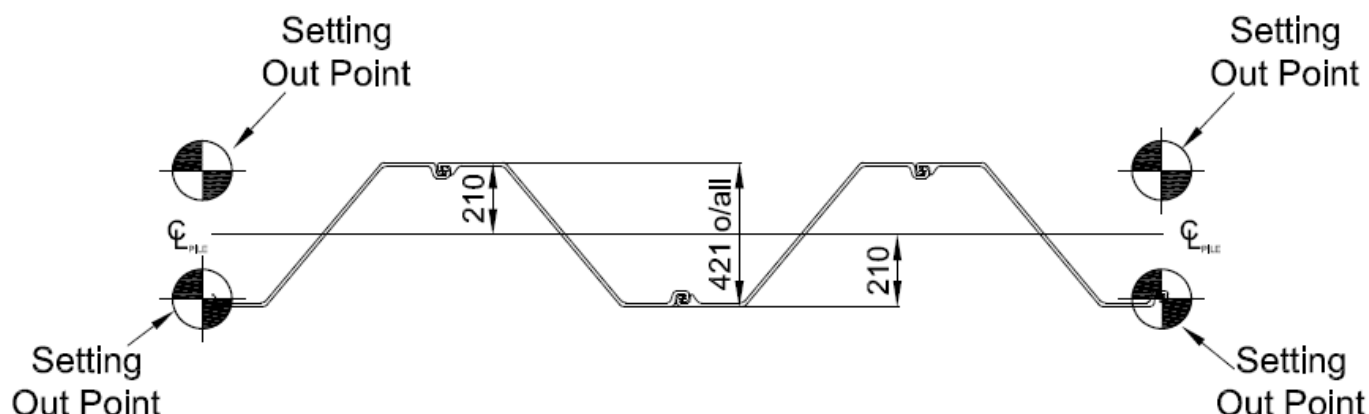
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17. Attendance to be provided by John Perkins Construction

- 17.1 Protection of services above and below ground
- 17.2 Protection of existing hard standing areas, carriageways, footpaths etc to allow access to and from site including throughout site.
- 17.3 Provision, testing and construction of the working platform for the Plant specified above to meet advised Ground Bearing Pressures.
- 17.4 General site lighting/Safety Lighting. To ensure the site is suitably and adequately lit during the works.
- 17.5 Water supply to working area(s).
- 17.6 All setting out and levelling, including checking of installed piles. Profile boards to be provided for set out as initial pile position below platform/ground level.



ESZ19-700 SETTING OUT

- 17.7 Welfare facilities including Toilets and Washing Facilities, Mess Facilities and Drying Rooms.
- 17.8 Pre-trenching of pile line to remove any obstructions if deemed necessary.
- 17.9 In the event of any obstructions being encountered during pile installation an attendant excavator shall be made available to remove the said obstruction and re-in state and compact piling platform. The piling platform may require re-testing/certifying if it has been disturbed.
- 17.10 Noise and vibration monitoring are the responsibility of **John Perkins Construction** as and when deemed necessary.
- 17.11 Dewatering of lead trenches and any groundwater on site to ensure safe pile installation
- 17.12 Traffic Management, all TM associated with entering site to be provided by **John Perkins Construction**. SPUK to manage all delivery vehicles etc within the site boundary.

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18. Site Specific Risk Assessments

- 18.1 All risk assessments have been undertaken for all SPUK activities associated with this project and are included in addition to this Method Statement.

19. Health & Safety Management

- 19.1 Prior to SPUK operations commencing all SPUK personnel are to attend the site specific safety induction.
- 19.2 The Contracts Manager/Supervisor will carry out a Method Statement/Lift Plan briefing to all personnel carrying out works on the site on the day the work commences and whenever new personnel arrive on site. All Persons involved in the Works Must sign the Method Statement to accept and confirm they fully understand the Content, Hazards, Risks and Control Measures contained.
- 19.3 SPUK will ensure that all persons carrying out specific tasks are deemed competent and have the relevant qualifications and appropriate licences FPS/CPCS/CSCS/PASMA/IPAF cards for the specific Plant or Equipment and duties performed. All operatives are experienced in this type of work and have received training to perform their duties safely.
- 19.4 All plant and equipment will comply with PUWER 1998 and LOLER 1998 (where relevant).
- 19.5 On SPUK plant:
- Cab steps and handles are painted high visibility yellow ensuring 3 points of contact is always achievable when accessing & egressing the cab (Use manufacturers steps and handles)
 - Safe access for refuelling, maintenance and to any place where accessories are stored
 - Where access is required at height; suitable handrails must be fitted
- 19.6 Specifically for crawler cranes: Handrails must be fitted to running boards and crane upper structure
- 19.7 Any routine maintenance, re-fuelling and potential repairs are all accessed using the manufactured access points, podium steps or a MEWP.
- 19.8 relevant test certificates will be available including Sheet Piling UK Ltd plant inspection forms – **SPUK Supervisor is to carry out LOLER and PUWER checks prior to EACH use of any equipment or lifting accessories**
- 19.9 All lifting equipment is inspected on a six-monthly basis and colour coded. Details of the colour coding procedure are always available on site. – **SPUK Supervisor is to carry out LOLER and PUWER visual checks prior to equipment being used**
- 19.10 All SPUK staff will wear mandatory PPE in accordance with Site Requirements. Additional PPE will be available free of charge and be worn by SPUK staff in accordance with the requirements of Risk, COSHH and Noise assessments.
- 19.11 COSHH Assessments are available for those hazardous substances taken to site. All Sheet Piling UK Ltd personnel will be informed and instructed as to the precautions necessary when handling these substances.
- 19.12 The sheet piling equipment used has been monitored on construction sites. Hearing Protection will be worn where Risk Assessment highlights additional control measure are required such as anything above the Upper Exposure Level 85 dB (A-weighted); Hearing protection is

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MANDATORY for all operatives on site. In addition, a 20m exclusion zone is established whereby any other person wishing to enter the immediate site must be wearing the correct hearing protection.

- 19.13 The Client is responsible for establish Safe access to Work areas and Traffic Movements. SPUK will follow all Site rules at all times.
- 19.14 The Piling Platform will be designed, established and maintained by the Client. SPUK will NOT commence works until a suitable Certificate of Handover for the Piling Platform has been issued by the Client.
- 19.15 SPUK will report ALL defects associated with the Piling Platform to site management, so that any remedial works and maintenance can be undertaken.
- 19.16 SPUK will undertake periodic Site Safety Inspections/Audits and will be available to accompany Joint inspections as required
- 19.17 SPUK will have utilise the following PPE, Overalls – EN ISO 11612, Hard Hats – BS EN 397, Boots – EN ISO 20345, Burning / Welding Gloves – EN 12477, Handling Gloves – CE CAT 1 and EN 388 Suitable eye protection when cutting and welding. Suitable RPE (FFP3 Minimum) when welding duration is under 1 hour, and flame cutting, when welding duration is over 1 hour air fed RPE must be worn in accordance with the Risk Assessments
- 19.18 There will be no manual handling of plant and equipment, all lifting will be carried out by the attendant Crawler Crane in accordance with the Lift Plan.

20. Maintenance & Repair of Plant & Equipment

- 20.1 In the event of plant or equipment requiring maintenance or repair, access will be made via the manufacturers access points, podium step or MEWP. If there is any need for hot works this will be done under a permit to work issued by the client, the RAMS submitted and approved for the project will be followed to cover the hot work that needs to be undertaken, if the risk assessments are insufficient a Dynamic Risk Assessment will be completed, recorded and the work planned before being undertaken.



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21. Addendum

21.1 Any addendum or changes to the original proposed method of work must be entered into the addendum table below, with full details of any updated or changed method of works. Any changes must be signed off by the author and a copy issued to **John Perkins Construction**.

[illegible]



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22.1 All personnel, involved with this work activity must be briefed, by the Contracts Manager/Supervisor or Piling Foreman about the method of work to be implemented, the potential risks involved and the control measures to eliminate and or reduce those risks.

22.2 All personnel to sign below to confirm the Method Statement & Risk Assessment Briefing has taken place and the method of work is understood. If the method of work is revised a further Method Statement Briefing must be carried out.

[illegible]

				METHOD STATEMENT	
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Dynamic Risk Assessments:

How to carry out a dynamic risk assessment.

Carrying out a dynamic risk assessment is a practice all operative should be encouraged to perform. In essence, performing a dynamic risk assessment is the practice of conducting an on-the-spot risk assessment that responds to developing situations outside the current RAMS.

To carry out a dynamic risk assessment, an individual should:

Identify the risk. The supervisor or operative should first be able to spot and acknowledge a source of risk not covered in the current active paperwork. This might be a piece of equipment being found faulty, changes in weather conditions, changes in ground conditions or something as simple as having the right lifting accessories. Identifying risk dynamically is extremely important - workers should be attuned to the situation and be able to identify risk as it occurs.

Assess the risk. Workers should then measure the risk of the hazard that falls outside the current risk assessments. Is the risk large enough to merit further consideration or immediate action? What is the likelihood of the risk happening? What is the severity of the risk should something happen that wasn't planned?

Consider the tools they have to mitigate the risk. Can a worker safely continue with a task, and do they have the controls or tools they need to prevent or minimise risk?

Consider whether it is safe to proceed and either take the necessary steps to make a task safe or delay the task until it can be made safe, liaising with managers, supervisors and colleagues if possible.

If the dynamic risk assessment carried out has found risk, and you have the means necessary to reduce that risk to safe levels, you should do so. This might mean calling a member of the management team or other supervisors for guidance and requesting additional equipment.

One of the other purposes of a dynamic risk assessment is to highlight if a situation is too dangerous to proceed and allow operational operatives to make an informed judgement call. This might mean standing down or delaying work until safe equipment is sourced.

Remember that even if working conditions have been assessed for risk prior to the work being carried out, this might not be enough to protect operatives in dynamic, changing conditions. A dynamic risk assessment allows supervisors and operatives to react to developing situations that are not detailed in the current RAMS and work safely at all times.

Dynamic risk assessments conducted by employees need to be recorded so any findings or insights discovered as a result of a dynamic risk assessment can be communicated back to the team and other operative. The lessons learned from a dynamic risk assessment can be used for regular, recorded risk assessments and to develop up to date procedures and policy.

Every incident and risk assessment is an opportunity to learn and improve: dynamic risk assessments are an extension of this

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Site:

Location:

Ref:

C

Description of Work:

Persons Affected	Yes	No	Hazard Type	Yes	No
Employees			Physical Injury		
Other Workers			Health Hazard (e.g. Harmful Substance)		
Public			Biological (e.g. Leptospirosis)		
			Natural (e.g. Weather)		

Comments:

Hazard Category (x) as Appropriate

Hazard Effects/Causes (x) as Appropriate

Contact With	A	Fire	R	Poor Visibility
1 Moving Machinery/Plant	B	Explosion	S	Manual Handling
2 Moving Materials	C	Burns	T	Lone working
3 Moving Vehicles	D	Falls from Height	U	Remote Working
4 Fixed Machinery	E	Slips, Trips & Falls	V	Confined Spaces
Electrical	F	Pressurised Systems	W	Restricted Access
5 Shock	G	Vibration	X	Crush/Trapping
6 Burns	H	Noise	Y	Unstable Ground
7 Explosion	I	Inhalation	Z	Unstable Plant
Radiation	J	Absorption	A1	Sharp Objects
8 Ultraviolet	K	Skin contact	B1	Acts of Violence
9 Ionising	L	Vermis	C1	Power Tools
10 Lasers	M	Particles	D1	Drowning
Working on/near water	N	Heat	E1	
11 River/Canal/Lake/Pond	O	Cold	F1	
12 Fast Flowing	P	Wet	G1	
13 Tidal	Q	Winds	H1	

Comments:

Ref	Control	In Place (✓)/(x)	Ref	Control	In Place (✓)/(x)	Ref	Control	In Place (✓)/(x)
A	Trained Operative		J	Method Statement		S	Security	
B	Guards		K	Permit System		T	Communication	
C	PPE		L	Information		U		
D	Barriers		M	Instructions		V		
E	Fencing		N	Supervision		W		
F	Signage		O	Lighting		X		
G	Test Cert		P	Housekeeping		Y		
H	Maintenance		Q	Welfare		Z		
I	Procedures		R	Rollover Protection		A1		

Ref	Any Other Specific Controls Measures Required/Comments	In Place (✓)/(x)

Actions Register

Ref	Actions Required	Date Implemented	Initial

RISK EVALUATION

BEFORE CONTROL MEASURES IN PLACE (✓)

AFTER CONTROL MEASURES IN PLACE (✓)

HIGH	MEDIUM	LOW	HIGH	MEDIUM	LOW
Assessed By	Date	Approved By	Date	Review Period	
Print Signature		Print Signature			

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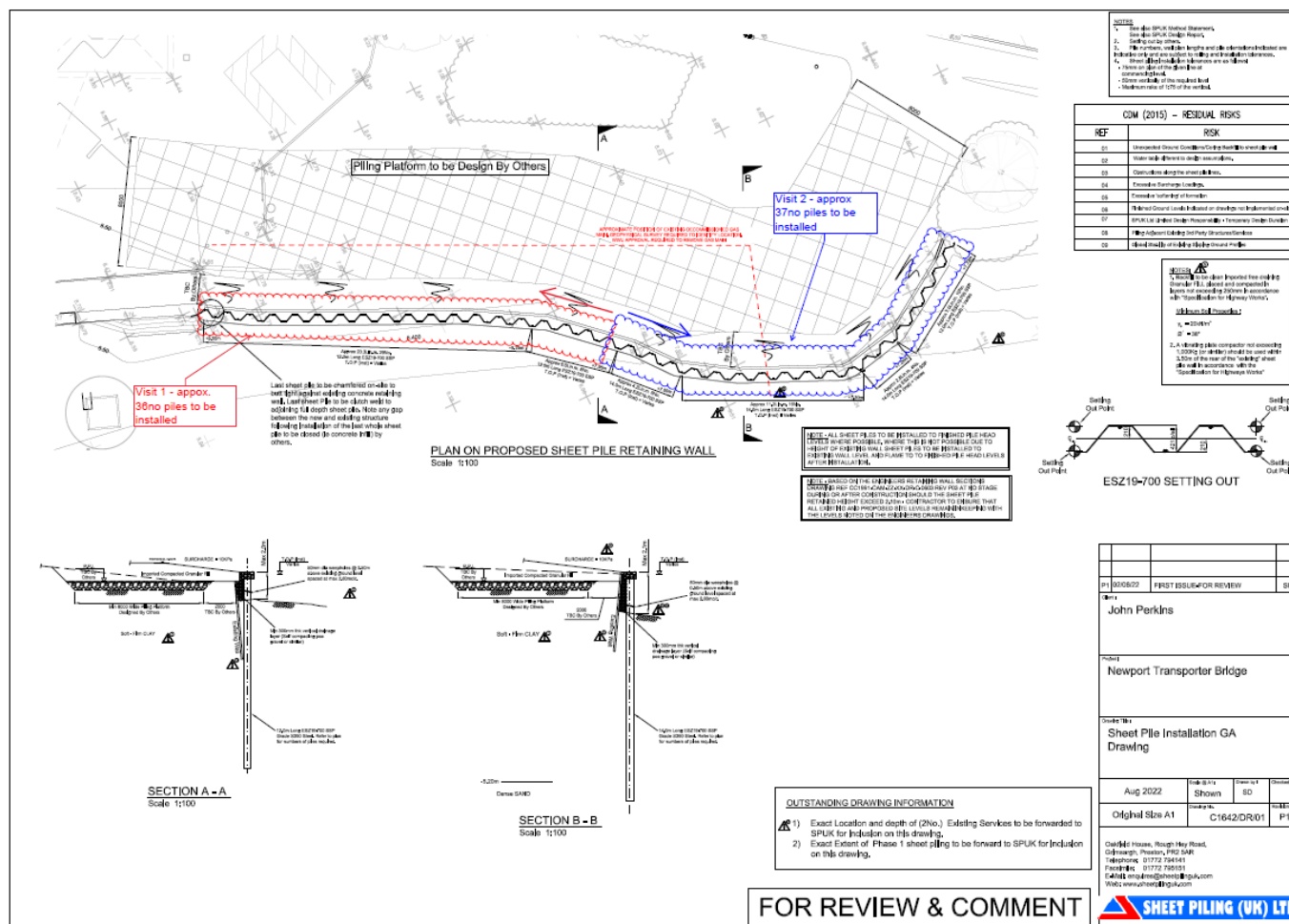
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23. Appendix A -Enabling Sketch and Details of Working Sequence

23.1 Piling Platform requirements

- 23.1.1 To be constructed as per drawing below. A level platform 8.0m in width, running the full length of proposed sheet pile wall with approx. 5.0m 'run-off' at either end.
- 23.1.2 Max bearing pressure of piling rig = 219KN/m2
- 23.1.3 Existing concrete steps and any other structures to be removed
- 23.1.4 Handrail attached to top of existing wall to be removed prior to sheet pile installation.



24. Appendix D. Covid-19.

SPUK will follow the government guidelines and follow the clients instructions

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25. Appendix B. Guidance on Piling Platform Requirements

To be read in conjunction with [SPUK Tracked Plant Technical Specifications Brochure](#).

25.1 General Introduction

- 25.1.1 This information is intended for use by designers and engineers considering the piling platform requirements for a project utilising Sheet Piling (UK) Ltd equipment and it only applies to ground supported working platforms for tracked plant construction on granular material.
- 25.1.2 The information is based upon details supplied by the plant manufacturers and Sheet Piling (UK) Ltd own experiences of the plant performance.
- 25.1.3 To produce the bearing pressures an analysis has been conducted in accordance with the agreed procedures of the FPS and cover the typical working envelope within which piling plant is operated. Further analysis should be undertaken when operating equipment outside of this envelope and when the situation requires different loads or constraints from those noted within [SPUK Tracked Plant Technical Specifications Brochure](#).
- 25.1.4 A piling platform designer should consider any imposed loading by other plant, the ground conditions, the effects of weather, platform deterioration with time, soft spots and the platform maintenance regime.
- 25.1.5 In accordance with the BRE guidance document (published June 2004) on Design, Installation and Maintenance of Working Platforms the loads for each rig have been analysed and are presented for the two load cases of Case 1 and Case 2.
- 25.1.6 Case 1 loading applies to the situation when the rig or crane operator is unlikely to be able to aid recovery from an imminent platform failure.
- 25.1.7 Operations in which this type of loading condition applies could include standing, travelling and handling.
- 25.1.8 Case 2 loading applies to the situation when the rig or crane operator can control the load safely, for example by releasing the line load, or by reducing power, to aid recovery from an imminent platform failure.
- 25.1.9 Operations in which this type of loading condition applies could include installing/extracting a sheet pile, and/or drilling/extracting an auger. Consequently, a lower factor of safety can be adopted for this loading case.
- 25.1.10 These operations include sheet pile installation, extraction and pre-augering (where applicable).

25.2 Installation

- 25.2.1 The Sheet Piling (UK) Ltd Platform Certificate is mandatory for all sites where a piling rig or attendant plant operates. It must be signed by an authorised representative of the Principal Contractor. This merely confirms that the legal duties required under CDM have been carried out.
- 25.2.2 The working platform provides access for all piling plant, ancillary plant, deliveries, subcontractors and personnel associated with the piling operations. Properly designed and

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installed, the working platform could also provide suitable and safe access for following trades for the whole project.

25.2.3 One of the main causes of rig instability is a result of poor definition of the edge of the working platform. In general the working platform should be clearing defined relative to the proposed pile line to suit the method of installation and/or extraction. This ensures sufficient safe working area for the piling personnel and attendance plant.

25.2.4 Where access ramps are used to move between working levels these must be of sufficient gradient and width to allow the piling plant to move safely within the stability constraints of the machine. Ramps must be in a straight line between working areas. Piling rigs and cranes cannot change direction on ramps. Where a change in direction is required, this must be on a flat level platform.

25.3 Maintenance, Repair and Reinstatement

25.3.1 The working platform must be kept free draining. Water and arisings which are allowed to build up on the working platform can hide recently constructed piles, trip hazards, unstable ground and excavations.

25.3.2 Obstructions encountered during the piling process will generally require excavation to remove them. This can create a 'soft spot' which can result in the rig overturning. It is essential that any excavations made in the working platform are reinstated to the designed standard, including any reinforcement and separation filter/membrane.

25.3.3 Inspection of the platform should be an ongoing process throughout the design life of the platform. Any damaged areas must be reinstated to the designed standard.

PLANT LOADINGS

PILING RIG & CRAWLER CRANE BEARING PRESSURES

Plant Manufacturer & Model	Track Pad Width (m)	Track Bearing Length (m)	Working Weight (Tie)	Max Crowd Force (kN)	Max Extraction Force (kN)	Case 1 Loading Standing or Travelling		Case 1 Loading Handling		Case 2 Loading Installation		Case 2 Loading Extraction [1]		Notes
						Max Rectangular Bearing Pressure (kN/m²)	Equivalent Track Bearing Length (m)	Max Rectangular Bearing Pressure (kN/m²)	Equivalent Track Bearing Length (m)	Max Rectangular Bearing Pressure (kN/m²)	Equivalent Track Bearing Length (m)	Max Rectangular Bearing Pressure (kN/m²)	Equivalent Track Bearing Length (m)	
Sheet Piling Rigs														
ABI TM 13/16 SL	0.60	3.85	50	90	175	200	3.08	N/A	N/A	204	2.52	291	2.50	Maximum Working Radius = 5.79m Maximum Crowd Force = 98kN Maximum Extraction Force = 108kN
ABI TM 14/17 SL	0.60	3.85	52	90	175	200	3.10	N/A	N/A	204	2.52	291	2.50	Maximum Working Radius = 5.79m Maximum Crowd Force = 98kN Maximum Extraction Force = 108kN
Bauer RTG 16	0.70	4.15	52	140	200	231	2.15	N/A	N/A	124	3.11	355	1.39	Maximum Working Radius = 5.29m Maximum Crowd Force = 60kN Maximum Extraction Force = 80kN
Bauer RTG 19	0.70	4.15	60	140	200	243	2.38	N/A	N/A	147	3.19	355	1.68	Maximum Working Radius = 5.29m Maximum Crowd Force = 60kN Maximum Extraction Force = 80kN
Bauer RTG 21	0.70	4.42	78	140	260	343	2.25	N/A	N/A	222	2.91	372	1.85	Maximum Working Radius = 5.91m Maximum Crowd Force = 60kN Maximum Extraction Force = 20kN
ABI TM 18/22 HD	0.70	4.80	82	120	200	203	3.49	N/A	N/A	215	2.52	313	2.64	Maximum Working Radius = 5.70m Maximum Crowd Force = 120kN Maximum Extraction Force = 200kN
ABI TM 20 LR + Tracks out. + Maximum reach.	0.90	4.40	84	100	180	260	2.38	N/A	N/A	199	2.36	315	1.87	Maximum Working Radius = 8.04m Maximum Crowd Force = 120kN Maximum Extraction Force = 120kN
ABI TM 20 LR + Tracks In. + Maximum reach.	0.90	4.40	84	120	120	267	2.38	N/A	N/A	205	2.36	324	2.08	Maximum Working Radius = 8.04m Maximum Crowd Force = 120kN Maximum Extraction Force = 120kN
ABI TM 12/15 H Long Reach	0.70	4.51	62	90	100	194	2.77	N/A	N/A	121	3.56	320	1.70	Maximum Working Radius = 8.08m Maximum Crowd Force = 72kN Maximum Extraction Force = 80kN Handling of Sheet Pile is NOT Permitted
CAT 328D LCR Excavator Piling Rig	0.85	4.05	34	80	80	114	2.89	N/A	N/A	219	1.01	191	1.81	
DOOSAN DX255 Excavator Piling Rig	0.80	3.85	28	60	60	113	2.38	N/A	N/A	185	1.05	152	1.96	
Crawler Cranes														
Sennebogen 643E	0.70	4.40	42	N/A	N/A	121	2.94	257	3.28	-	-	-	-	Maximum Radius / Maximum Load Minimum Radius / Maximum Load
Sennebogen 653E	0.70	4.40	50	N/A	N/A	94	3.82	241	1.92	-	-	-	-	Maximum Radius / Maximum Load Minimum Radius / Maximum Load
Sennebogen 673E	0.70	5.10	70	N/A	N/A	184	2.66	291	2.46	-	-	-	-	Maximum Radius / Maximum Load Minimum Radius / Maximum Load
NCK Nova 50	0.85	4.50	54	N/A	N/A	124	4.50	235	2.10	-	-	-	-	Maximum Radius / Maximum Load Minimum Radius / Maximum Load

1. Extraction load case applicable to both pile extraction and pre-augering activities.

2. Maximum crowd and extraction force only possible with reduced reach.

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26. Appendix C. Example Working Platform Certificate.



WORKING PLATFORM CERTIFICATE

Project Name	
Work area covered by this certificate	

PART 1: WORKING PLATFORM DESIGN

Equipment to be used on site	
Maximum Plant Loading	

(Note: BR470 Working Platforms for Tracked Plant: Good practice guide to the design, installation, maintenance and report of ground supported platforms is available for HS BRE Press - Tel: 01344 328 038).

Designer Name		
Designer Organisation		
Contact Telephone		
Is Testing Specified?	No:	Yes: (give details)

PART 2: VERIFICATION BY PRINCIPAL CONTRACTOR

The working platform detailed above has been designed, installed to the design and, if specified, tested to safely support the equipment detailed in Part 1 above. The limits of the platform have been clearly identified on site as necessary.

This working platform will be **REGULARLY INSPECTED, MAINTAINED, MODIFIED, REPAIRED** and **REINSTATED** to the as-designed condition after any excavation or damage, throughout the period when the equipment is on the site. A completed copy of this certificate signed by an authorised person from the Principal Contractor shall be given to each user of the working platform prior to commencement of any works on site.

Name & Position		Date	
Organisation		Signature	

Sheet Piling (UK) Ltd are committed to develop this initiative and supports the principle of reducing accidents by the certification of properly designed prepared and maintained working platforms.