Land Opposite 83-87 Vine Street,

Gorton,

Manchester.

M18 8SR.

Planning Application No – 128864/OO/2020.

Response to Planning Condition 37.

Prior to the commencement of development, a method statement and risk assessment in relation to works in proximity to the boundary with the railway shall be submitted to and approved in writing by the City Council as Local Planning Authority. The development shall be implemented in accordance with the approved method statement and risk assessment.

The Northern boundary of this site runs parallel to the Gorton to Fairfield section of Network Rails Manchester-Glossop line. The construction zone of the site is set back from the physical boundary by approximately 11.5m and up a steep, densely wooded embankment. Dialogue is ongoing with Network Rail in order to set up a Basic Asset Protection Agreement (BAPA) which will cover an agreed safe system of work in order to protect the rail infrastructure, this will include:

<u>Sheet Piling Works.</u>

A slip circle analysis has been carried out that has determined that due to the nature of the fill present on the site a retaining structure is required to be installed to the Northern side of the site to reinforce the banking prior to any other works being carried out. The solution to this retaining structure is to form a continuous permanent sheet piling structure.

The loading and offering into position of the piles will be carried out by a crane which will be situated outside of the slip influence zone as per the appended method statement/risk assessment.

When the sheet piling is complete the slope towards the rail track will be deemed to be secured to allow follow on works to progress.

Cut and fill/foundation excavation operations.

During any earth moving and operations a 360^{o} excavator will be used but it will be banksman controlled to ensure that it does not track within 3m of the sheet piling, operations within the 3m zone will be carried out with the extended boom of the machine.

Piled foundations.

To minimise the risk of the piling rig toppling over the embankment, the piles closest to the Northern boundary will be formed with the piling rig facing the boundary rather than running parallel to it.

Boundary fencing.

A permanent fence is to be erected inboard of the sheet piles, this work will be carried out using hand tools and exclusively from the site side.

Works to houses during construction.

All materials for the construction of the houses will be loaded up from the front of the properties with a telehandler operating from a hardstanding. Any materials on the scaffold that have the potential to be blown off by wind will be weighted down to reduce this risk. Rubbish/packaging will be regularly collected and brought off the scaffold for disposal into site skips. If required by Network Rail we will install debris netting to the Northern elevation of the scaffold as an additional safeguard to prevent debris being blown onto the railway.

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METHOD STATEMENT

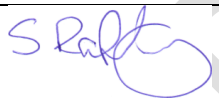
TITLE: Conventional Sheet Piling

LOCATION: Vine Street Gorton

PROJECT DETAILS: Sheet Piled Retaining Wall

DOCUMENT REFERENCE: ESS/E0026/RAMS/001/Rev 1

COMMENCEMENT DATE: TBC

Compiled by: Scott Raftry					
Name:	S Raftry	**Title**	Managing Director	**Date:**	12th May 2023
Signature:					

Approved by: (Client or designated representative)					
Name:		**Title**		**Date:**	
Signature:					

THE CONTENTS OF THIS METHOD STATEMENT ARE TO BE BRIEFED TO ALL INVOLVED AND RECORDED ON A TOOL BOX TALK RECORD FORM

For Review

Safety Method Statement Number 01

Scope of Works:

Installation 11m long ZZ piles using conventional piling techniques. Also updated for the rigging of the AGD crawler crane.

Personnel:

Typical gang resource will consist of:

1 No Operations Director – Paul Hesketh
1 No Piling Supervisor – Craigh Wild
1No Crane Operator – TBA
2No Welders – TBA
2No Pile Hands - TBA
1No Attendant Excavator Operator –Client
1No AGD fitter for rigging of crane

The attached Method Statement and Risk Assessment has been read, and understood, by the ESS (CE) Ltd piling crew as signed and listed below.

Name	Signed	Company	Date

Programme of Operations and Potential Interface with Others.

Site Programme and allotted time

- Works are due to commence summer 2023. The works are anticipated to be completed within a seven week period.

Construction Phase Health & Safety Plan

- The H&S plan will be a live document and continuously developed as the works progress by the client

Attendance of Co-ordination meetings

- The works will be supervised by ESS (CE) Ltd Supervisor, co-ordination meetings will be attended as required by the client.

Risk Assessments

- Risk assessments will be undertaken prior to any activity commencing on site. All risk assessments will be reviewed periodically as the works progress and immediately following any incident on site.

Inductions and Tool Box/Safety Awareness Talks

- Inductions and toolbox talks will be given by the Site Foreman. All persons will require an induction before entering into work areas.

Traffic Management

- Adequate banksman and traffic management during unloading purposes and access into and out of working areas.
- Unlikely to be required during works, but if required, client will provide segregation from other sub-contractors, visitors.
- Main Contractor to assist with TM and any closures required for the delivery of plant.

Security

- Security for all plant and equipment is to be the responsibility of the main contractor.

Environmental Conditions

Ground conditions

- Ground conditions are expected to be made ground overlying natural virgin material. See Borehole Logs for more information. The ground and existing walls are to be removed prior to any piling works commencing on site, this will be carried out by Rhodar.

Existing services overhead and underground

- All areas are to be CAT scanned & STATS drawings to be examined prior to commencement of works by main contractor, covered in main contractors permit to break ground.

Adjacent structures including buildings, roads, railways and waterways

- Batters within the zone of influence for the temporary or permanent works requirements have been considered by the design engineer/checking engineer.
- Platform design for crane to be working approx. 7,0m from the edge of the slope by Main Contractor

Contaminated areas / existing pollution

- There are no known contaminated areas or any existing pollution on the site of works.

Interface with local community i.e. schools, residential dwellings etc.

- To be undertaken by Client

Storage of chemicals as required under COSHH

- All fuels and chemicals will be stored in a bunded area within the site compound.

Adjacent areas such as SSSI's, AONB's, etc.

- N/A

Existing flora and fauna and associated means of protection

- There is no known flora or fauna that will require protecting during the works.

Existing consents that apply

- There are no consents that apply to these works.

Aspects that may impact on the surrounding environment such as noise, vibration and dust.

- It is anticipated that the works will not generate noise or dust that would be a nuisance to the local residents. Noise will be generated throughout the works from the use of excavators and piling equipment. Noise levels will be monitored during the works and methods re-evaluated if necessary by the main contractor.

- Vibration monitors can be set up and used, British Standards that provide guidance for measuring vibration are
    - BS:7385 Evaluation & measurement for vibration in buildings
    - Part 1 – Guide for measurement of vibrations & their effects on buildings
    - Part 2 – Guide for damage level form ground-borne vibration
    - BS:5228 Noise control on construction & open sites
    - Part 4 – Code of practice for noise & vibration control applicable to piling operations
    - BS:6472 Evaluation of human exposure to vibration in buildings
    - Note BS:7385 and BS:5228 are concerned with levels of vibration that may cause damage, whereas BS:6472 is a guide for nuisance levels.

Refuelling

- Refuelling will initially be undertaken prior to delivery of the plant with fuel supplied by main contractor during the works.
- All refuelling will be carried out away from the water course in designated area.

Housekeeping

- All tools and materials will be returned to the storage area when not in use to reduce the risk of accidental spillage of fuels and oils.

Designated Storage

- A store will be provided for the secure storage of tools and materials. Fuels will be stored in a bunded area.

Exclusion zones and site security

- During piling operation an exclusion zone will be in place to protect other operatives from entering piling zone, this will be controlled by the main contractor and rolled down to other sub-contractors on site.
- Site security will be the responsibility of Client

Lighting (background and task)

- There will no task or background lighting used during the activities covered by this method statement.

Waste arrangements

- Waste skips will be provided for the collection and removal of waste generated by the welfare facilities.

Safe System of Work to be Adopted:-

1. All persons will receive a site induction and will be briefed on the contents of this method statement prior to commencing these works on site.
2. The area will be CAT scanned for services, checked against service drawings and permit to break ground will be issued. This will be updated by Rhodar as work progresses.
3. Hot Works permit will be issued, daily as main contractors procedure if required
4. The setting out of the piles wall will be by Main Contractor
5. On inspection of the piling platform works will commence.
6. Weekly PUWER & LOLER inspections of equipment will be undertaken but all operatives to check items of plant / lifting equipment prior to each use and any defects must be reported immediately.

Exclusion Zone – 7m from top of slope

1. A crane exclusion zone has been set 7m from the top of the slope, this area is not to be used for the storage or lay down of anything other than the following items
    a) Vibro hammer – 5.5t
    b) Vibro hammer power pack 4.5t
    c) Spud piles and walkways 16m and 12m long
    d) MEWPS – 10t

2. These items will be periodically placed in this exclusion zone at times during the operations it is not envisaged that all these items will be present at all times and if we can avoid using this area we will.
3. Under no circumstance's will the crane leave the working platform which will be set up 7m away from the river wall at the top of the slope
4. The crane will always be working with tracks parallel to the existing slope and the new sheet piles.
5. It is understood that whilst we are installing the piles if feasible Main Contractor will be working in attendance to the piling gang.

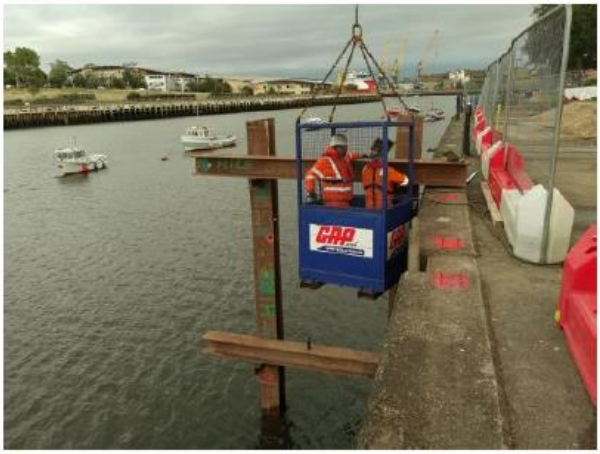
Installation Temporary Piling Gates

1. Spud piles are to be driven using the 2316 hammer. In order to secure the spud pile a toggle chain will be placed through the lifting point of the spud pile and hoisted up by the crane. Once the spud pile has been clamped and installed the pile will be installed and extracted as required.
2. Once clamped by the lower jaw, the vibratory hammer and spud pile will then be lifted by the crane and positioned to the location as set out by the site engineer, and the pile driven to level. This process will be repeated for the other 3No spudpiles.
3. Once spud piles have been driven to level, brackets are to be welded onto thefaces of the spud piles to support the cross head beams.
4. Access for welding the support brackets will be either via use of an access boom('cherry picker') or man rider basket suspended from a tailing crane.
5. Brackets consisting of 305x305 UC are to be suspended from the main crane whilst positioned and tack welded against the face of the spud pile, to support the cross head beams.
6. Lower cross head beams onto the brackets, the beams are then to be levelled and

welded into position. Access for removing the chains and tack welding into position will be will be either via use of an access boom (‘cherry picker’) or manrider basket suspended from a tailing crane.

7. It will then be necessary for clients to markthe centre line of piling; access again will be either via use of an access boom(‘cherry picker’) or man rider basket suspended from a tailing crane.
8. Once the cross head beams have been positioned, the walkway platforms complete with handrails installed will be used to access the works, once the platforms are placed onto the cross head beams, the site engineer will set out the centreline of the proposed pile line, and the walkways will then be welded into position on the cross head beams to allow the piles to be pitched into the piling gates safely.
9. Access between top gates and lower gates will be by means of a lashed woodenpole ladder. Access from the edge of the river bank to the piling gates will be by means of a walkway positioned form existing sheet piles onto the piling gates.
10. Extraction of the piling gates will be undertaken once the sheet piles havepitched and driven to the required level.

Spud pile installation



Cross head beams

Walkway installation

Installation Sheet Piles

1. The piling gate/guide frame will be used as a guide to allow the pitching and driving of sheet piles to form the new retaining wall.
2. The piles will be pitched singularly using a certified 7.5t SWL pile pitching shackle. Remove pile from the stack, and placed inside the piling gates. The first pile will be pitched and driven vertically between the piling gate walkways.
3. Once the pile is pitched and driven, piles will be pitched either side of the firstpile, after two piles have been pitched pitching shackle will be removed.
4. The 2316 vibratory hammer will be utilised to drive the piles to approximately 1.0m above the top walkway level. The process is to be repeated until the piling gate is full of piles or a change of direction is required.
5. Once the 'panel' of piles has been installed level to the upper walkway level of the piling gates, the top walkway beams are to be removed to allow the piling hammer to drive the sheet piles through the top walkway and down to the lower walkway level.
6. Once the piles have been installed and driven to the correct level, the piling gates are to be extracted and reinstalled to suit the next line of piles.
7. The piling gates are to be removed and reinstalled where possible to prevent double handling.

Pile pitching

Oxygen Propane Cutting Operation.

1. Area within which work is being carried out must be cordoned off by Rhodar to prevent the entrance of unauthorised personnel.
2. Oxy bottle and propane bottles will be stored at least 10 feet from each other.
3. If work is to be carried out in a restricted space, then adequate ventilation must be made available.
4. Suitable screening will be provided if required to protect other personnel from the effects of the burning operation.
5. Eye protection will be used at all times.
6. Flame resistant clothing will be worn.
7. Heat resistant gloves will be worn.
8. Before commencing work, all burning equipment will be checked to ensure that it is in a safe and useable condition.
9. Heat shields will be used to protect any surrounding material.
10. Ensure work area is clear of any combustibles, eg, oil, lagging, paper etc.
11. All directions for by products from burning i.e. slag etc will be away from people and items of plant etc.

Welding Operation

1. The welding will be operating out of a long-wheel based van.
2. On arrival the vehicle will be positioned as close to the posts as possible. A maintained distance of within 7.5 metres to earth the KPW is required.
3. Suitable screening will be provided to protect other personnel from the effects of the welding operation i.e Arc eye.
4. The earth lead needs to connect directly to the SSP by way of a clamp attached to a bare patch of steel.
5. The welding processes create molten weld splatter above and below the area being welded. It is the client's responsibility to ensure surrounding surfaces are protected and coordinate other trades around our process.
6. Inclement weather will inhabit the welding process.

Drivability/Refusal

1. Any pile which deflect or achieve refusal above the design toe level once will be referred to the "Main Contractor/ ESS (CE) Ltd Site Management Team" with a view to design re-assessment / instruction.
2. Refusal with the piling equipment is as determined by the equipment manufacturer as where I minute of continual driving with the specified vibratory hammer fails to achieve 75mm of penetration or distortion occurs to the head of the pile.

Positional & Alignment Tolerances

1. Unless deflected by obstructions, king piles shall be installed within the following tolerances In plan +/- 75mm of the given sheet pile line at commencing surface Vertical 1 in 75. Level +/- 50mm of required top level.

Off Loading Materials

1. All materials will be delivered by 40ft flatbed articulated lorries or lowbed low loaders and unloaded using the crane
2. Sheet piles will be delivered using extended trailers by haulage company.
3. A specific lift plan will be provided for these operations as a separate document.
4. A footed wooden ladder will be used to gain access to the bed off the wagon.
5. Handrails will be in place on the wagon to prevent persons falling off the vehicle.
6. All lifts during the unloading will be horizontal lifts with two points of securing whilst slinging.

General

1. The works will be subject to inspection prior to start of each shift commencing and to the required statutory inspection.
2. Plant is to comply with site speed limits 10mph on site.
3. All plant is to be operated by competent CPCS trained operatives and have the relevant certificates.

Crane Rigging

HOLD POINT

1. THE CRANE WILL BE DELIVERED UNDERPOLICE ESCORT ON THE EVEING PRIOR TO THE ASSMEBLY OF THE CRANE
2. On arrival at site or plant yard report to person in charge.
3. All personnel to be given toolbox talk, briefed on method statement and risk assessment (ON THE WORKING PROCEEDURES)
4. Prior to any works taking place THE PRE-START ON SITE RISK ASSESSMENT will be COMPLETED
5. Continue to monitor the environment and any changes in the ground conditions.
6. Brief the crane operator on the steps to be taken and his duties, with reference to this Method Statement.
7. Once fully satisfied with the location to rig the crane, which should be on firm level ground, the assembly of the crane can begin. Raising the A Frame, ensure that the rigging key is on the on position on the left hand side panel in the main cab.
8. Operate the boom lower function, this will raise the A Frame from the rear stowed position, continue to operate then the A Frame will raise to the vertical position, continue operations then the A Frame will now lower out away from the front of the machine, continue until the pendant ropes that are on the A Frame reaches the lugs that are on the root section, then attach the pendants to the root section lugs with two number clips and pins.
9. Operate the boom function, this will now raise the A Frame and lift the root section thus allowing the unloading from the loader.
10. Extending of the track, operate switch on the left hand side panel in the main cab
    to put the hydraulic feed to the track frame. Operate the two number jack levers to push two number jack legs to the ground to relieve the tracks of the machine weight. Remove two number clips and pins from the track extending bars. Operate the track extending levers and extend the tracks until they reach the stops and the holes are in line.
    Fit four number pins and clips to track extending bars. Operate track wedge hydraulic lock lever.
    Operate the two hydraulic jack levers to retract the jacks in to the stow position. Disengage

the track frame hydraulic feed by putting the switch on the left hand panel to the off position. Ballast, pre assemble the ballast and secure together with the chains and chain pulleys. Attach the machine rear lift rams to the ballast and hoist the ballast in to position using the remote box on the electrical panel or two number levers. Lock the ballast into position with the slide bar and insert the locking clip.

11. Boom build, preassemble the intermediate boom sections with the aid of a stand by crane, forklift and excavator or hiab crane. WARNING Ensure pin connection are secured along the assembled boom sections. Attach the required pendant ropes to corresponding boom sections.
12. Move the machine into position with the assembled boom in alignment with the lower section. Slowly align the top pivot of the lower boom with the top part of the remainder of the boom, and connect together with the connecting pins and lock them together with the R clips.
13. Operate boom hoist motion slowly to close the gap until the bottom connecting pins can be inserted and locked together with the R clips. WARNING Under no circumstances shall anyone place themselves or any part of their body beneath the boom sections, if this should prove necessary then the boom shall be adequately chocked with the stands carried in the fitters van or heavy timbers or similar.
14. WARNING Extreme care must be taken to avoid over-hoisting, which could result in damage to the boom structure.
15. Once the boom is built, lower off by the boom down function and lower the A frame to put slack in the pendant ropes on the A Frame, then disconnect them from the root section by removing two number pins and clips, then connect them to the intermediate pendants with the two number pins and clips. Operate the boom up function and lift boom up 1 metre. Connect all relevant electrical accessories to the boom point. Using protective gloves feed the main hoist rope from the winch drum and place
16. along the boom and over the boom head sheaves, repeat with auxiliary rope if required. Fit main and auxiliary over hoist cut outs. Feed rope through the main hook block and connect rope anchor back to boom head or hook, repeat for the auxiliary if required.
17. Lift the boom into its working position as smoothly and as slowly as possible. Set the Rated Capacity Indicator to the correct configuration. Carry out load test to confirm correct function of the main and auxiliary hoist brakes. Complete rigging sheet and leave copy with site agent or foreman.
18. All crane operational controls will be checked for correct function. The RCI will be function tested, and programs checked to be appropriate to the application.
19. The red crane records folder will be checked to ensure that all documents required are intact.
20. If the rigging crew are satisfied that the crane is in good working order the appropriate section of the pre-delivery inspection form will be so endorsed.
21. The pre-delivery checklist document will be completed by the rigging crew. This document will be returned to the office as a final verification that the crane has been rigged in a proper manner. The appropriate copy of this document will be handed to the site representative, and a copy will be housed in the crane folder. The site representative will be invited by the riggers to view the crane in its rigged configuration. The general condition of the crane will be visually inspected and the Handover report completed and signed.

Plant, Equipment and Welfare Arrangements:

Plant

- 1 No 100t Lattice Boom Crawler Crane
- 1 No 360° Excavator – provided by Client
- 1 No 45ft MEWP
- 1No 2316 VM Piling Hammer c/w Power Pack
- 2 No Certified Lifting Chain
- 2No Certified Pitching Shackles
- 2 No Certified Slings
- 1No 10 x 8 Cabin
- 1 No Welding Set
- 1No Man Riding Basket
- Wooden Pole Ladders
- Life Jackets
- Harnesses
- Oxy Propane Cutting Equipment
- Small tools
- Hiab vehicle

All plant to have up to date certifications, and the drivers to have the relevant CPCS card that is to be checked by the General Foreman.

Welfare

- Toilets and wash basins will be available in the main works area. Mess cabin, toilets, showers, drying rooms, provided and maintained by the Client in the main compound.

PPE

- The minimum PPE to be worn is hardhat, high visibility clothing and safety boots, light eye protection, gloves and ear protection to be worn when required, harnesses in the MEWPS

Emergency Procedures and First Aid Arrangements:

In case of emergency the emergency services will be contacted by the nearest telephone. Senior members of ESS (CE) Ltd all carry mobile phones. Ring 999 (or 101) and state which emergency service is required and the location. The main contractor will have liaised with the emergency services and they are familiar with the location and nature of the work. First Aiders to be provided by Client.
Any accidents or near misses however minor must be reported in the accident book and principal contractor's accident book.

Audit & Review Procedure

Risk assessment and method statement to be monitored regularly by General foreman and supervisory staff and any alterations to the process method or resources will be issued in the form of an amendment as soon as practicably possible.

Project Name	**Vine Street**
Work area covered by this certificate	**Crane Platform**

(A sketch or marked up pile layout drawing may be attached to this certificate. Include haul roads and gridlines.)

Part 1 – WORKING PLATFORM DESIGN

Equipment to be used on site.	100t Lattice Boom Crawler Crane
Maximum plant loading	See Data Sheet

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

Designer Name		Tel No.
Designer Organization		
Is Testing Specified?		**If '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.

The 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

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Working Platform Regular Inspection Log

The working platform has been inspected. All necessary maintenance, modification, repair or re-instatement of the working platform is to the as-designed installed condition. If necessary, a revised Working Platform Layout Drawing has been issued to the specialist contractor.

Date	Organisation	Name & Position	Signature	Comments (include key details of alteration, modification, maintenance, repair, date of next inspection, and whether or not revised drawing issued etc. as appropriate)

For Review

INTEGRATED RISK ASSESSMENT	PART A	CONTRACT:	Rhodar	
OPERATION:	Conventional Sheet Piling		RA No.	01

SCOPE OF OPERATION, LOCATION AND LIKELY DURATION	Associated Method Statements
Conventional Sheet Piling Vine Street Duration is anticipated 7 Weeks	01

SPECIFIC ASSESSMENT CONTROL MEASURES INCLUDED			WHO MAY BE HARMED		
[ ]	Asbestos	[X]	Noise	[X]	Employees
[X]	COSHH	[X]	PPE	[X]	Subcontractors
[ ]	Lead	[ ]	Radiography	[X]	Official Visitors
[X]	Manual Handling	[ ]	Young Persons	[X]	General Public

PREPARED BY: Scott Raftry..... Supervisor/Foreman .....

Checked by: ..... Date: 12th May 2023 ....

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INTEGRATED RISK ASSESSMENT	PART B	CONTRACT:	Rhodar
OPERATION:	Conventional Sheet Piling	RISK ASSESSMENT No:	01

No	Hazards	Initial Risk	Initial Potential for Harm			Action Req'd	Control Measures	Residual Potential for Harm		
			H	M	L	(Y/N)		H	M	L
1	Load / Unload Plant	Traffic Congestion. Plant Overturning.	X			Y	Ensure adequate space is available. Control traffic. Ensure that the loading/unloading area is firm and level. Use competent Banksman.			X
2	Erect and dismantle Crane	Crushing of operatives	X			Y	Ensure adequate and competent operator.			X
3	Tracking and slewing of Crane	Overturning of Crane Crushing of Operatives	X			Y	Ensure firm and level ground. Never track or slew close to an open excavation. Operatives to stand clear of Crane whilst travelling. Never exceed SWL of lifting appliances. Never track or slew with hammer above the cab level			X
4	Offloading materials	Overturning of Crane Crushing of Operatives	X			Y	Ensure firm and level ground. Ensure work carried out by competent persons. Use certified lifting equipment. Tag lines, if necessary, to control loads. Competent operator. All non-essential personnel to be kept away from area.			X
5	Handling and pitching piles	Crushing of Operatives Dropping piles	X			Y	Use trained piling operatives. Use certified lifting equipment. Use trained banksman/slinger. Ensure slinger inspects connections prior to lifting All non-essential personnel to be kept away from area Ensure piles weight is within lifting capacity of Crane.			X

No	Hazards	Initial Risk	Initial Potential for Harm			Action Req'd	Control Measures	Residual Potential for Harm		
			H	M	L	(Y/N)		H	M	L
6	General Site access around working area	Slips, Trips and Falls.			X	Y	Adequate working platform to be provided and maintained throughout the piling operation. Good housekeeping			X
7	Lifting with Quick Release Shackles	Early release of piles due to incorrect fitting of shackle	X			Y	Ensure locating pin is correctly positioned in the pile pitching hole and check that it does not come loose. Only designated banksman/slinger to give lifting instructions.			X
8	Lifting piles with Quick Release Shackles	Early release of piles due to rope becoming 'snagged'	X			Y	Ensure that the release rope is not left to dangle freely, ie the rope to the bottom of the pile.			X
9	Lifting piles with Quick Release Shackles	Failure of shackle	X			Y	Use correct shackle for the job Carefully examine for damage or distortion Never use defective shackles			X
10	Plant 360° Excavators Piling Cranes	Collision with other plant or personnel. Reversing. Tracking and slewing		X		Y	All plant operators are to hold current CPCS. All daily inspection reports to be completed. All plant to have all round vision, to include mirrors, and banksman where required. All statutory inspection to be completed. All personnel to wear full PPE. No ear protection required whilst working around Plant. Ensure operative competent. Never track or slew near open excavations. Never exceed SWL of equipment. Operatives to stand clear in view of Crane operator when tracking			X
11	Underground Services	Explosion, electrocution, flooding			x	Y	Issue weekly permit to dig, CAT scan excavation area prior to dig. Any services found are to be clearly marked and identified. Any services encountered are to be assumed live until proven otherwise. Hand dig to locate and expose services.			X

No	Hazards	Initial Risk	Initial Potential for Harm			Action Req'd	Control Measures	Residual Potential for Harm		
			H	M	L	(Y/N)		H	M	L
12	Excavators used for lifting.	Unplanned release or dropping of load. Person being struck by boom etc. Object falling from boom or bucket.		X		Y	Excavators to have a valid 12 month examination certificate, check valves to be fitted to excavators used for lifting. No operatives to stand within operating radius of excavator. The machine will be on a firm, level base, and the lifts will be carried out with the boom parallel to the machine tracks.			Y
13	Failure of lifting gear	Damage to properties of personnel		X		Y	All lifting gear to have a 6 month test certificate and be inspected prior to use by signaller/slingers. Ensure slinger inspects connection points prior to lift			Y
14	Banking and Slinging	Crushing		Y		Y	Slingers and banksmen fully trained and certified, never tie knots in chains or use bolts to shorten legs. Always place hook centrally over the load. Use only recommended/known signals. Suitable sized packers to be used under the load when lowering off. Keep hands and feet clear of load during lifting/ lowering operations. Always wear PPE, high visibility vests and safety boots. Keep all unauthorised persons away from the operation. Load should be lifted and landed in a manner that does not damage the lifting equipment.			Y

No	Hazards	Initial Risk	Initial Potential for Harm			Action Req'd	Control Measures	Residual Potential for Harm		
			H	M	L	(Y/N)		H	M	L
15	Oxygen / Propane Burning / Welding	Injury to personnel from hot metal		Y		Y	Suitable PPE must be worn. Any burnt material must be cooled down immediately. All other personnel in area must be aware to stay clear of sparks and hot metal. Ensure correct gauges are used and are correctly fitted, inclusive of 'flash back' arrestors. Ensure all equipment is in good order. All works are to be undertaken in an open area on site, above ground with natural ventilation, only expected works are to be welding of corner bars/frames into piles. Should extensive welding/burning be required we will review the method. Heat shields to be utilised. Ensure flammable materials are kept away form operations. Fire extinguishers to be used in the area and kept on site. Sand available. Check all equipment hoses nozzles etc, and that all equipment stored correctly. Never weld vessels that have contained flammable materials. Heat shields to be utilised			X
16	Noise	Injury to personnel / deafness		X		Y	Whole area to be restricted to only essential personnel. Trained personnel only to install sheet piles. All personnel in the 85dB(A) noise zone must wear ear defenders/plugs. Noise monitoring to be carried out by main contractor for other trades working in the vicinity.			X
17	Pest Hazards	Injury to personnel, damage to equipment		X		Y	Whole area to be monitored for signs of rats. The presence of rodents is easily detected by signs of chewing damage and fecal droppings (often found in storage areas)			X

No	Hazards	Initial Risk	Initial Potential for Harm			Action Req'd	Control Measures	Residual Potential for Harm		
			H	M	L	(Y/N)		H	M	L
18	Manual Handling	Injury to personnel		X		Y	Tool box Talk on correct lifting techniques, avoidance of manual lifting, use plant when required and risk assessment in place. Never attempt to lift, lower, push, pull, carry or move anything that is too heavy. Plan route to ensure that path is clear of obstructions. Take up position with feet slightly apart, one foot slightly advanced in the direction you intend to move. If other are assisting, ensure they are ready. Keep the load as close to your body as possible bend the knees and keep back muscles relaxed, make best use of arm and leg as much as possible. Ensure you can see where you are going.			X
19	Coronavirus	Illness unwell, death spread of disease		X		Y	Health surveillance, suitable welfare facilities with hand washing site specific rules to be followed. Gloves to be worn, hands to be washed prior to eating or smoking. Single person driving to site in vans were possible. Constant review and updating in accordance with Government Guidelines. Site specific rules and guidance to be followed and rolled down at the main contractors induction. https://builduk.org/news/2020/03/site-operating-procedures			X

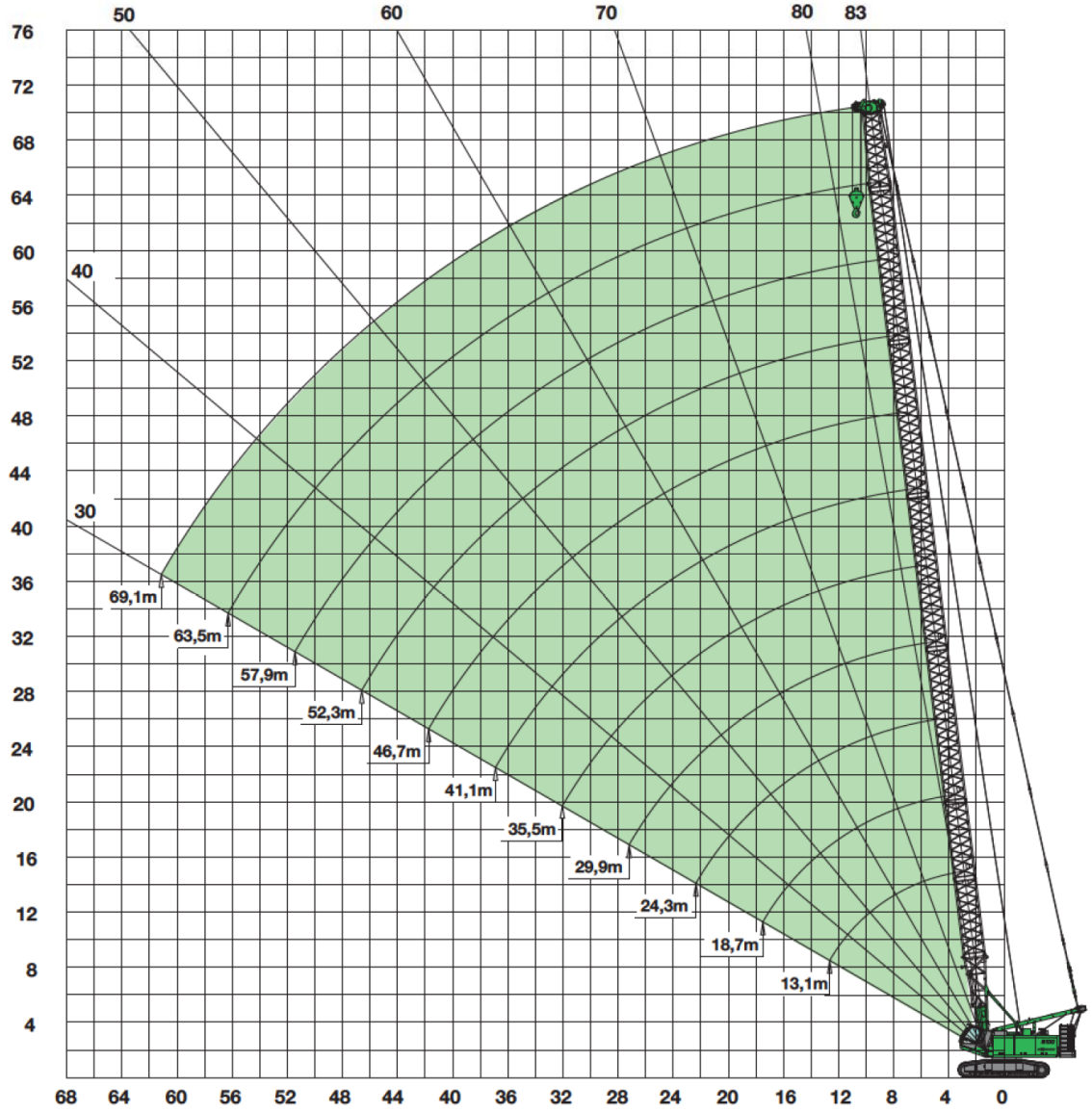
Appendix A – Plant & Equipment

SENNEBOGEN® 6100 HD

Kranausrüstung / crane equipment

DIN ISO 360°

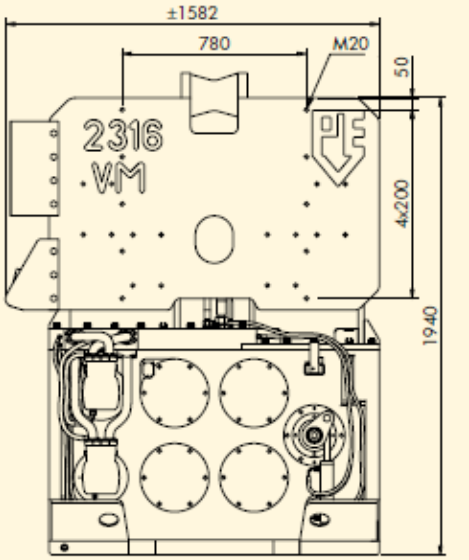
13,1 - 69,1 m

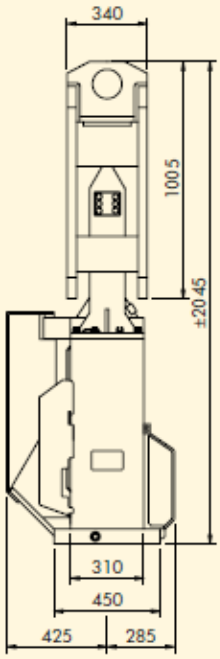


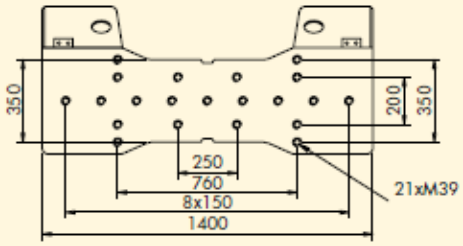
Dieseko's
PILING & VIBRO EQUIPMENT

PVE 2316 VM

High Frequency Vibrator with Variable Moment







Specifications		
Eccentric moment	0 – 16	kgm
Max. frequency	2300	rpm
Max. centrifugal force	928	kN
Max. line pull capacity	300	kN
Total weight, without clamp	3000	kg
Vibrating weight, without clamp	2350	kg
Max. amplitude, without clamp	14	mm

Due to improvement and engineering progress we reserve the right to change specifications without notice.

11/03 - kvm DESIGN 1 GmbH Munich

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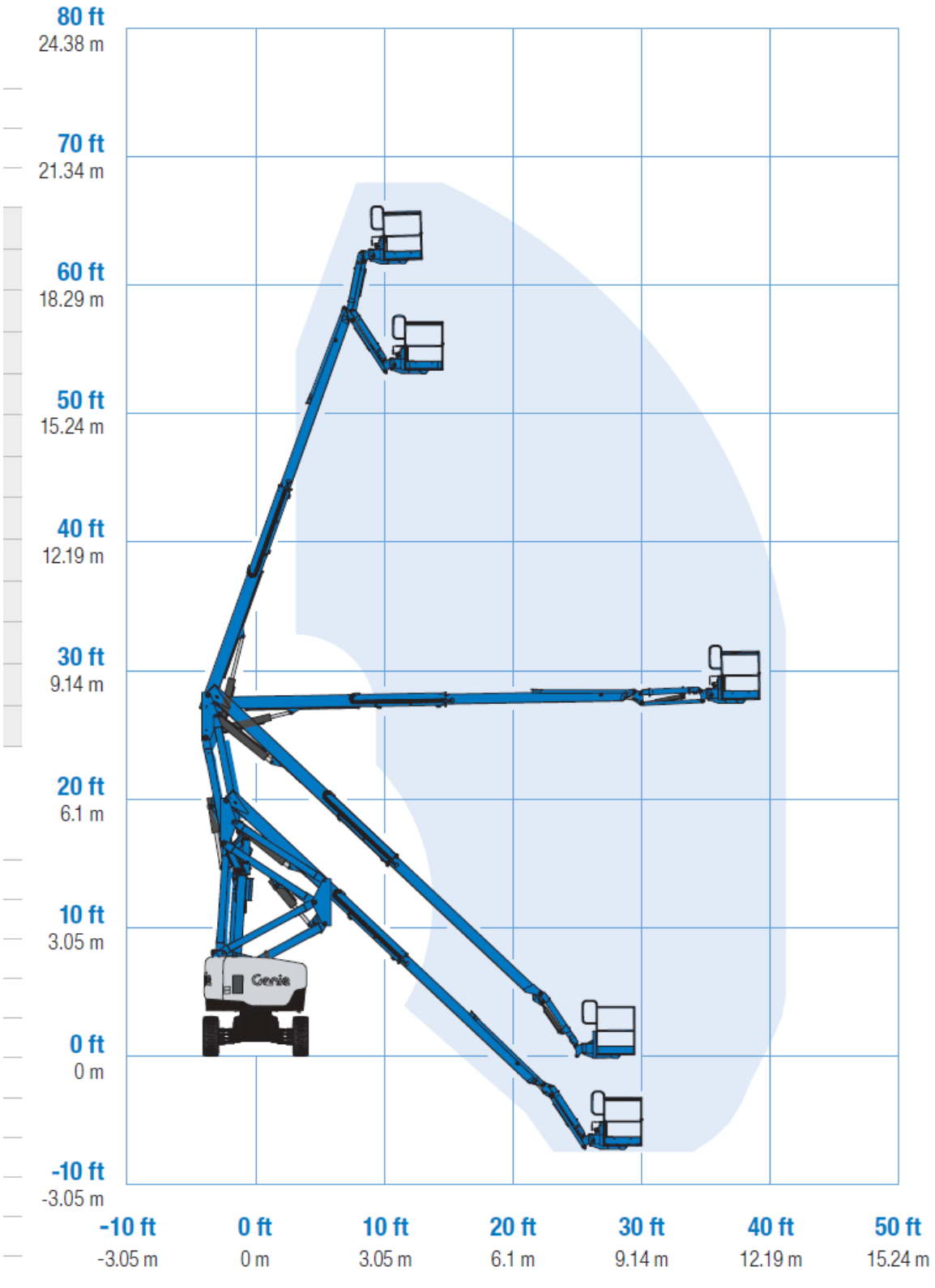
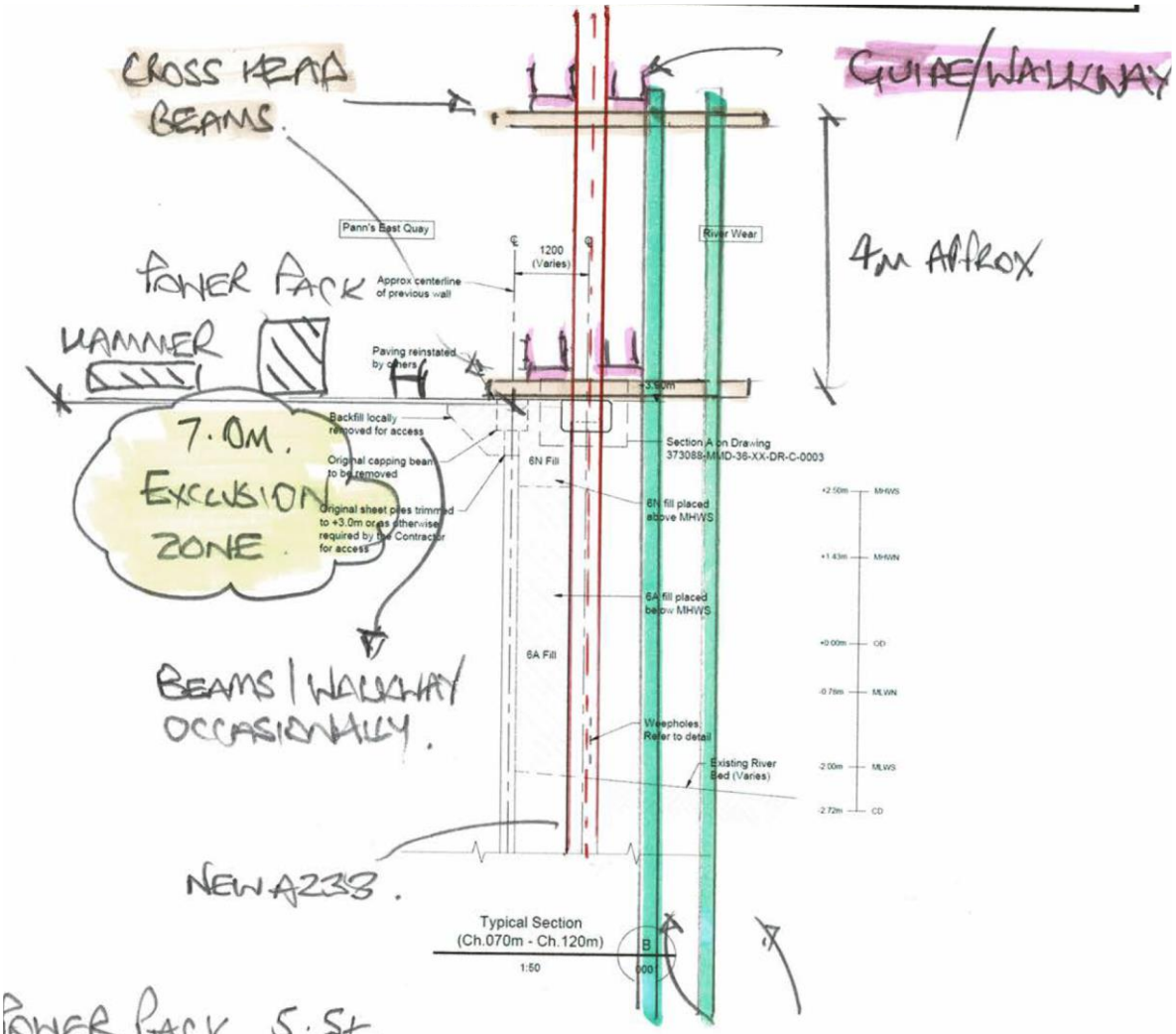
Range Of Motion Z-62/40 & Z-62/40 TraX



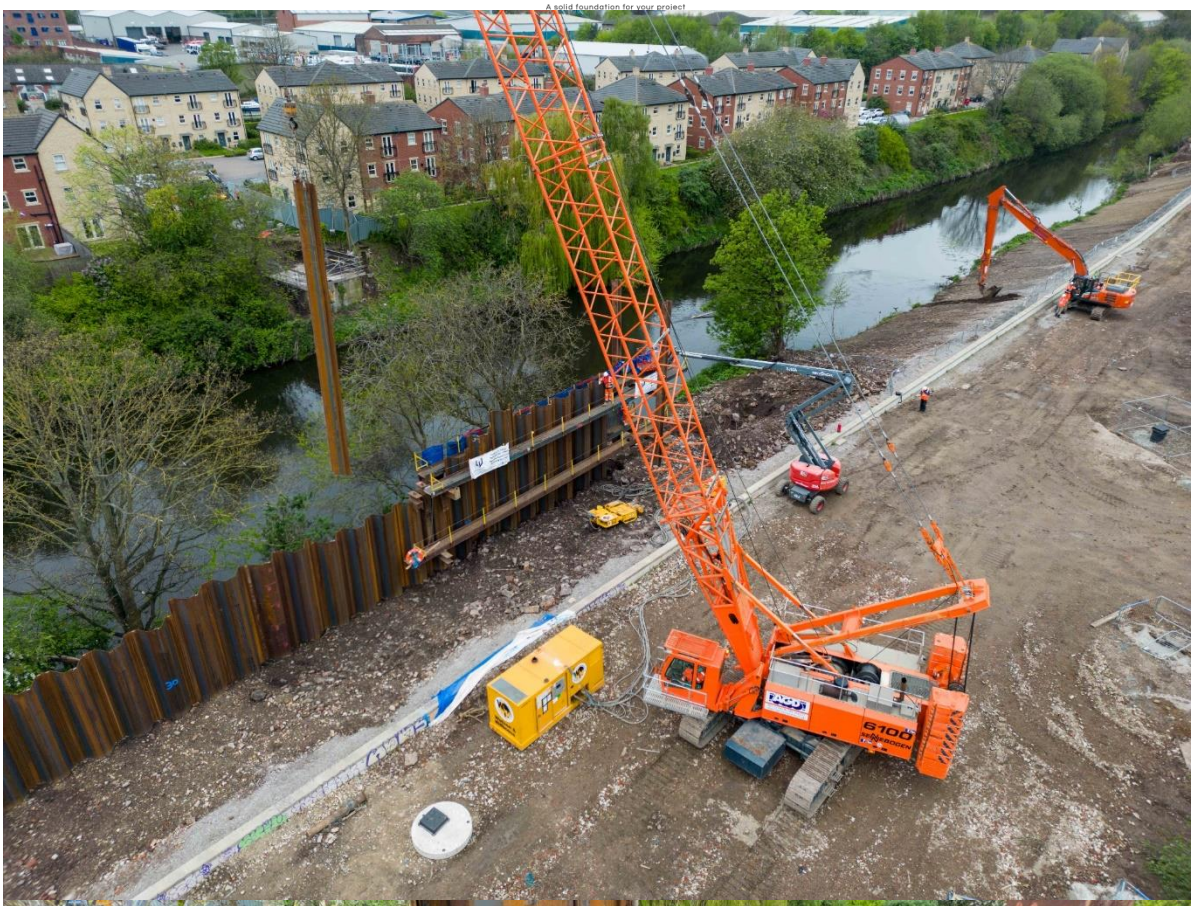
Appendix B – Typical Gate Set Up & Working Arrangements

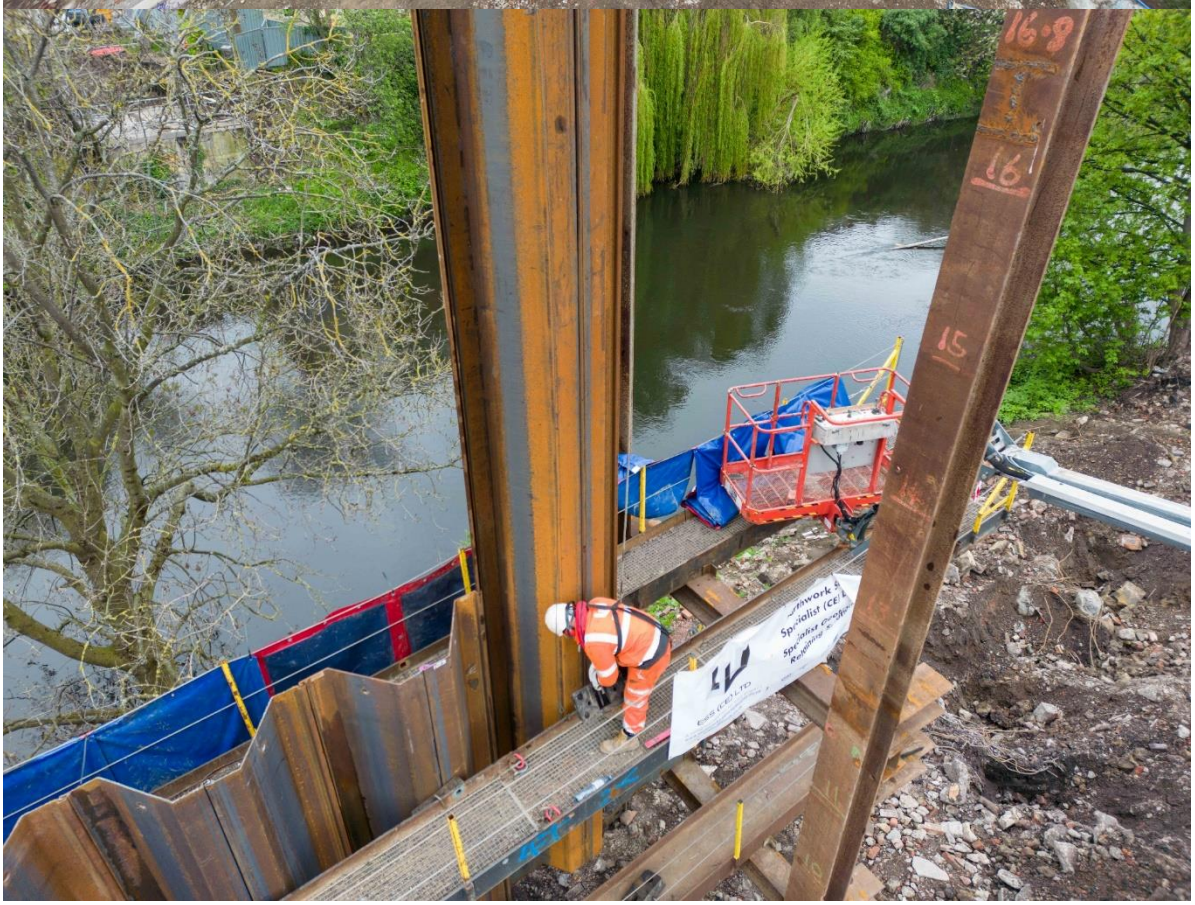


CALCULATION SHEET

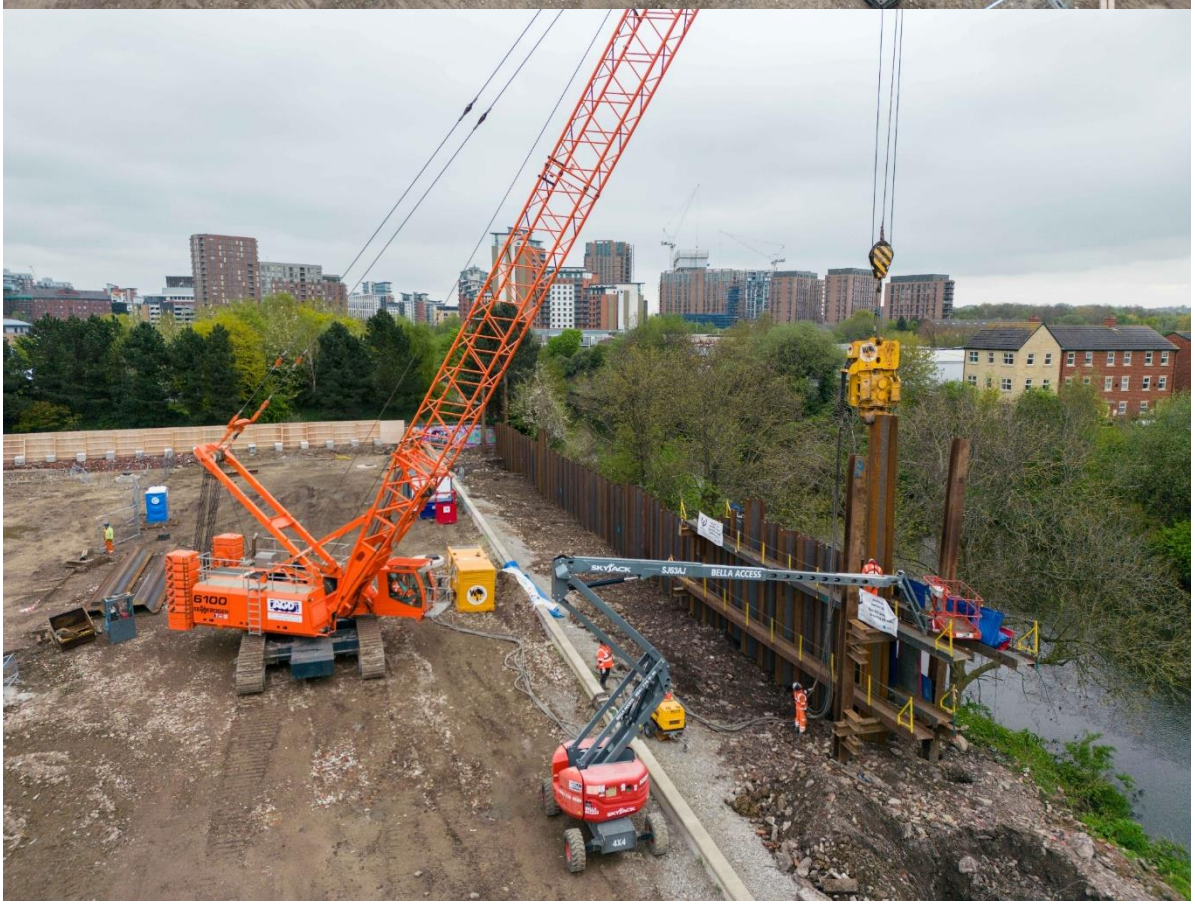
2316
V M
SJ63A

6100




16.8
16
15

6100


6100
SKYJACK
SJ63AJ
BELLA ACCESS
4X4