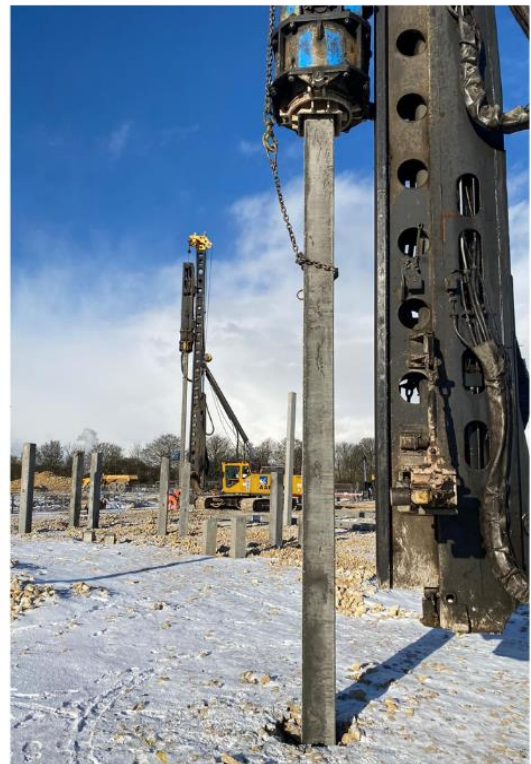


Proposal



AARSLEFF



DRIVEN TIMBER, H SECTION, STEEL & PRECAST CONCRETE PILES | SOIL NAILS | ROCK BOLTS
GROUND ANCHORS | SFA PILES | DRILLING & GROUTING | KING POST WALL | SHEET PILING
BORED PILES | CFA PILES | MINI PILES | SECANT PILES | CONTIGUOUS PILE WALL

Details of Budget Proposal

1. Details of Piles

BS EN 12794:2005 Class 1A/D (Precast Piles Only)

Nominal size(s) mm	300mm sq
Type (Nos. of T12mm bars)	Up to 6
Concrete	Grade C50 Sulphate Resisting
No. of piles	1417 No Piles (additional piles included to reduce loads for DPC)

2. Working Loads

Compression (kN)	Up to 950kN
Tension Load (kN)	Nil
Horizontal (kN)	Nil
Bending Moments (kNm)	Nil
Ultimate N.S.F. allowance (kN)	Nil
Design Code/Standard	(Geotechnical) BS 8004:1986
	(Global Design Factor of Safety) 2.0
	(Structural) BS 8110-1:1997
	(Partial Factor of Safety) 1.5
Pile Lengths (m)	(Supply) 17m
	(Driven) 16.5

3. Piling Levels

Piling Platform Level(s)	Taken as SI BH commencement level
Pile cut-off level(s)	Taken as between 500-1000mm below PPL
Bond Steel Length (mm)	500

4. Drawings

Pile Layout DR-S-02301 rev S2
Foundation Layout DR-S-02302 rev S2
HAVANT Design Information ZT 26.04.2021

5. Geotechnical Information

EPS Site Investigation Report Ref: UK20.5052b
Date: 24th March 2021

6. Programme

Subject to the availability of suitable plant, piles and testing equipment, we would anticipate an onsite target duration of up to 8-10 working weeks for the completion of the quantity of works as billed, exclusive of pile testing or circumstances beyond our control. Contractual programme period to be discussed and agreed.

Available working hours of 07:30 to 19:00 Monday to Thursday, 07:30 to 13:00 Friday. Available working days excludes weekends and bank holidays. Should we be required to work outside these hours any supervision etc. will be provided by the Main Contractor. Contractual programme period to be discussed and agreed.

Budget Proposal Specific Items

1. The loading information provided is currently compatible with BS 8004:1986, should you wish our pile to be designed to BS EN 1997-1:2004 and UK National Annex (2007), please provide us with the pile actions in 'Representative' format and split into Permanent 'G' and Variable 'Q' actions.
2. **Fluctuations - Materials**
Material Prices (inc consumables) given in the Sub-Contractors proposal may be increased by such amount as is reasonably necessary to reflect any significant increase in the cost of supplying the Goods. Accordingly the contract sum, time of performance, and contract requirements shall be equitably adjusted by a Variation Order in accordance with the procedures of the Sub-Contract terms. In all instances the base date for such increase shall be the date of the Sub-Contractors proposal.
3. **New Legislation - Any Act of Parliament, changes in legislation, measures having a legalistic effect, fluctuations in Tax, duty, exchange rates etc. which may take effect, then accordingly any additional loss and expense shall be equitably adjusted by a Variation Order in accordance with the procedures of the Sub-Contract terms. In all instances the base date for such increase shall be the date of the Sub-Contractors proposal.**
4. Our design responsibility is limited to the structural design of our pile sections to cater for loading details provided by others and for the geotechnical resistance design to provide an adequate factor of safety against failure for individual piles, no group analysis has been undertaken. We are not responsible for the calculation of loads that are to be applied to the piles or for the connection to other works. Also please note that with driven piles it is not always possible to achieve the required resistance at the static design depth hence the monitoring of the set for installation purposes.
5. Piles will be driven to a predetermined dynamic 'set' taken from the modified Hiley formula or refusal, whichever occurs first and pile lengths must remain subject to driving experiences gained on site. Actual working load will be determined via suitable dynamic load testing undertaken as the works progress on site.
6. We note from the site investigation the increased strength of the underlying granular material within the borehole logs to a depth of around 6mbgl. Whilst we have assumed penetration of this material using our normal piling plant it may happen that some piles are obstructed/damaged. Should this be the case we would look to mobilise a pre-bore rig to prebore pile positions to a depth of around 4-6m at the rates provided within the BoQ.
7. In order to provide you with a DPC alternative solution for the loads specified within the HAVANT Design Information ZT 26.04.2021 document, additional piles have been included within the pile caps in order to reduce loadings to a maximum of 950kN. Pile caps of 2 have increased to 5, 3 to 7 and 4 up to 9 no piles per cap. Confirmation of pile loads would be required to be provided by the structural engineers prior to award to ensure our assumptions are correct and to provide revised pile layouts and loadings. Please note that currently piles have only been designed for compressive loads. Confirmation of any additional load combinations that may act on the piles would be required structurally once known.
8. If design or construction information is issued by electronic transfer from a remote server or through a website the Contractor is responsible to notify Aarsleff of what information is available that is pertinent & applicable to the sub-contract works & any such revisions or changes. For clarity, the Contractor is responsible for the notification to Aarsleff of any information change whatsoever & howsoever applicable to the Aarsleff construction activity. Aarsleff reserve the right to amend any proposal or agreement should such information omissions be highlighted at a later date.
9. We offer a comprehensive design and technical support service to best suit your requirements with the aim of supplying the most efficient engineered solution possible. Depending on the project's requirements and available information, the resulting design process may be an iterative one. If therefore, our proposal is of interest, AGE's final design specification, scope, programme and allowances are to be agreed prior to entering an agreement. Any design work relating to this project shall remain the property of and shall only be warranted if Aarsleff carry out the works. Design information shall only be released upon written confirmation that Aarsleff shall carry out the works.
10. We intend to install the piles using hydraulically activated hammers. Noise and vibration will be kept to a level compatible with normal pile driving operations using our standard equipment. Should our work be suspended or terminated completely, we will be reimbursed for all costs and liabilities in which we are involved.

11. Our proposal is made subject to the terms and conditions within this proposal and no alterations, exclusions, additions or qualifications will be accepted unless agreed in writing by an authorised representative of Aarsleff. The proposal is open for acceptance for 4 weeks and is fixed price for completion of the works prior to the end of July 2021. Thereafter it is subject to fluctuations.
12. The Sub-Contractor shall retain Title in all Materials (Goods - Including IPR's) until such time all sums due have been paid in full. Until such time the Main Contractor shall hold these Goods as the Sub-Contractors fiduciary agent regardless of whether the goods have been incorporated into the Sub-Contract Works or not.

the safe operation and erection of plant and equipment, storage of plant, equipment and materials, offices, sheds and the manufacture of reinforcing cages. Where it is not possible for the Specialist to have exclusive use of the Hardstanding and Storage Areas, the Specialist's agreement to any other activities to be carried out concurrently must be obtained before they are commenced.

13. **Working Platform.** Design, installation, maintenance, regular inspection, repair and subsequent removal and exclusive use of free draining Working Platform, safe for pedestrian access and in accordance with the requirements of the attached FPS Guidance, Regular Inspection Log and Working Platform Certificate, a signed copy of which must be provided to the Specialist prior to the Specialist's commencement. The design(s) shall include for all piling rigs, ancillary plant and equipment and wheeled transport including articulated and ready mixed concrete lorries and the checking of any retaining structures which support the Working Platform. Where it is not possible for the Specialist to have exclusive use of the Working Platform, the Specialist's agreement to any other activities to be carried out concurrently must be obtained before they are commenced.
14. **Surface Water and Groundwater.** Any pumping or drainage required to keep the site free of flooding, surface water or any water and slurry arising from the Specialist Works.
15. **Offloading and Loading:** Availability free of charge, and for uninterrupted use, of appropriate work equipment or facilities complying with the Construction (Design and Management) Regulations 2015 & Work at Height Regulations 2005 (as amended 2007) to prevent falls from delivery vehicles.
16. **Health, Safety and Welfare.** Health, safety and welfare facilities as required to comply with the CDM (2015) Regulations and any other statutory regulations or rules, orders or regulations of any authority having powers related to the Specialist Works. Such facilities as a minimum to include the supply of drinking water, washing facilities including hot and cold running water, and secure, lockable male and female changing/drying facilities and toilets.
17. **Environmental.** Attendances, facilities and licences to comply with environmental legislation and rules/order or regulations of the Environment Agency and other statutory bodies.
18. **Temporary Lighting.** Background and task lighting to Working Surfaces to allow safe working and safe access and egress and to facilitate execution of the Specialist Works.
19. **Water Supply.** Within the working, storage and preparatory operation areas, potable water supply at mains pressure take-off points and sufficient for the operations, including (where applicable) charging of bores, bentonite/drilling fluid mixing, concrete/grout mixing and cleaning of plant.
20. **Electricity.** Within the working, storage and preparatory operations areas, sufficient power take-off points and power.
21. **Communication Facilities.** Provision of internet access and designated areas for mobile phones.
22. **Guide Walls.** The setting out and checking, construction and later removal of reinforced concrete guide walls (where required). The top of the guide wall shall be a minimum of 1.5m above water levels encountered during construction of the Specialist Works.
23. **Setting Out.** Provision of clear, accurate and robust setting out and levels, checking and maintenance of individual pile/panels positions as necessary throughout the contract, provision of permanent datum points, base lines, structural grid lines as required and as built survey information.
24. **Checking.** Checking the positions and levels of all piles/panels, during the progress and on completion of the Specialist Works (where practicable) including the prompt countersignature of the Specialist's record sheets by an authorised representative of the Client before the Specialist's plant has left site.
25. **Attendant Excavator.** The provision of a 360 degree excavator (and appropriately qualified operator) with a certificated minimum 1Tonne lift capacity in full time attendance to each rig for all operational purposes including removal of excavated or displaced material (including mud slurry and excess concrete from around the Specialist Works) in sufficient time to prevent the formation of spoil heaps impeding the Specialist Works, the handling of concrete delivery pipes, the unloading, transportation and installation of reinforcement and other general duties.
26. **Spoil Removal and Waste Management.** Classification, removal from site and disposal of excavated or displaced material including mud slurry and excess concrete from the Specialist Works in accordance with current legislation, rules/order or regulations of the Environment Agency and other statutory bodies including notification to the Environment Agency where arisings are classified as hazardous waste. Classification and disposal from site of wastewater from the Specialist Works (such as concrete wash out from agitators and ready mixed concrete delivery trucks) to comply with current legislation, including for filtering or the provision of settlement tanks as appropriate.
27. **Wheel and Road Cleaning.** Manned wheel-cleaning facilities and/or road-cleaning, as necessary.
28. **Protection.** Protection of the works where taken over by other trades or contractors or where the Specialist has left site, whichever occurs first.
29. **Empty Bore/Panel Reinstatement.** Backfilling of any empty bore/panel excavation with a suitable material which will not obstruct or be deleterious to the works but which will ensure the stability of the Specialist Works and will maintain compliance with Items 11, 12 and 13.
30. **Building up.** Building up of piles/panels or any necessary modification to the sub-structure as a result of the Working Platform level being less than 0.45m (or as otherwise agreed) above the specified cut-off level.
31. **Trimming.** Cutting back heads of piles/panels, including overbreak and casing left in, down to the specified cut-off levels (including preparation of the surface of the pile head for integrity testing); cutting back overbreak from the face of retaining walls; disposing of debris; and preparing, straightening, cutting and bending the reinforcement, including test piles/panels, caps and reaction piles/panels or anchors; provision of all necessary engineering, setting out and level control to facilitate the installation of debonding materials/agents to agreed pile/panel reinforcement placement tolerances. Stripping formwork to recesses and box outs etc, including templates to starter bars or bolts.

GUIDANCE ON WORKING PLATFORMS FOR TRACKED PLANT

1. Design

- 1.1. The HSWA 1974 and CDM Regulations 2015 require the Principal Contractor to appoint competent Designers in respect of Working Platform design. This legislation explains how competence can be assessed by reference to professional qualifications or professional memberships and by reference to practical experience of the design of working platforms. Principal Contractors must be satisfied that a competent Designer has been appointed by them in accordance with the relevant legislation before they complete and sign the WPC.
- 1.2. The stability of tracked plant is fundamentally dependent upon the provision of a suitable and sufficient working platform. It must be properly designed and installed to a recognised standard. Whilst the same type of rig may be operated by different companies, the design bearing pressures may differ due to the specific operating configuration of the rig and/or any modifications. Details of the plant to be used and bearing pressures will be provided by the specialist contractor in advance of work commencing.
- 1.3. Working platform design is extremely sensitive to the bearing pressure and type of fill used in the platform. (For example, changing the angle of friction of the fill from 35 degrees to 45 degrees can halve the platform thickness.) It is therefore advised that the Designer may have to adopt conservative/cautious estimates of platform shear strength unless higher values can be demonstrated by testing or with reference to appropriate published data.
- 1.4. The working platform must be *safe for pedestrian access and free draining* to prevent the build-up of water and slurry. It must be free from harmful materials and contaminants. In the case of fine-grained sub-grades, a separation/filter membrane should be installed beneath the platform material to inhibit 'pumping' and infiltration of the fine-grained soils up into the platform material during wet weather (which can impair platform performance and increase maintenance costs).
- 1.5. Proof testing of the platform can be carried out with a suitably sized circular plate subjected to the maximum design loading. Such testing, as part of an appropriately designed testing regime, should highlight any gross inconsistencies in platform performance. Potentially, significant savings in platform thickness and cost may be realised by adopting a more detailed testing strategy.
- 1.6. The working platform must have a design life which starts before delivery of the piling equipment and ends on completion of all piling works. This includes load testing, integrity testing, investigation of non-conformances and any remedial works.
- 1.7. The specialist contractor is to advise the Principal Contractor at the earliest practicable opportunity should the specialist contractor become aware of any circumstances relating to the working platform that renders it unsafe.

2. Installation

- 2.1. The FPS Working Platform Certificate is mandatory for all sites where a rig or attendant plant operates. It must be signed by an authorised representative of the Principal Contractor. This signature confirms that the legal duties required under CDM have been carried out.
- 2.2. If the working platform is to be constructed or removed in phases while piling works are ongoing, then the extent of the platform must be clearly defined on the certificate and, in accordance with good practice, physically on site. This is particularly important where the platform material is removed from an area previously made available to the specialist contractor.
- 2.3. The working platform *must* provide *safe access* for all plant deliveries, sub-contractors and personnel associated with the specialist operations. Properly designed and installed, the working platform could also provide suitable and safe access for following trades for the whole project.
- 2.4. Poor definition of the edge of the working platform is a major cause of tracked plant instability. It is good practice that the working platform should extend at least 2m beyond the pile position/edge of the building to ensure sufficient safe working area for the specialists personnel and attendant plant. Where having to work within this 2m zone is unavoidable the Designer is to be informed of the requirement to design the platform for working up to its edge.
- 2.5. Where access ramps are used to move between working levels these must be of sufficient gradient and width to allow the plant to move safely with the stability constraints of the machine. Ramps must be in a straight line between working areas. Rigs and cranes cannot change direction on ramps. Where a change in direction is required, this must be on a flat level platform.

3. Maintenance, modification, repair and reinstatement

- 3.1. The working platform must be kept free draining. Water and slurry which is allowed to build up on the working platform can hide such hazards as recently constructed piles, trip hazards, uneven or unstable ground, services and excavations. Slurry can be transferred to work equipment which increases the risk of slips on steps as well as difficult handling of work tools.
- 3.2. Obstructions encountered during installation of the piling works will generally require excavation to remove them. This can create a 'soft spot' which can result in the rig overturning. It is essential, therefore, that any excavations made in the working platform are reinstated to the designed standard, including any reinforcement and separation filter/membrane.
- 3.3. The working platform shall be subject to regular inspection by a competent individual appointed by the Principal Contractor (e.g. the Temporary Works Co-ordinator) throughout its design life and after any reinstatement or any works which might have modified it. Any damaged or inadequate areas identified must be reinstated to the designed standard. Following the regular inspection, the Working Platform Regular Inspection Log shall be signed by an authorised representative of the Principal Contractor and issued to the specialist contractor with a layout drawing of the working platform amended as appropriate.

4. Working Platform Layout

- 4.1. Items that must be included and properly located on the working platform layout drawing and be notified by the Principal Contractor to the specialist contractor would include: detail of platform edges and 2m delineation, trial pits, services or voids, areas of backfilling, known underground basements; areas that are covered by the certificate or permit, test locations (if specified by the Designer of the platform) and any other feature that may affect the safety of operations.