



Lifting Operation Plan of Works

180-055 – Rev 1

These RAMS are based around “BASIC” lifts which would be delivery & collection of items to and from BAM sites. The difference is that these RAMS are not for placing loads into a final position only general min radius work.

Business Systems
[28/02/2018]

Project: BAM Construction Ltd – Plant Depots and Sites

Project No. WPD01 Rev8

Table 1 Details of Lifts

Date: 28/02/2018

Appointed Person Phillip Cook CPCS 03278706/1	
Description of Lift: Loading and unloading lifting operations by Palfinger PK63002 EH crane SERIAL NO 100138423 fitted with H.P.S.C. lifting plant and construction equipment in Wellingborough, Morley and Construction sites. All loads lifted in this lift plan are loads lifted from the vehicle bed onto the ground alongside the vehicle, or loaded from ground alongside the vehicle onto the vehicle bed. Any other lifts specifically lifting and placing loads into position at distance or height will require a specific lift plan. See risk assessment 180-018-2017	
Date of lift Daily on going	Time of lift As required

Table 2 Details of load

All loads below are with vehicle lifting with stabilisers at 100%, fully extended to 8.60m (front) and 5.20m (rear). Reference to manufacture's load chart which is attached to this lift plan. It must be checked by the operator if there is any doubt with the load being lifted at the required radius.

All lifts to side and rear only.

	1 st Type of Load Small Telehandler Manitou Mt 625	2 nd Type of Load SMALL PLANT Various small items of Plant Transformers/Generator Pallet Truck/Pressure washers/Tini-greeny	3 rd Type of Load SKIPS Various Types Forklift Tipping Skip/Duel-flow/Cone/Packs of Mortar Tubs/Box Trucks
	Weight Maximum 4710kg	Maximum 1000kg	Maximum 1000kg
Dimensions	See Below	Various	Various
Position - Centre of Gravity (to be determined if required)	Lifting Points	Lifting eyes	Lifting eyes
Highest lift	1.92m	4m	4m
Largest radius	5m	13.6m	13.6m
Designed lifting point	Yes	Yes	Yes
Out Rigger Loading's	180Kn	180Kn	180Kn

Project: BAM Construction Ltd – Plant Depots and Sites

Project No. WPD01 Rev8

	4 th Type of Load FUEL/BOWSERS Static/Towable	5 th Type of Load ROAD PLATES Various Thickness	6 th Type of Load SCAFFOLD TOWERS
Weight	Maximum 1550kg	Maximum 1500kg	Maximum 500kg
Dimensions	various	3m x 2m	3m x 2m
Position - Centre of Gravity (to be determined if required)	Lifting eyes	Lifting Holes	Centre of gravity
Highest lift	4m	4m	4m
Largest radius	5.9m	5.9m	13.6m
Designed lifting point	Yes	Yes	No
Out Rigger Loadings	180Kn	180Kn	180Kn

	8 th Type of Load Small Containers/Cabins	9 th Type of Load Furniture	10 th Type of Load Manhole rings
Weight	2500kg	Various all below 250kg	Max1500kg
Dimensions	Approx. 6.5m x 3m	Various	2m Dia
Position - Centre of Gravity (to be determined if required)	Lifting eyes	Centre of Gravity	Special lifting devise
Highest lift	4m	4m	4m
Largest radius	13.6m	13.6m	13.6m
Designed lifting point	Yes	No	Yes
Out Rigger Loadings	180Kn	180Kn	180Kn

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	11 th Type of Load Concrete Fence Bases	12 th Type of Load Large Accommodation units	13 th Type of Load Transformers and electrical panels Stretcher cage
Weight	750kg	6000kg	500kg
Dimensions	750mm x 750mm x 800mm	10m x 3m x 3m	3m x 1m
Position - Centre of Gravity (to be determined if required)	Lifting eyes	Lifting eyes	Lifting eyes
Highest lift	4m	6m	4m
Largest radius	13.6m	6.5m	13.6m
Designed lifting point	Yes	Yes	Yes
Out Rigger Loadings	180Kn	180Kn	180Kn

	14 th Type of Load Fire rated office unit	15 th Type of Load Palletised materials	16 th Type of Load HERIS FENCING Various Bundles on pallets (max on pallet) 25
Weight	2300kg	1000kg	Max 500kg
Dimensions	4.8m x 2.7m	1.5m x 1.5m	3.450m x 3m
Position - Centre of Gravity (to be determined if required)	Lifting eyes	Central – unless confirmed otherwise	Yes
Highest lift	4m	4m	4m
Largest radius	13.6m	13.6m	13.6m
Designed lifting point	Yes	Using Pallet Forks + Net	No
Out Rigger Loadings	180Kn	180Kn	180Kn

Assistance should be sought from designer, manufacturer and technical services.

Table 3 Ground Conditions

Access/egress for crane & transport	Must have good clear access
Lifting location	Must be good stable and level ground with no obstructions.
Ground bearing capacity	Site Engineer to confirm ground is suitable to take loads imposed by stabilisers. 108kN point load. Wellingborough – Max allowable bearing pressure 200kN/m ² Morley – Max allowable bearing pressure 150kN/m ²

Reference should be made to read it note 10 “mobile crane stability on site – ground conditions” and assistance sought from crane hire company and technical services.

Table 4 Details of Crane

Make & Model	PALFINGER PK63002 EH	
Max Lifting Capacity	12000KG @ 4.4M (See attached lifting PK 63002 EH spec sheet) Fitted with HPSC	
Maximum radius	13.6m Lifting capacity 3.4te @ 13.6m	
Stabiliser spread	Full 8600m	Partial 5676m
Stabiliser Point load	180kN point load.	
Standard Stabiliser Mats	0.5m x 0.5m (0.25m ²) generates ground bearing pressure 720kN/m ² .	
Additional Stabiliser Mats	0.96m x 0.96m (0.9216m ²) generates ground bearing pressure 195.4kN/m ²	
Details of Over lift limit device	Check valve	

Additional advice on crane selection must be sought from crane hire company

Table 5 Lifting Accessories

Slings (wire rope):	2 No 2 ton x 2m Round Slings 3 ton x 6m Duplex webbing sling 3 ton x 6m Duplex webbing sling 3 ton x 6m Duplex webbing sling 3 ton x 6m Duplex webbing sling 2 ton x 3Mtr Round sling 2 ton x 3Mtr Round sling 2 ton x 3Mtr Round sling 2 ton x 3Mtr Round sling
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Slings (chains): 4 leg Chains 6.7 ton 6m EWL 4 leg Chains 6.7 ton 4.6m EWL 4 leg Chain 8.4 ton 3m EWL	Shackles: 8 No 3 ton Dee Shackles
Other Accessories:	Lifting Clutch SWL2.5 ton Lifting Pins SWL1000 kg 12 Mt Fall Arrest Block Pallet forks to be requested when required 10 Number Hardened Plastic Edge Protection 10 Number Galvanised 1.2m edge protection for Bricks

Table 6 Identification of Hazards

Proximity Hazard		Visibility Hazard	
Overhead power lines	Y/N	Can driver see load at all times	Y/N
Other overhead obstacles	Y/N		
Underground services	Y/N	Load Hazard	
Excavations	Y/N	Slings difficulties	Y/N
Unstable/soft ground	Y/N	Top heavy	Y/N
Hazardous chemicals/materials	Y/N	Sharp edges	Y/N
Confined working area	Y/N	Weather Hazards	
Restricted access – width	Y/N	Wind	Y/N
Restricted access – height	Y/N		
Other vehicles	Y/N	Workplace Hazards	
Other operations	Y/N	Falls from height	Y/N
Rail/road ways	Y/N	Temporary/False works required	Y/N
Others entering working zone	Y/N	Attaching/Releasing slings/chains	Y/N
		Housekeeping	Y/N
		Other hazards identified	Y/N

The above lists are not exhaustive

Table 7 Assessment of Risk

1. Hazard Present	2. Risk	3. Action to Control Risk
Overhead power lines Other overhead obstacles	Electric shock Burns Damage to power lines/Machinery Damage to Trees	Only trained and competent CPCS operator and CPCS Slinger/Signaller to operate Lorry Loader and sling load. Operator MUST have received full familiarisation training on the make and model palfinger PK 63002 EH H.P.S.C. crane unit and a record attached to this Method Statement Operator to check for overhead power cables before accessing site, any lifting operation must be 9 m minimum away from power cables on wooden poles when the jib is fully extended and 15 m away when on steel poles/pylons when fully extended. Do not lift if boom can collide with Trees
Lorry Loader overturning/ground conditions	Crushing of personnel damage to vehicle/structure	Trained CPCS operator current 12 monthly thorough examination daily/weekly inspection Set up correctly, in correct position on good level ground, base area to be approved. Point load 180kN. Outriggers must be fully extended as required by manufacturer
Capacity	Injury to personnel Damage to vehicle	All loads lifted to be within the safe working load limit of the Lorry Loader crane at specified radius Operator to confirm ASLI is in good working order, any defects must be reported immediately to supervisor. Slinging signaller to be present to assist positioning the load.
Underground services	Overturning of vehicle Ruptured water/gas main/optic fibre cables	Ground conditions must be check and verified by site that the ground can take the point loads imposed by the Lorry Loader vehicle 36 ton Maximum (larger mats may be required if ground is not suitable)
Excavations	Overturning of vehicle Ground collapse	Only trained and competent operator to ensure vehicle is not set up next and excavations. If vehicle is to be set up near any excavation then full survey and load bearing assessment must be complete and signed off
Hazardous chemicals/materials	Injury to personnel	Full COSSH assessment available with vehicle for any Hazardous chemicals/materials used

Other Vehicles Others entering work zone	Collision-loads with vehicles Personnel	Trained and competent CPCS. Operators to ensure no other vehicles are operating in area. All non-involved personnel kept clear of designated loading and offloading areas. Area to be cordoned off,
Sharp edges	Damage/failure of lifting equipment	Sharp edges to be protected by packing/sleeved slings All lifting equipment visually inspected weekly and recorded Inspected daily before use
Wind/weather	Failure of load and crane Overturning Clash load with other structures Freezing Conditions	Maximum 9.2 m/s permissible wind speed when operating crane. This will reduce to 5.19 m/s when lifting cabin/container units or large wind sail area loads Suitable task lighting to be provided where required. Snow, Ice & freezing temperature should be considered before work commences
Falls from Height/Vehicles	Falling from vehicle, Entrapment. Contact with chains or boom of crane, Load shifting during loading/offloading operations, Load shifting during transit to/from site	No operatives allowed onto the bed of any vehicle without edge protection being fitted. Operator/slinger involved in lifting operation to stand clear when chains/hook/boom is being raised/lowered. Monitor load during loading/unloading operations Check load for stability before loosening chain or straps in case of shift during transit
Falls from Height Attaching releasing slings/chains	Fall from roof height Ladder Vehicle bed Failure of slings	Inertia reel attached to Lorry Loader hook with operative wearing a full body harness when gaining access to roof level by footed ladder to attach chain to lifting points on unit. Safety hard hat fitted with chin strap MUST be worn when accessing ladder or working at height. Edge protection fitted to vehicle All lifting accessories to have before use inspection and weekly recorded inspection c/w 6 monthly thorough examination
House keeping	Slips trips and falls	Housekeeping policy implemented. Bed of vehicle and work area to be kept clean and tidy
Failure of load	Load falling	Use certificated lifting equipment and accessories (6 Monthly), Carry out before use daily/weekly Trained CPCS operators/slingers to attach load

Operational Requirements				
All other items that require to be lifted on site, in Morley or Wellingborough depot that are not listed in this lift plan can only be lifted providing the operator authorises the lift, checking with the appointed person if required, and the weight of the items being lifted are known with all items have lifting eyes attached. The operator must also confirm that the lifting Manufactures lifting chart/drawing attached has been checked and verified that the item can be lifted safely at the required radius				
Communication between crane operator and banksman:			Radio	Hand signals
				Yes
Operational Restrictions				

Table 8 Method Statement

Title	Name and Accreditation	Title	Name and Accreditation
Appointed Person	Phillip Cook	Hiab Operator / Slinger	Neil Townley
		How identified?	
Lift Supervisor		Signaller(s)	
		How identified?	
Crane Driver(s)	Neil Townley	Crane Erectors/Rigger	

Table 9 Personal Protective Equipment

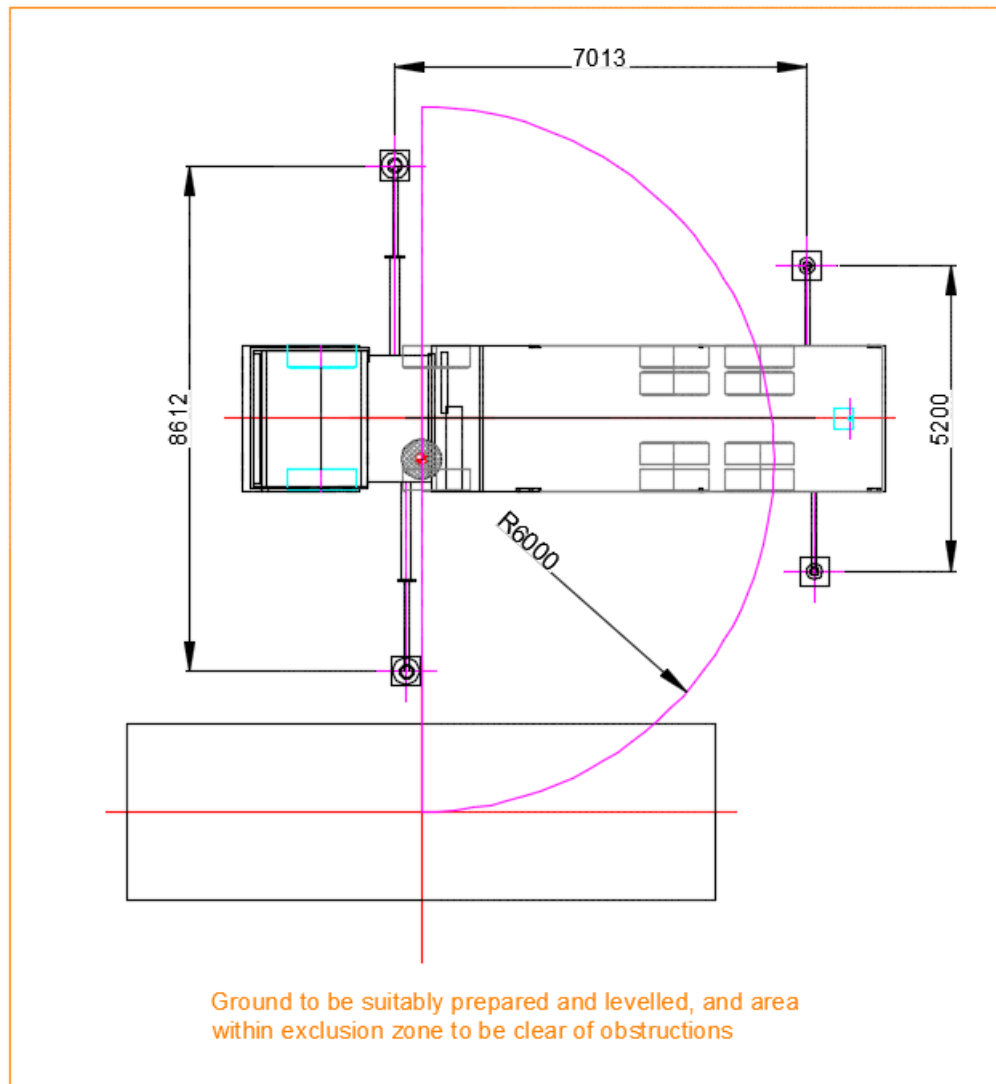
All operatives, involved with the lifting operation(s), detailed in this method statement, shall wear the following					
Hard Hats with chin strap	y	Protective Footwear	y	Gloves	y
High Visibility Clothing	y	Eye Protection	y	Safety Harness	y

Table 10 Sequence of Operations (use additional sheets if required)

1.	Method statement briefed to all personnel involved in Lorry Loader lifting operation
2.	Lifting equipment safety record to be completed and filed in Wellingborough depot and when arriving on site
3.	On arrival on site the operator should seek out the lift co-ordinator, the lift co-ordinator is responsible for ensuring the ground conditions are suitable for the loads imposed by the hi-ab outriggers pertaining to the lift. (SEE ATTACHED GROUND BEARING CAPACITY SIGN OFF SHEET FORM 197-803) If asked to produce certificates for the chains, slings or other lifting accessories the operator must have them readily available. All certificates must be in date and be relevant to the equipment used, the operator must also be able to produce authorisation to use the necessary equipment. CPCS operator and CPCS Slinger/signaller C/W Formalisation Training
4.	The operator is to ensure that the area in which the vehicle is to be positioned must be firm and level as verified by the site to support the loads imposed, there must be ample room to fully extend the outriggers to the required length as per the Manufactures recommendations, with no obstructions in the working area and suitable task lighting where required. Overhead and underground Hazards are to be identified prior to lifting i.e. manholes or overhead cables MINIMUM SAFE DISTANCE FULLY EXTENDED JIB AND LOAD MUST BE 9 M CLEARANCE FROM CABLES ON WOODEN POLES AND 15 M FROM METAL POLES/PYLONS
5.	Park the vehicle in the correct position to carry out the lifting operation, extend the out riggers and place suitable mats under the outrigger support legs, power down the leg to support the vehicle in a stable manner. (At no point should the wheels be raised/lifted clear of the ground as they partly complete the stabilization of the unit
6.	Area should now be cordoned off to prevent unauthorised access to lifting operation area and segregate from other operations
7.	Then unfold the crane jib (Operator to check for leaks or defects as per the daily checklist) extend out jib and position over the load to be lifted.
8.	If gaining access to the bed of the vehicle the edge protection must be fitted and access gained by footed ladder
9.	With assistance from site slinger signaller, attach the relevant lifting equipment to the crane hook and then load, lift the load just clear of the ground/vehicle bed and check that the load is secure stable and level then lift slew jib in/out lower to the position required. Check load position is secure and stable in the final position the remove lifting equipment from load. Repeat for any other loads required to be lifted on/off vehicle, then remove and store lifting equipment jib in/slew and fold away into storage position the crane unit
10.	Power up the stabiliser legs and retract the outriggers into store position c/w mats
11.	If Transporting containers/cabins lifting bonds should be fitted (pre-slung) to prevent slinging at height, If bonds are not fitted then slings should be attached by footed ladder with harness attached to crane hook. At no times is the operator to gain access to the cabin/container roof. Operator accessing by ladder or working at height must wear safety hard hat fitted with chin strap
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22.

Site Plan Showing Position of Crane and Load



Plan to show position of :-

Crane, barriers and signage, load take off point, load landing point, surrounding structures, general obstructions, direction of slew and any other relevant features that affect the lift.

Specialist Advice

Where the Appointed Person has any doubts as to the appropriate procedures whilst planning lifting operations, he must seek specialist assistance. To be obtained from BAM Plant, Crane Hire Company or Technical Services. Possible scenarios where specialist advice may be required could be:

- The use of lifting attachments required for a complex lift
- Tandem lifting
- Proximity to underground services
- Lifting operations being carried out within a confined space
- Proximity to buildings and other hazards
- Ground conditions

This List is not exhaustive.

Lifting equipment safety record and record of method statement briefing to be attached to this plan of work

A wasp should be carried when appropriate

PALFINGER
PK 63002-EH D

LIFTING CAPACITY DIAGRAM

Stabilizer situation:

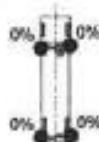
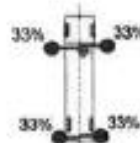
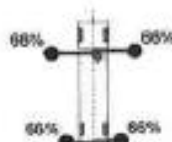
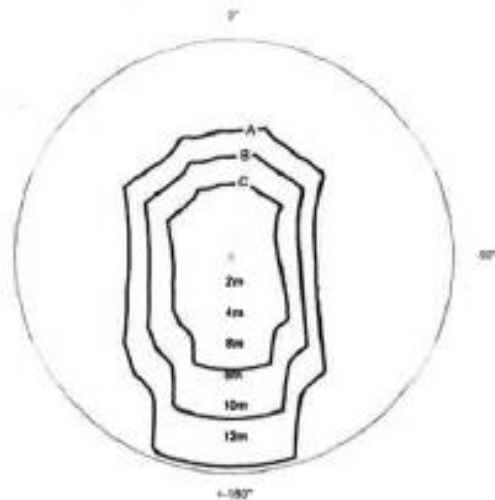
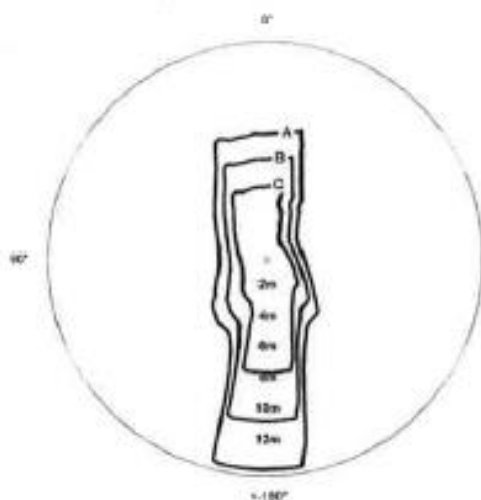
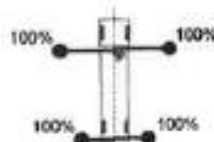
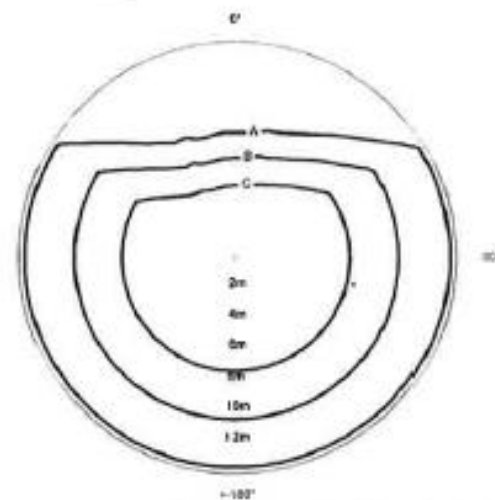
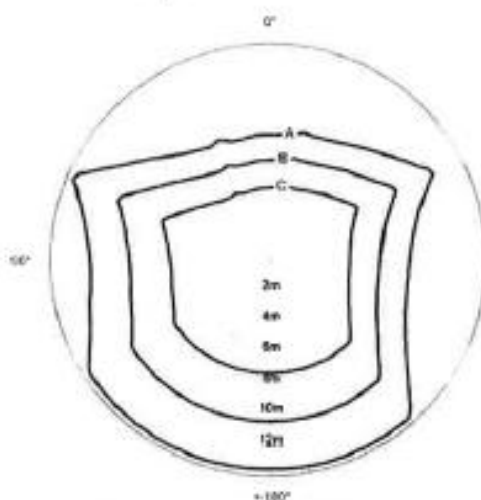
Fully supported

100170404 / S509-SKD

ValvoFM

HPSC

- Stabilizer not active
- Stabilizer active
- % Outrigger stroke

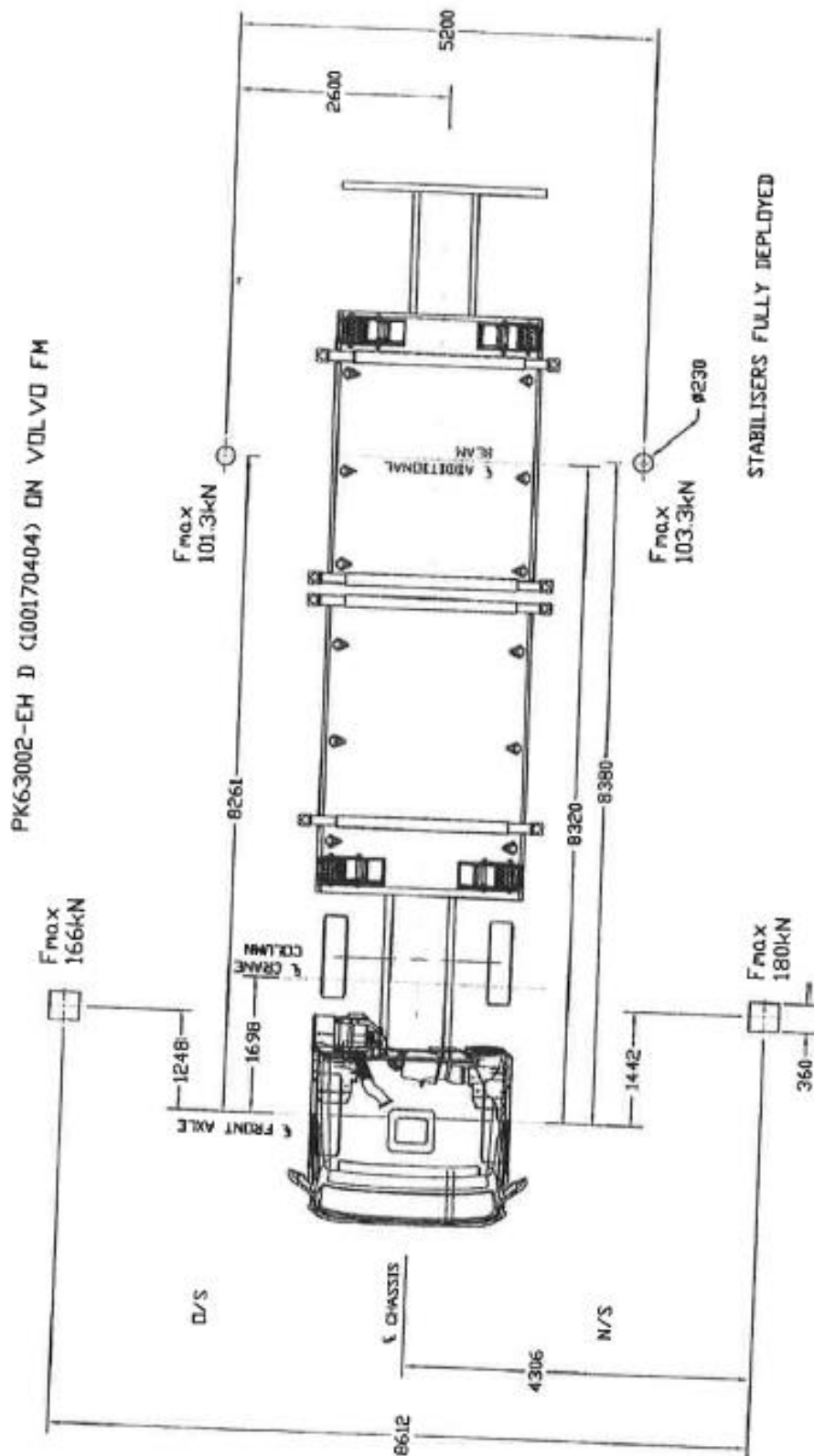
Max. occurring stabilizer force F_{max} 240kN

A: 3.700kg
B: 4.850kg
C: 7.200kg

A: 3.700kg
B: 4.850kg
C: 7.200kg

A: 3.700kg
B: 4.850kg
C: 7.200kg

A: 3.700kg
B: 4.850kg
C: 7.200kg


Load values are according to PALTRONIC parameters provided by the installer

Adjustment Date: 21.5.2014

Version:
70H / S3

Installer ID: GBT.H. 02965E193/623986742663



		Certificate of Design Approval for Temporary Works/Falseworks		Form: 220-16 Rev: 3
Project:	BAM PLANT YARD WELLINGBOROUGH	Contract No.	5558	
Structure or Section:	CONCRETE HARDSTANDING IN PLANT YARD			
Original design by:	Load/ Settlement tests carried out by Listers Geotechnical Consultants			
Detail checked:	Concrete hardstanding			
Checked by:	Michael Redhead	Date:	20/02/2015	

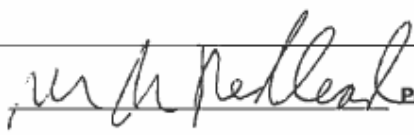
I have checked the above design on documents:

Settlement test report dated 30 June 2014 from Listers Geotechnical

Photographs & location plans of the proposed area supplied by BAM Plant on 15 February 2015

and consider that the work can safely be built to these details with the following provisions: -

The allowable bearing pressure on the surface of the concrete hardstanding is not to exceed 200 kN/m2

Signed:  Position: Principal Engineer Technical Services

Copies to:

☐ Temporary Works Co-ordinator	☐ Martin Ross BAM Plant
☐ Site Manager	☐ Andy saie BAM Plant
☐ Technical Services - File	☐

	Certificate of Design Approval for Temporary Works/Falseworks		Form: 220-16
			Rev: 3

Project:	BAM PLANT YARD WELLINGBOROUGH	Contract No.	5668
Structure or Section:	TARMAC YARD SURFACE AT MORLEY DEPOT		
Original design by:	Load/ Settlement tests carried out by Construction Testing Solutions Ltd		
Detail checked:	Tarmac yard		
Checked by:	Michael Redhead	Date:	7/12/2016

I have checked the above design on documents:

Plate loading settlement tests dated 7 October 2014

Photographs the proposed area supplied by BAM Plant on 6 December 2016, plus a written description.

and consider that the work can safely be built to these details with the following provisions: -

The allowable bearing pressure on the tarmac surface of the yard is not to exceed 150 kN/m² (15 tonnes/m²)

Signed:  Position: Principal Engineer Technical Services

Copies to:

☐ Temporary Works Co-ordinator	☐ Andrew Hilton BAM Plant
☐ Site Manager	☐ Stephen Miller BAM Plant
☐ Technical Services - File	☐ Martin Ross BAM Plant