METHOD STATEMENT

for the

TRANSPORTATION OF 26.1t B75 BLADE

From

ABP ALEXANDRA DOCK, HULL

to

HULL CITY CENTRE

prepared for

SIEMENS

Project Number	AA0971-04
Project	B75 BLADE MOVE
Client	SIEMENS
Document number	ALE-MS-AA0971-04-002

A	08/11/16	UPDATED AS PER COMMENTS	IK			
0	03/11/16	First Issue	IK			
Revision	Date	Description	Prepared	Checked	Approved	Approved
			ALE			Client

CONTENTS

1. INTRODUCTION

1.1. SCOPE OF DOCUMENT

This Method Statement is concerned with the transport of 1 No. B75 Blade from ABP Alexandra Dock to Hull City Centre.

B75 Blade: 75590 x 4345 x 5348 mm (L x W x H) @ 26.1t

The Blade will be loaded onto two SPMTs by using two cranes, which will perform a tandem lift. Both ends of the blade will be secured on bolsters, the larger end will rest on 6 x 4 (axle line x file) SPMT and the tip (smaller) of the Blade will rest on 4 x 2 (axle line x file) SPMT. The Blade will then travel from ABP Alexandra Dock to Hull City Centre.

It is the aim of this Method Statement to define and describe the equipment, safe system of work and procedures that will be employed by ALE to conduct the operations in compliance with the following legislative and guidance documentation:

LEGISLATION
Health and Safety at Work Act 1974
Lifting Operations and Lifting Equipment Regulations 1998
Provision and Use of Work Equipment Regulations (PUWER) 1998
The Management of Health and Safety at Work Regulations 1999
Safety, Health and Welfare act 2005

APPROVED CODES OF PRACTICE
BS7121-1 Safe Use of Cranes part 1 – 2006
BS7121 Safe Use of Cranes part 2 – Inspection, testing and examination
BS7121 Safe Use of Cranes Part 3 – Mobile Cranes

OTHER
Abnormal Load Engineering Limited General Conditions
Abnormal Load Engineering Limited HSQE Procedures

1.2. PARTIES

The relevant parties involved with operation are listed below:

- SIEMENS	-	Main Contractor
- SIEMENS	-	Client
- ALE	-	Subcontractor Transport & Lifting
- Crane Hire Ltd.	-	TBC

2. MANAGEMENT OF OPERATIONS

Outlined below are the responsibilities of ALE personnel. This section also details the procedures to follow if a deviation from the original operations procedure occurs.

2.1. THE ALE ENGINEER & PROJECT MANAGER

The ALE Engineer will prepare the Method Statement along with all drawings and calculations, which will be checked by the ALE authorised Manager. It is the responsibility of the ALE Project Manager to ensure that the on-site Operations Supervisor is adequately briefed on the content of this Method Statement.

2.2. THE ALE OPERATIONS SUPERVISOR

Prior to the commencement of the works the supervisor must ensure that all site personnel are adequately briefed on the contents of this Method Statement. This briefing shall take the form of a short 'toolbox talk'. The supervisor must liaise with the ALE manager should site circumstances require material change to the methods to be employed during the operation and follow the 'ALE management of change procedure' provided within this document. It is the responsibility of the supervisor to have completed all safety checklists and briefings as identified within this scope of works.

2.3. MANAGEMENT OF CHANGE

This procedure has been prepared to categorise and authorise any intended deviation from the intended scope of works outlined within this safe system of work. The ALE Operations Supervisor on site is responsible for the work being conducted in accordance with the current approved Method Statement. Any deviation from that approved method is categorised as follows:

2.3.1. Category 1 – (Minor) Deviation

The ALE Operations Supervisor on site considers a deviation from the intended scope of work to be a small adjustment to meet local site conditions. They must bring this matter to the attention of the Site Manager. Where the client agrees that the adjustment is minor and would not introduce any risk to personnel or the integrity and safe operation of the equipment, authorisation to proceed may be approved by both parties concerned by signing of the changes to the Method Statement in the record of changes box provided within the Method Statement.

Any changes must be communicated back to the ALE Engineer/Project Manager and communicated to the work force by means of a toolbox talk, which must also be recorded. The work may then proceed.

Any change from the intended scope of work must comply with the manufacturer's recommendations for the use of the equipment and any associated procedural documentation, i.e. ALE and client procedures and/or requirements. Where there is any doubt as to the implications changes may have on the safety and/or integrity of the system/equipment or any conflict from the client's representative on site, for whatever reason, this change will become a category 2 – Major and the appropriate category 2 action will apply.

2.3.2. Category 2 – (Major) Deviation

Category 2 deviations are those that the ALE Operations Supervisor or the client's nominated representative considers to be significant or deviations from category 1 that become category 2 as identified in 2.3.1 above. Any proposed deviations/changes to the intended scope of work under this category shall be communicated to the ALE Engineer/Project Manager who will revise the Method Statement and liaise with the client representative to agree any changes for approval prior to commencement of work.

Where necessary, engineering deviations/changes will be approved by the client or nominated third party. On approval, any changes in the Method Statement and/or intended scope of work affecting the safe system of work will be communicated to the work force by means of a recorded toolbox talk. All deviations and/or changes will be recorded and authorised within the record box provided within this Method Statement.

A record of authorised changes during scope of work is available within the template of any Method Statement devised for the erection and/or operation of any (ALE) equipment.

Cat	Date	Change to MS	Action	ALE Engineer	ALE Supervisor	Client's Responsible Person

2.4. SITE SAFETY

When there is a situation or area on site that any person believes is no longer safe, and the unsafe situation is caused by factors beyond the control of ALE personnel, the supervisor has the authority to stop all ALE activities at all times.

The unsafe situation/activities/area will be reported to the client for the client to take measures to make it safe again for the activities to continue.

No ALE activities will be performed until the situation or area is again made safe for working by the client or the client's agent. Should the measures taken by the client prove inadequate, the works can and will be stopped until adequate steps have been taken. ALE cannot be held responsible for any delays resulting from works being stopped due to unsafe situations.

2.4.1. TAKE 5 POINT OF WORK RISK ASSESSMENT

The TAKE 5 Risk Assessment is to be completed by the supervisor or acting supervisor of the crew before any activities begin. The TAKE 5 is a monitored and audited document that is designed to ensure the safety of ALL personnel before work commences and confirms the correct control measures are in place to maintain the safety of all involved or interacted with.

The TAKE 5 is to be conducted at the beginning of the shift and ALL findings are to be discussed with the entire crew and client after completion. Any hazards identified via the TAKE 5 are to be relayed to the Project Manager or Operations Department for IMMEDIATE rectification and the job is not to continue until all requirements have been address and fulfilled either by the client or ALE.

The TAKE 5 (White Copy) is to be signed and filed with the RAMS associated with the job and the HSQE Advisor/Manager for the region is made aware of the issues raised.

TAKE 5 Point of Work Risk Assessments are fact based documents and not opinion based, which is supported by the Global Managing Director of the business if the job is stopped for safety reasons. No employee or subcontractor will be disciplined or receive a financial penalty for safe behaviours.

2.5. TOOLBOX TALK RECORD

The following toolbox talk record is provided for the purpose of recording the initial toolbox talk on commencement of the works under the scope of this Method Statement. A toolbox talk record sheet is also provided within the appendix of this document and should be used to record any future toolbox talks conducted on site. A minimum of one daily toolbox talk should be conducted at the earliest opportunity prior to commencement of works.

The record is to be completed by all ALE and subcontracted labour personnel employed within the scope work and working to this Method Statement and associated Risk Assessment.

Prior to commencing the operation all site personnel are to sign below to confirm that a clear briefing explaining the job has been given and is understood:

'I am satisfied that I understand the work to be carried out. All known hazards have been identified to me and I have been made fully aware of the control measures in place to reduce any risk to both myself and others'.

EMPLOYEE NAME:	SIGNATURE:	DATE:
Content of TBT:	Supervisors Signature:	

3. PREREQUISITES AND INITIAL CONDITIONS

3.1. GENERAL

1. Method Statement is subject to approval prior to the commencement of work.
2. Method Statement and Risk Assessment to be read in conjunction by all ALE personnel.
3. After any break in the operational procedure, a walk round and visual inspection will be made of the equipment in its current set up to check that nothing has changed since leaving the work place.
4. Minimum Personnel Protective Equipment (PPE) to be worn on site is as follows:

    - Overalls,
    - Hard Hat,
    - Safety Footwear,
    - Safety gloves,
    - High visibility vest,
    - Safety Glasses,
    - Harness (Task Specific).

3.2. RESPONSIBILITIES

1. Clear area for working afforded at all times by Site Manager.
2. Centre of gravity to be clearly marked on the items to be transported.
3. Site to ensure that ground can withstand imposed by ALE.
4. Work area to be demarked and policed by Site.
5. Transport routes to be clear of obstructions by the client. If the route is not sufficient transportation will not occur.
6. Where necessary road closures to be organized by the client.

3.3. CONTROL OF OPERATION

Outlined below are the responsibilities of ALE personnel associated with ALE's on-site operations.

1. The ALE site supervisor is responsible for the performance of the operational disciplines, which can be divided into two main areas, namely on-site operations and equipment maintenance.
2. After any break in the operational procedure, a walk round and visual inspection will be made of the equipment in its current set-up to check that nothing has changed since leaving the work place.
3. All operations associated with the mobbing and demobbing of the ALE SPMT trailer are under the direct control of the ALE site supervisor.
4. The ALE operators are capable of fixing most problems that can occur during the operations.
5. Other maintenance engineers are available on call to assist in rectifying any equipment malfunction in the shortest possible time.

4. OPERATIONAL PROCEDURES

On the days that the operation will take place there will be a 'toolbox' talk prior to the start of activities that will review the following items:

a) Procedures, requirements and details specified in the work plans and drawings.
b) Review of safety items such as weather concerns, plant activity, escape routes, contingency plans, locations of fire-fighting and personal safety equipment etc.

Note: *Weather forecasts will be obtained prior to the movement. If the forecasts, in conjunction with the actual wind speed readings taken on the site / crane wind speed indicators, do not give a sufficient window of suitable weather, then the movement/lifting programme will be re-assessed.*

c) Designate key personnel, such as slinger-signaller, tagline handlers etc.
d) During loading onto trailers the operator in control shall be responsible for monitoring the pressures in their trailer groups.
e) Complete and sign off all appropriate checklists.

Discuss and give due consideration to any additional appropriate steps that any participant feels is necessary to perform a safe and timely operation.
(Working Operation Limits)

Limits	Go	No go
Wind speed	< 9m/s	> 9m/s
24hr weather forecast (wind)	Dropping	Increasing
Visibility	> 30m	< 30m
Potential lightning	< 30%	> 30%
Surface	Good traction available	Poor traction

4.1. PRE-OPERATIONAL PREPARATORY WORKS

Item	Checked
Appointed Person/Supervisor briefing	
Site Induction attended by all personnel	
Method Statement available for all personnel	
Tool Box talk carried out and recorded	
Certification for all equipment available	
Datum lines marked on the foundation	
Exclusion zones marked with hazard tape	
Crane set-up correctly as per rigging study	

4.2. OPERATIONAL PROCEDURE

4.2.1. OPERATIONAL PROCEDURE MOBBING

1. The SPMT's will be delivered on a 40ft trailer and positioned within a safe operating radius of the 75t mobile crane.

2. Using the mobile crane, the SPMT will be lifted clear of the 40ft trailer allowing it to be removed and loaded to the ground. See De-Mobbing RAMS for information.

3. Depending on the required configuration for the SPMT's, further 40ft trailers will deliver power packs and axles where required and will be connected together ready for loading on site.

4. Once the transporter is mobbed to the required configuration it will be inspected in accordance with the **Self Propelled Pre Operational Check List** attached.

Item	Date and Sign
Self Propelled Pre Operational Check List Completed	

4.2.2. OPERATIONAL PROCEDURE BLADE LOADING

1. The mobile cranes will arrive on site and be escorted into position by the Lift Supervisor.
2. A 55t Crane will be positioned on the tip side of the blade and 90t crane will be placed near the larger end of the blade.
3. The crane will be fully rigged as per the manufacturer's instructions.
4. The Lift Supervisor will check all lifting tackle before use and will ensure tag lines are employed by Slinger-signallers when lifting loads.
5. The crane operators will lower the hook block to the ground so that slings and shackles can be attached. The hook is then lifted above the Blades CoG/ Lifting points.

   Guide ropes and ladder will be used to position the slings onto the blades lifting trunnion
6. ALE Slinger/Signaller will access sling connection points with the use of a ladder and harness, and attach the slings and shackles/hooks to the blade lifting points. The Slinger must maintain three points of contact and the ladder must be footed during use. Harness to be utilised where possible.
   Guide ropes and ladder will be used to position the slings onto the blades lifting points.
7. The load will be test lifted and any settlement of the crane or movement of the slings observed.
8. The Blade will be offloaded onto bolsters with the tip of the blade resting on 4 axle x 2file trailer and end of the blade resting on 6 axle x 4 file trailer as per DWG No. AA0971-04-001. When all parties are satisfied with the position of the blade the ALE SPMT operators will start the move.

4.2.3. OPERATIONAL PROCEDURE ROUTE

1. Once the Blade is positioned on the trailers as per DWG No. AA0971-04-001-0 the ALE operators will initialize the move of the trailers.
2. The trailers will leave the site as per DWG No. AA0971-04-002 Sheet 2 and head towards Hull City centre with the tip of the blade at the front. See also DWG No. AA0971-04-002 Sheets 3-10.
3. The trailer will follow the route as per DWG No. AA0971-04-002 Sheet 1.
4. The transport arrangement will be escorted by the authorities along the length of the route.

4.2.4. OPERATIONAL PROCEDURE OFFLOAD

1. The bridge will arrive at Victoria square and be positioned as per DWG No. AA0971-04-003
2. The mobile cranes will arrive to Victoria Square and be escorted into position by Lift Supervisor.

3. The cranes will be positioned as per DWG No. AA0971-04-005

4. The crane will be fully rigged as per the manufacturer's instructions.

5. The Lift Supervisor will check all lifting tackle before use and will ensure tag lines are employed by Slinger-signallers when lifting loads.

6. The crane operators will lower the hook block to the ground so that slings and shackles can be attached. The hook is then lifted above the Blades CoG.

Guide ropes and ladder will be used to position the slings onto the blades lifting trunnion

7. ALE Slinger/Signaller will access sling connection points with the use of a ladder and harness, and attach the slings and shackles/hooks to the blade lifting points. The Slinger must maintain three points of contact and the ladder must be footed during use. Harness to be utilised where possible.

Guide ropes and ladder will be used to position the slings onto the blades lifting points.

8. The load will be test lifted and any settlement of the crane or movement of the slings observed.

9. Once ready the cranes will perform the tandem lift to position the blade on permanent stands, as per DWG No. AA0971-04-003

4.2.5. OPERATIONAL PROCEDURE DE-MOBBING

1. The SPMT will travel back to the Port along the same route.

2. An 75t mobile crane will be rigged with slings and shackles appropriate for lifting the SPMT trailers and positioned as shown on Dwg No. GMS-007-003_C. (All lifting tackle will be provided by ALE and delivered in an 8 x 8ft container.) See also Mobbing and Demobbing RAMS.

3. The SPMT's will be driven within a safe operating radius of the 75t mobile crane.

4. With the use of the crane the SPMT's will be disconnected when necessary and lifted to a height suitable for loading onto 40ft trailers.

5. The 40ft trailer will be positioned beneath the SPMT which will be loaded onto the trailer by the crane.

6. This will be repeated for any further axles and power packs and secured for transport.

7. ALE is demobilized from site.

Item	Checked
All ALE and hired in equipment removed from site	
Any damaged or faulty equipment tagged and reported to Operations Manager	
ALE work area left in a clean & tidy condition	
All relevant Client documentation completed and signed off	
Completed Method Statement returned to Engineering Department	

5. PROJECT DRAWINGS AND REFERENCE DOCUMENTS

DRAWING NUMBER	DESCRIPTION
GMS-007-003	LIFT PLAN FOR SPMT
AA0971-04-002 SHEETS 1-8	SWEPT PATH HULL CITY CENTRE
AA0971-04-005	OFFLOAD ARRANGEMENT
AA0971-04-003	FINAL POSITION
AA0971-04-001	TRANSPORT ARRANGEMENT

6. TRAINING AND COMPETENCE

All persons to be CCNSG safety passport trained.
Operators to be CPCS trained in plant use.
Training records available on request.

7. EMERGENCY PROCEDURES

ALE Supervisor: TBC.

First Aider on site: TBC

Site emergency response to adhere to.

Operatives to be made aware of muster point by ALE Site Supervisor.

8. TOOLS AND PLANT

- Fork Lift Truck/Telehandler
- Suitable Crane(s)

9. WASTE MANAGEMENT

The only waste anticipated would be general waste and possibly oil contaminated spill kits. ALE will ensure that waste is segregated and disposed of in the manner dictated by site.

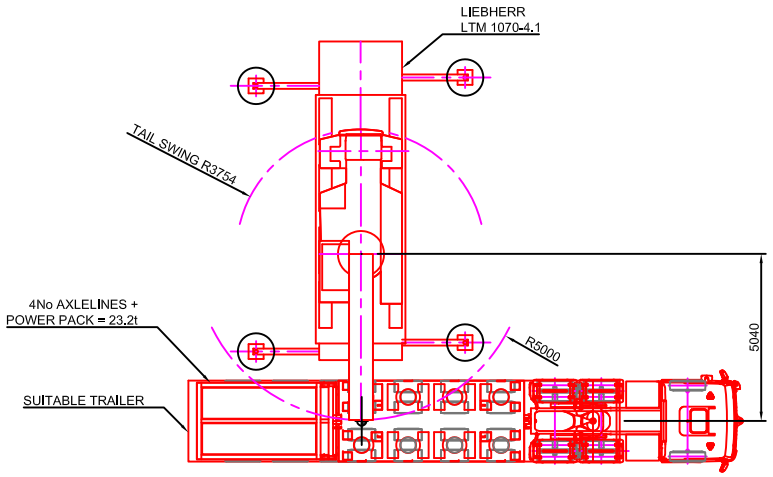
CERTIFICATION

All lifting and jacking equipment within this procedure is to have current test and/or inspection certification at the time of the operation.

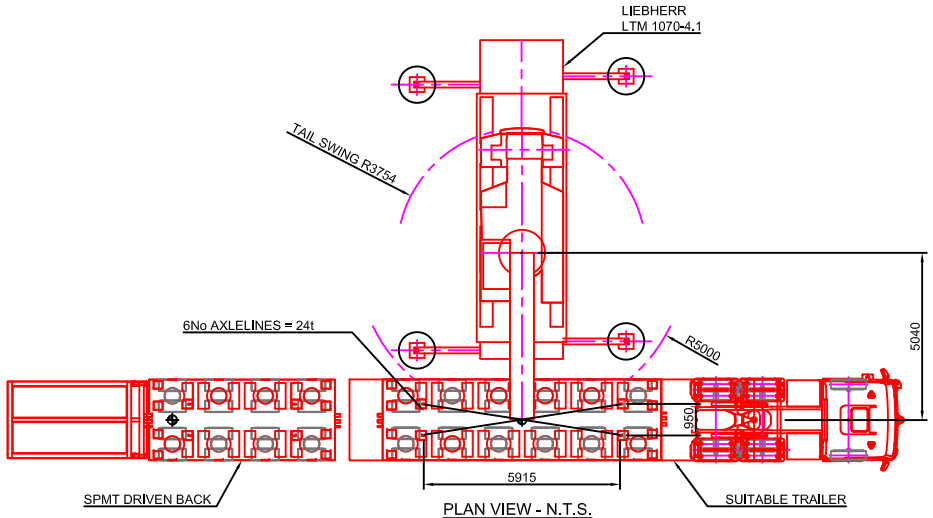
Copies of the test and inspection certificates will be available on request from the Project Site Supervisor.

10. RISK ASSESSMENTS AND ASSOCIATED DOCUMENTS

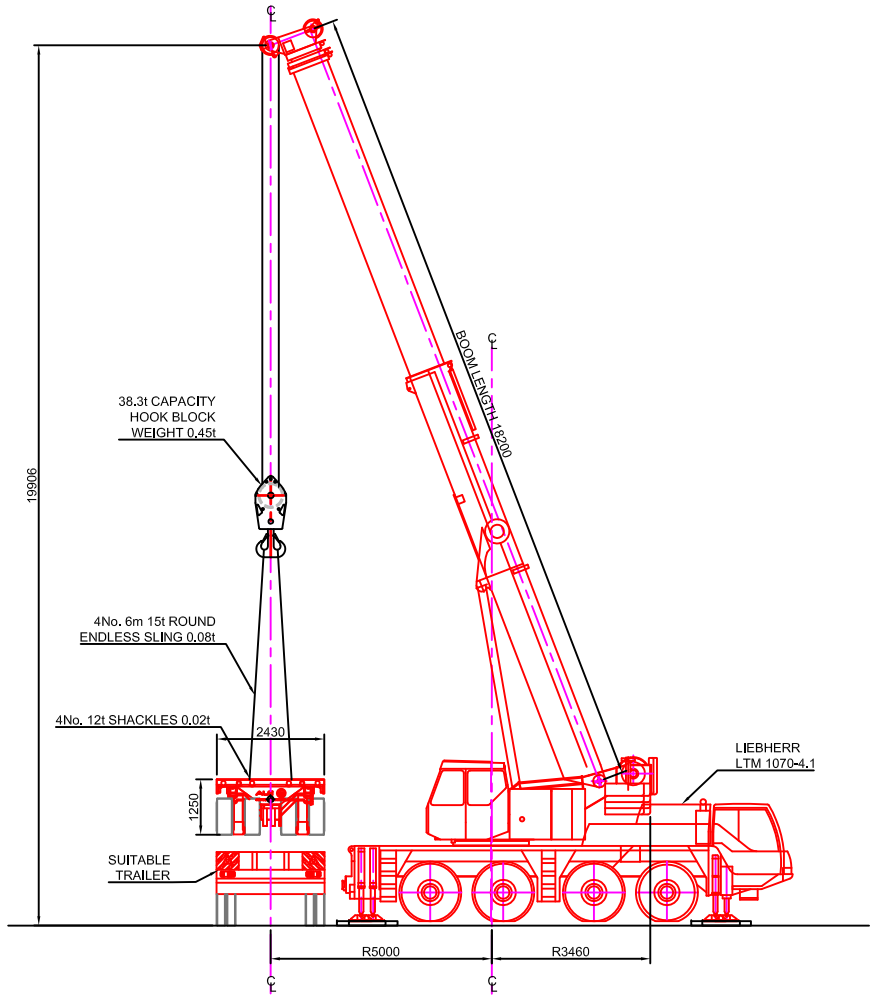
11. APPENDICES



PLAN VIEW - N.T.S.
OFF LOADING 4No AXLE-LINES
WITH POWER PACK



PLAN VIEW - N.T.S.
OFF LOADING 6 No AXLE-LINES



SIDE ELEVATION - 1:60

DRAWING NOTES:

-ALL DIMENSIONS ARE IN mm UNLESS OTHERWISE STATED.

-ALL WEIGHTS ARE IN t (METRIC TONNES) UNLESS OTHERWISE STATED.

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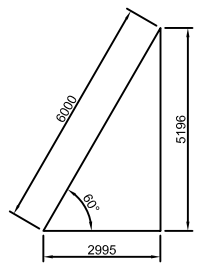
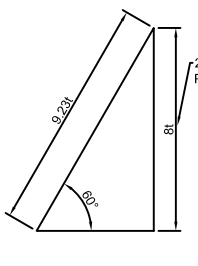


SLING LENGTH



SLING LOAD

CRANE LOAD CHART:

CRANE SPECIFICATION - LIEBHERR LTM 1070-4.1	6No AXLE LINES	4No AXLE LINES & P.P.	
OUTRIGGER CENTRES	8.0 x 6.3	8.0 x 6.3	m
COUNTERWEIGHT	14.5	14.5	t
MAIN BOOM	18.2	18.2	m
LIFT SPECIFICATION			
FLY JIB REDUCTION	0.5	0.5	t
HOOKBLOCK	0.45	0.45	t
TACKLE	0.1	0.1	t
LOAD	23.2	24.0	t
TOTAL LOAD	24.25	25.05	t
RADIUS	5.0	5.0	m
CAPACITY	36.0	36.0	t
% CHART CAPACITY	67.4	69.6	%

TECHNICAL INFORMATION:

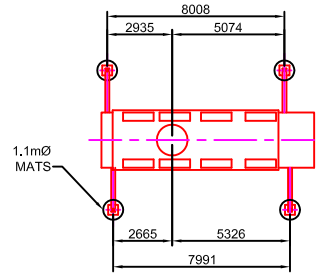
TRIGONOMETRY
9.23t MINIMUM REQUIRED ACCESSORY CAPACITY

MODE FACTOR
24 / 2.1 = 11.4t MINIMUM REQUIRED ACCESSORY CAPACITY

ACCESSORIES
SLINGS: 15t CAPACITY
SHACKLES: 12t CAPACITY

GROUND LOADINGS		
MAX. POINT LOAD	36.0	t
AREA OF MAT	0.95	m²
GROUND BEARING PRESSURE	37.9	t/m²

CRANE OUT RIGGER DETAILS:



Rev.	Date	Drawn	Check	Description
C	22/09/15	OLS	NJJ	ADDITIONAL DETAIL ADDED
B	19/10/12	GRE	SW	OUTRIGGER LOADINGS UPDATED
				QF19 (Issue 5)

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Client

Project Title
MOBBING AND DEMOBBING
SPMT

Drawing Title
LIFTING STUDY FOR
SPMT POWER PACK WITH 4No AXLE-LINES & 6No AXLELINES

Date	Drawn	Checked	Scale (A1)	Sheet
19/11/2010	MD	ADJ	SEE VIEWS	1 of 1

Project No.	Drawing No.	Rev.
GMS-007	GME-007-003-B	C

File Location: Z:\Engineering\Generic Method Statements (Rebranded with new Logo)\GMS-007 - Mobbing De-Mobbing of SPMT\Engineering\Drawings\GMS-007-003_C.dwg

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N

TECHNICAL NOTES:

- ROUTE FROM ALEXANDRA DOCK TO HULL CITY CENTRE.
- ROUTE A - DOCK EXIT VIA EASTERN GATE ONTO NORTHERN GATEWAY ROUNDABOUT.
- B75 BLADE TRANSPORT DIMENSIONS: 75590 x 4345 x 5348 mm (L x W x H) @ 26.1t
- FOR TRANSPORT ARRANGEMENT, SEE Dwg. No. DRW-AA0971-04-001

Rev.	Date	Drawn	Check	Description
C	08/11/2016	IK	GRE	FROM CLIENTS COMMENTS
B	04/11/2016	IK	GRE	FROM CLIENTS COMMENTS
A	08/08/16	BE	/	FROM CLIENTS COMMENTS
0	29/07/16	BE	TI	FIRST ISSUE

QF19 (Issue 5)

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Client: SIEMENS

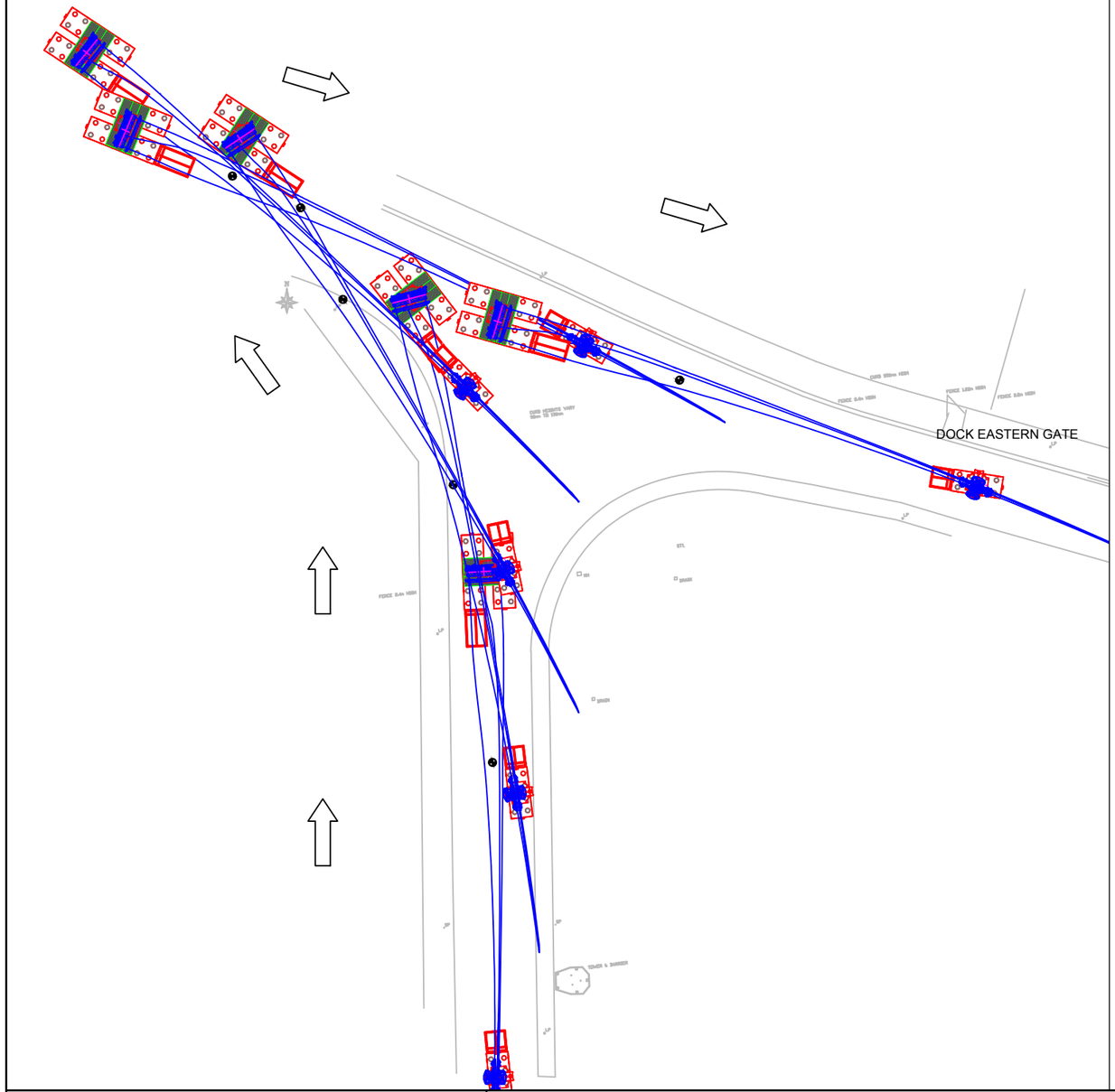
Project Title: B75 ROUTE SURVEY REPORT

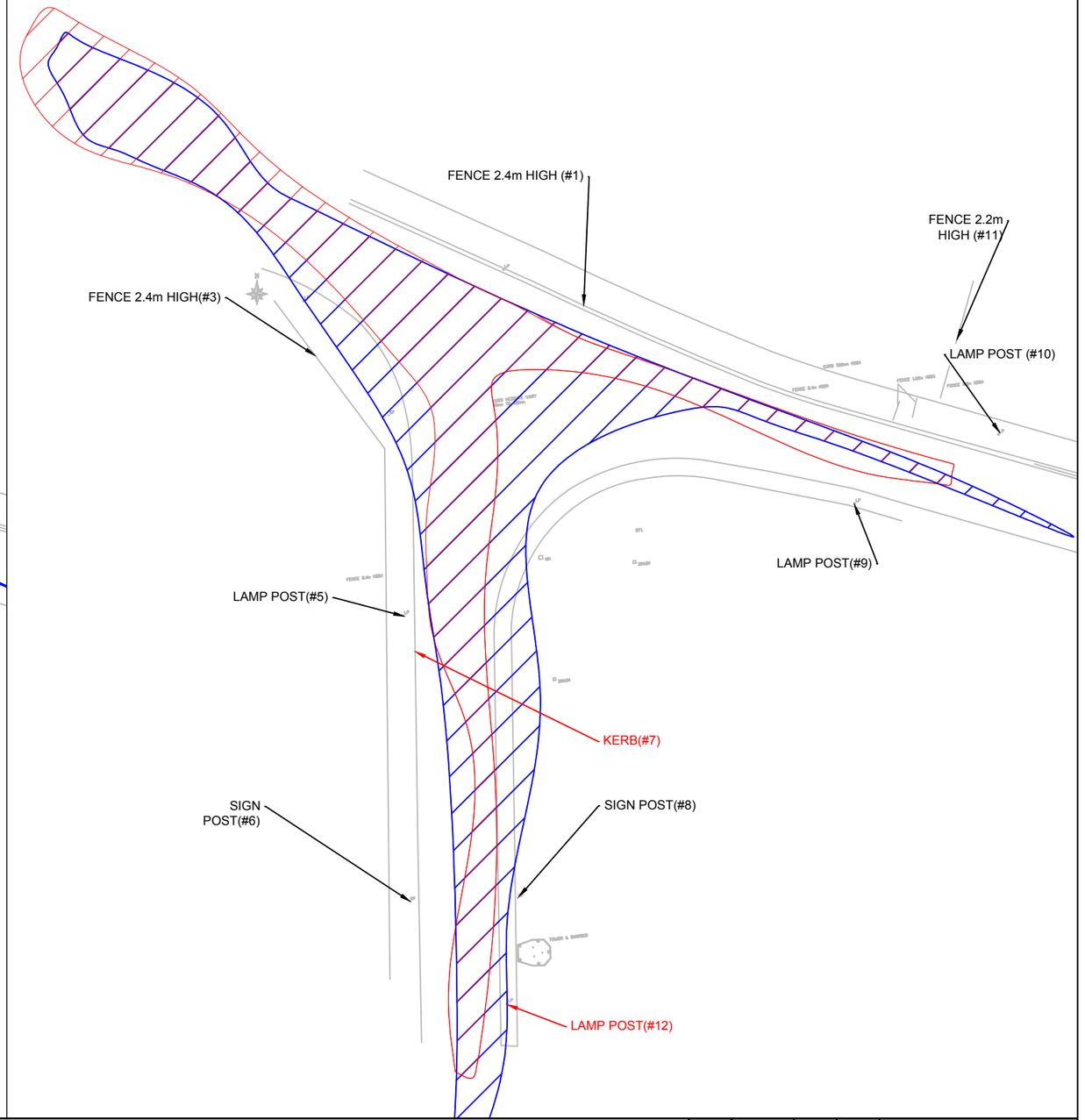
Drawing Title: SWEPT PATH ANALYSIS - HULL CITY CENTRE
ROUTE OVERVIEW

Date	Drawn	Checked	Scale (A1)	Sheet
29/07/16	BE	TI	NTS	1 of 8

Project No.	Drawing No.	Rev.
AA0971-04	DRW-AA0971-04-002	C

File Location: P:\SIEMENS\B-Engineering\AA0971_Hull–Blades_and_Moulds\AA0971-04 - Siemens B75 Route Survey Report\Engineering\Drawings\DRW-AA0971-04-002-C - SP - Hull City Centre.dwg





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N

TECHNICAL NOTES:

- TRAILER PATH
- BLADE OVERSAIL

- B75 BLADE TRANSPORT DIMENSIONS: 75590 x 4345 x 5348 mm (L x W x H) @ 26.1t
- FOR TRANSPORT ARRANGEMENT, SEE Dwg. No. DRW-AA0971-04-001
- STREET FURNITURE INDICATED IN RED MUST BE REMOVED.
- OTHER STREET FURNITURE IDENTIFIED MAY BE REQUIRED TO BE REMOVED.
- TIMBERS AND PLATING TO BE PLACED WHERE OVERSAIL KERBS
-

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C	08/11/16	IK	GRE	FROM CLIENTS COMMENTS
B	03/11/16	IK	GRE	FROM CLIENTS COMMENTS
A	08/08/16	BE	/	FROM CLIENTS COMMENTS
0	29/07/16	BE	TI	FIRST ISSUE

QF19 (Issue 5)

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Client: SIEMENS

Project Title: B75 ROUTE SURVEY REPORT

Drawing Title: SWEPT PATH ANALYSIS - HULL CITY CENTRE TURN 1

Date	Drawn	Checked	Scale (A1)	Sheet
29/07/16	BE	TI	NTS	2 of 8

Project No.	Drawing No.	Rev.
AA0971-04	DRW-AA0971-04-002	C

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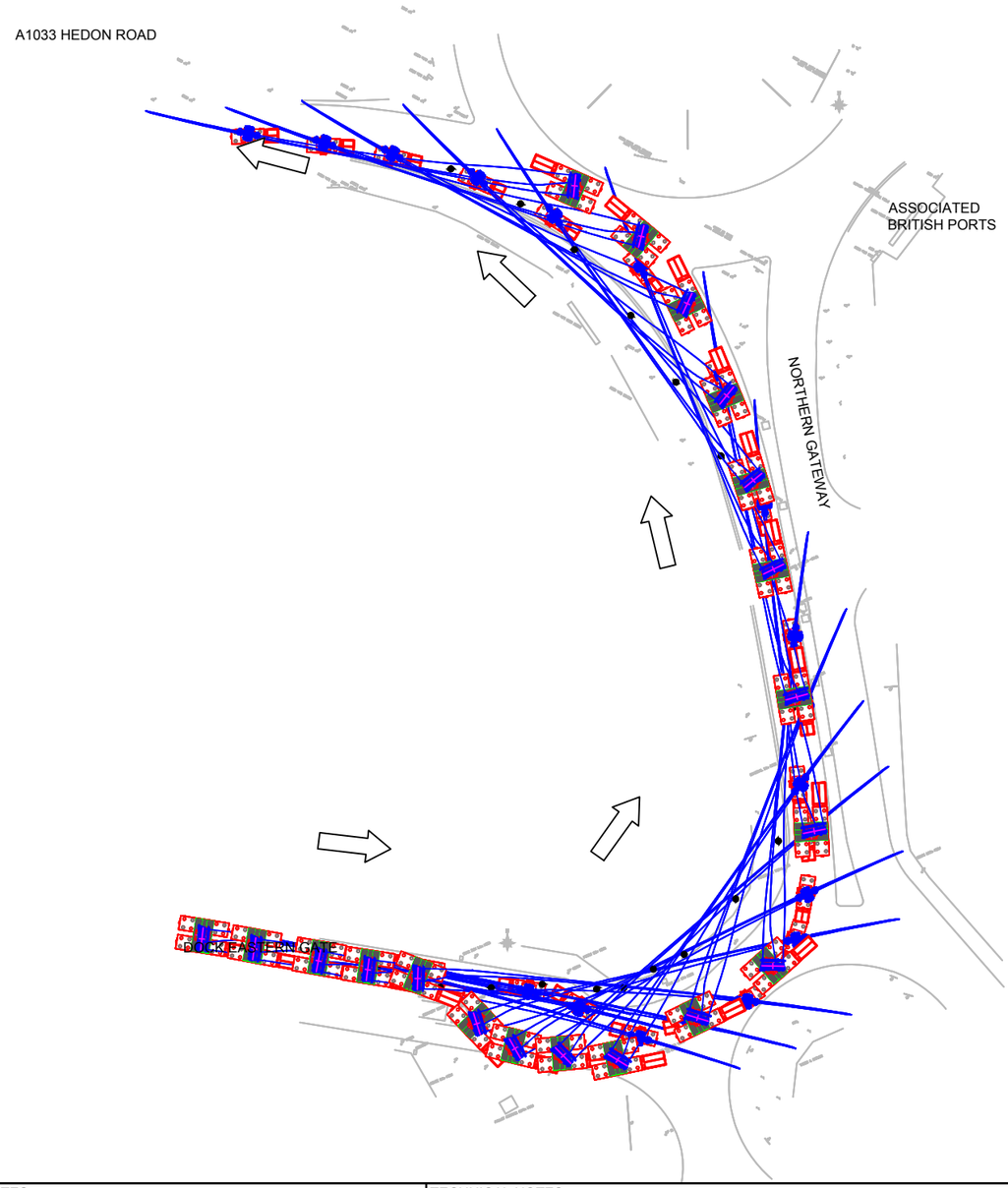

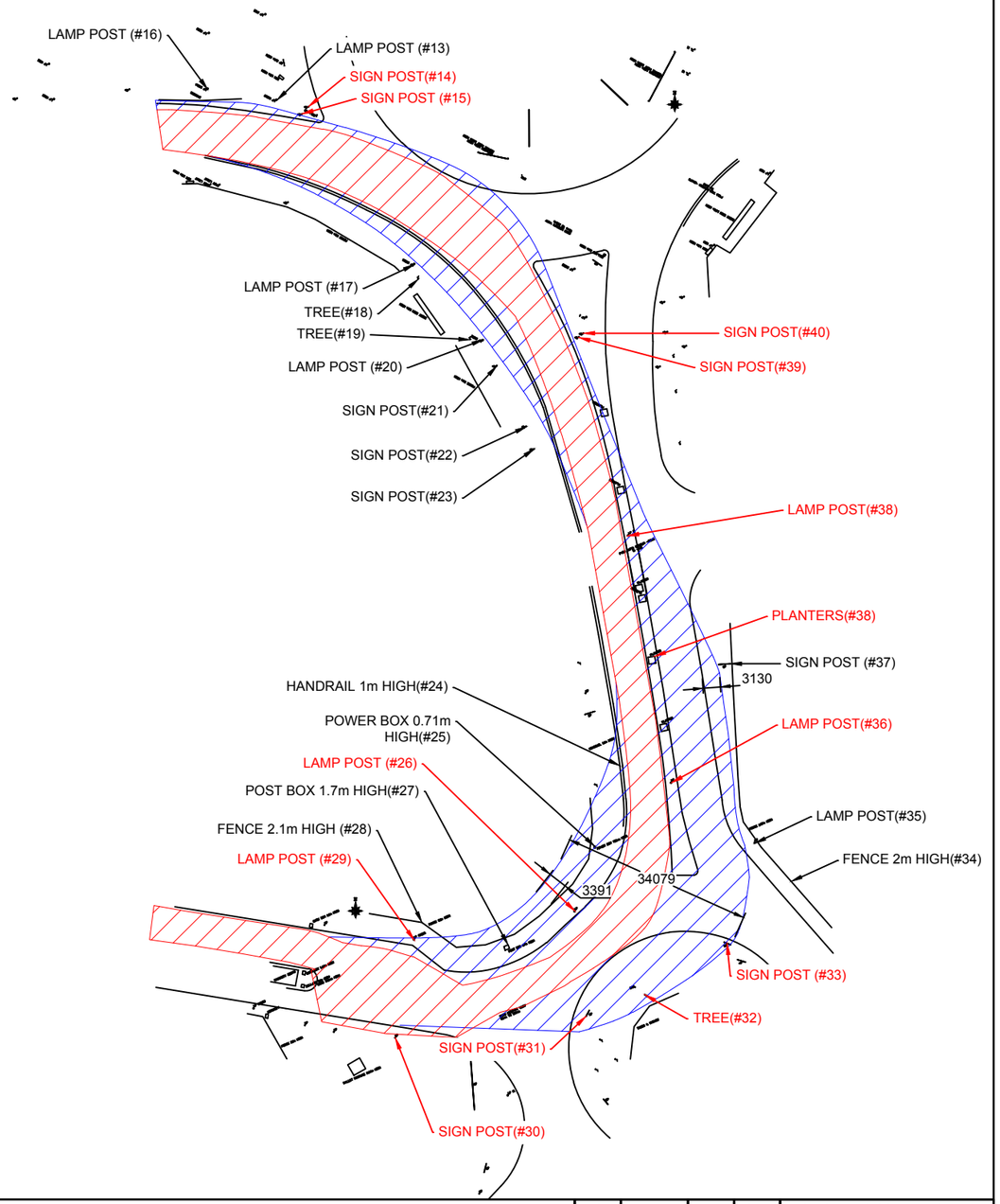

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-ALL DETAILS ARE PROVISIONAL AND ARE SUBJECT TO CONFIRMATION.

N

TECHNICAL NOTES:

- TRAILER PATH
- BLADE OVERSAIL

- B75 BLADE TRANSPORT DIMENSIONS: 75590 x 4345 x 5348 mm (L x W x H) @ 26.1t
- FOR TRANSPORT ARRANGEMENT, SEE Dwg. No. DRW-AA0971-04-001
- STREET FURNITURE INDICATED IN RED MUST BE REMOVED.
- OTHER STREET FURNITURE IDENTIFIED MAY BE REQUIRED TO BE REMOVED.
- TIMBERS AND PLATING TO BE PLACED WHERE OVERSAIL KERBS
-

Rev.	Date	Drawn	Check	Description
C	08/11/16	IK	GRE	FROM CLIENTS COMMENTS
B	03/11/16	IK	GRE	FROM CLIENTS COMMENTS
A	08/08/16	BE	/	FROM CLIENTS COMMENTS
0	29/07/16	BE	TI	FIRST ISSUE

QF19 (Issue 5)

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Client: SIEMENS

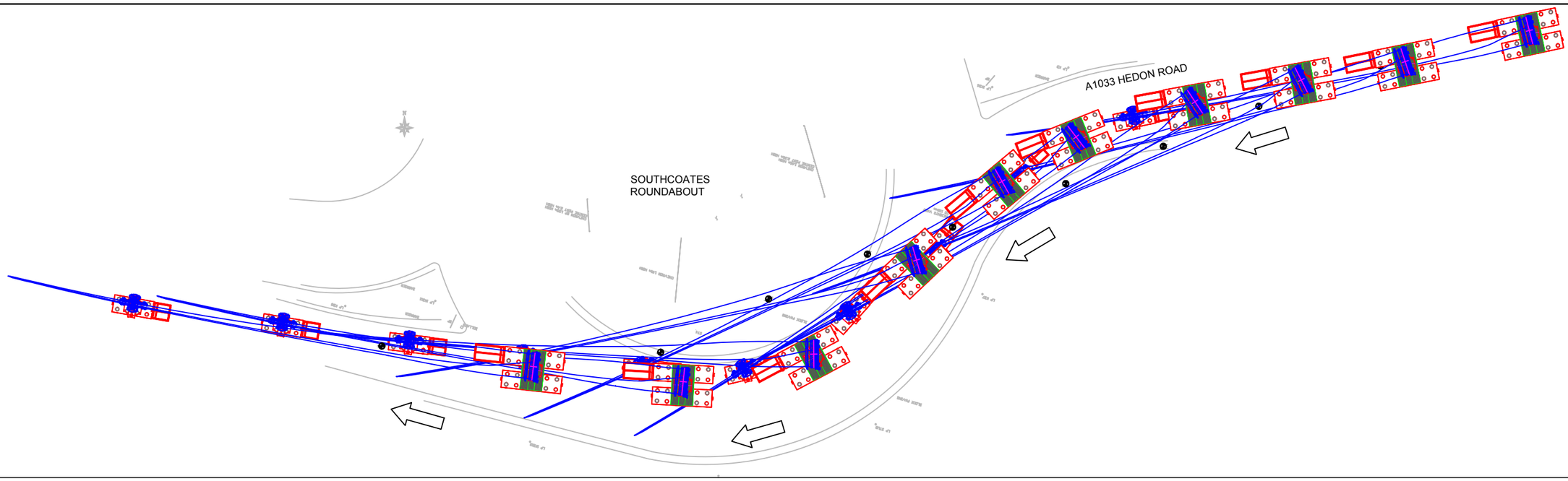
Project Title: B75 ROUTE SURVEY REPORT

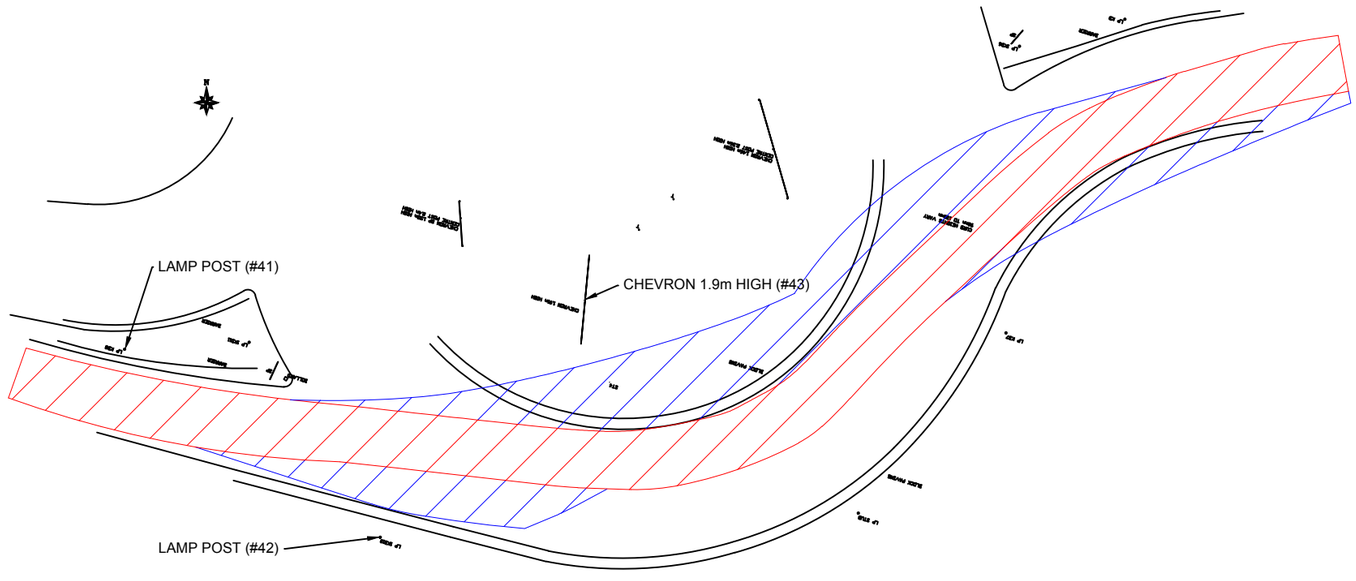
Drawing Title: SWEPT PATH ANALYSIS - HULL CITY CENTRE
TURN 2

Date	Drawn	Checked	Scale (A1)	Sheet
29/07/16	BE	TI	NTS	3 of 8

Project No.	Drawing No.	Rev.
AA0971-04	DRW-AA0971-04-002	C

File Location: P:\SIEMENS\B-Engineering\AA0971_Hull–Blades_and_Moulds\AA0971-04 - Siemens B75 Route Survey Report\Engineering\Drawings\DRW-AA0971-04-002-C - SP - Hull City Centre.dwg





DRAWING NOTES:

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-ALL WEIGHTS ARE IN t (METRIC TONNES) UNLESS OTHERWISE STATED.

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N

TECHNICAL NOTES:

- TRAILER PATH
- BLADE OVERSAIL

- B75 BLADE TRANSPORT DIMENSIONS: 75590 x 4345 x 5348 mm (L x W x H) @ 26.1t
- FOR TRANSPORT ARRANGEMENT, SEE Dwg. No. DRW-AA0971-04-001
- STREET FURNITURE INDICATED IN RED MUST BE REMOVED.
- OTHER STREET FURNITURE IDENTIFIED MAY BE REQUIRED TO BE REMOVED.
- TIMBERS AND PLATING TO BE PLACED WHERE OVERSAIL KERBS
-

Rev.	Date	Drawn	Check	Description
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0	29/07/16	BE	TI	FIRST ISSUE

QF19 (Issue 5)

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Client: SIEMENS

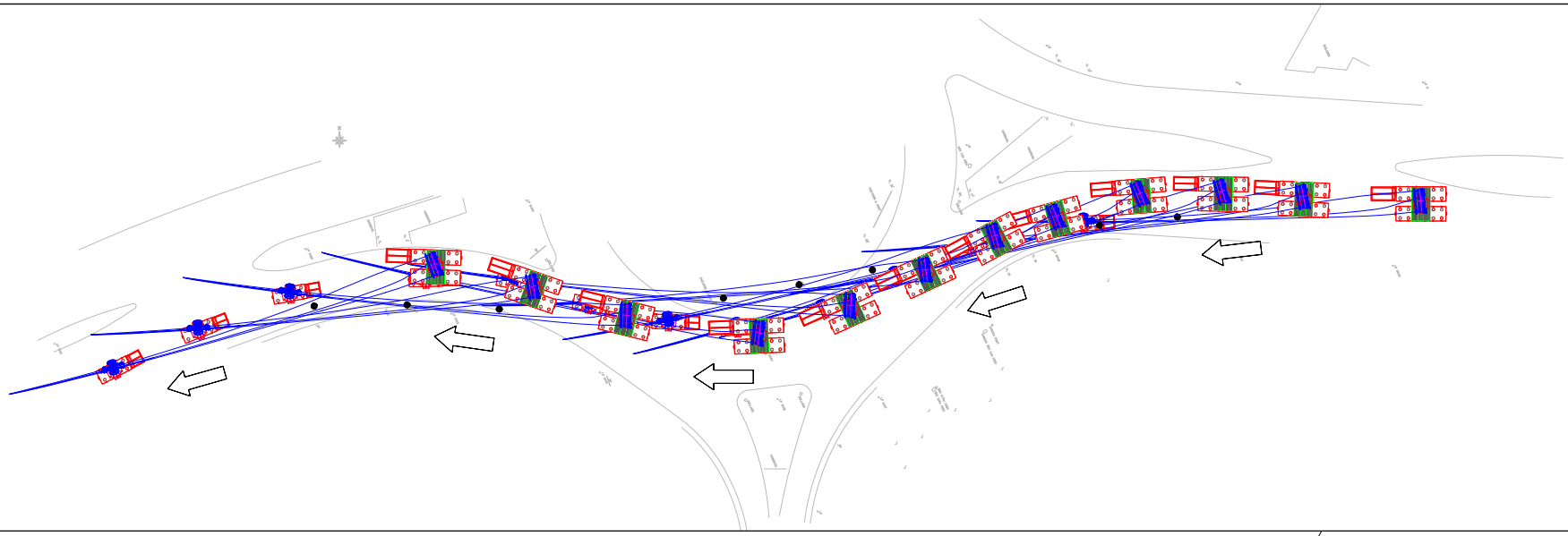
Project Title: B75 ROUTE SURVEY REPORT

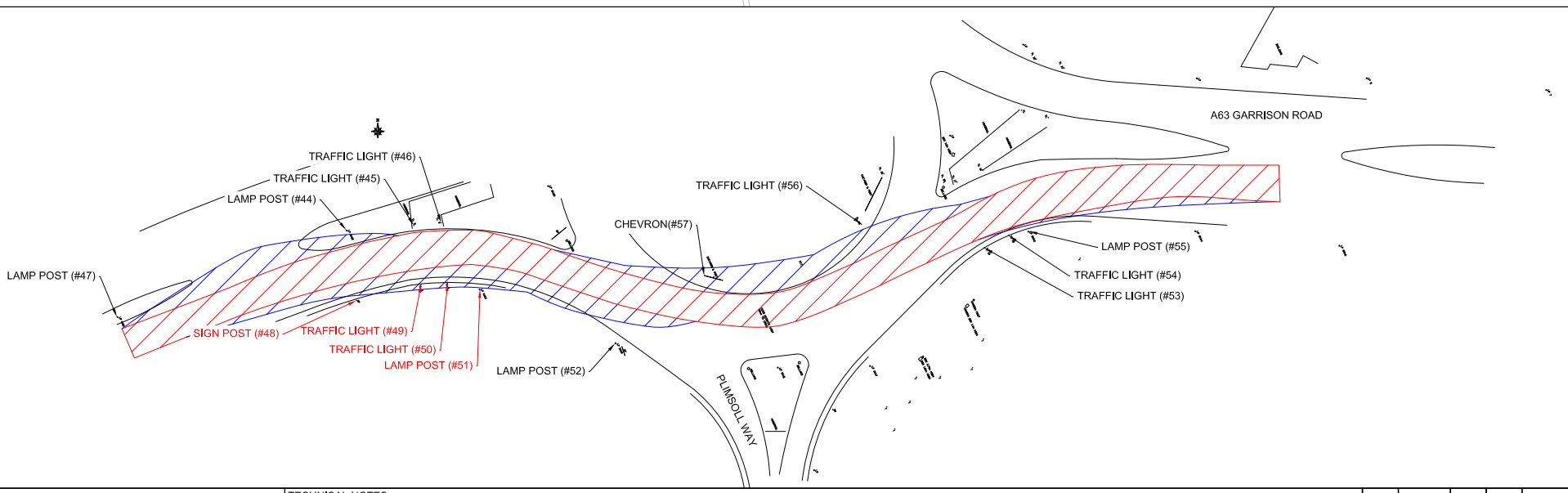
Drawing Title: SWEPT PATH ANALYSIS - HULL CITY CENTRE
TURN 3

Date	Drawn	Checked	Scale (A1)	Sheet
29/07/16	BE	TI	NTS	4 of 8

Project No.	Drawing No.	Rev.
AA0971-04	DRW-AA0971-04-002	C

File Location: P:\SIEMENS\B-Engineering\AA0971_Hull–Blades_and_Moulds\AA0971-04 - Siemens B75 Route Survey Report\Engineering\Drawings\DRW-AA0971-04-002-C - SP - Hull City Centre.dwg





DRAWING NOTES:

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-ALL WEIGHTS ARE IN t (METRIC TONNES) UNLESS OTHERWISE STATED.

-ALL DETAILS ARE PROVISIONAL AND ARE SUBJECT TO CONFIRMATION.

N

TECHNICAL NOTES:

- TRAILER PATH
- BLADE OVERSAIL
- B75 BLADE TRANSPORT DIMENSIONS: 75590 x 4345 x 5348 mm (L x W x H) @ 26.1t
- FOR TRANSPORT ARRANGEMENT, SEE Dwg. No. DRW-AA0971-04-001
- STREET FURNITURE INDICATED IN RED MUST BE REMOVED.
- OTHER STREET FURNITURE IDENTIFIED MAY BE REQUIRED TO BE REMOVED.
- TIMBERS AND PLATING TO BE PLACED WHERE OVERSAIL KERBS
-

Rev.	Date	Drawn	Check	Description
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A	08/08/16	BE	/	FROM CLIENTS COMMENTS
0	29/07/16	BE	TI	FIRST ISSUE

QF19 (Issue 5)

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Client: SIEMENS

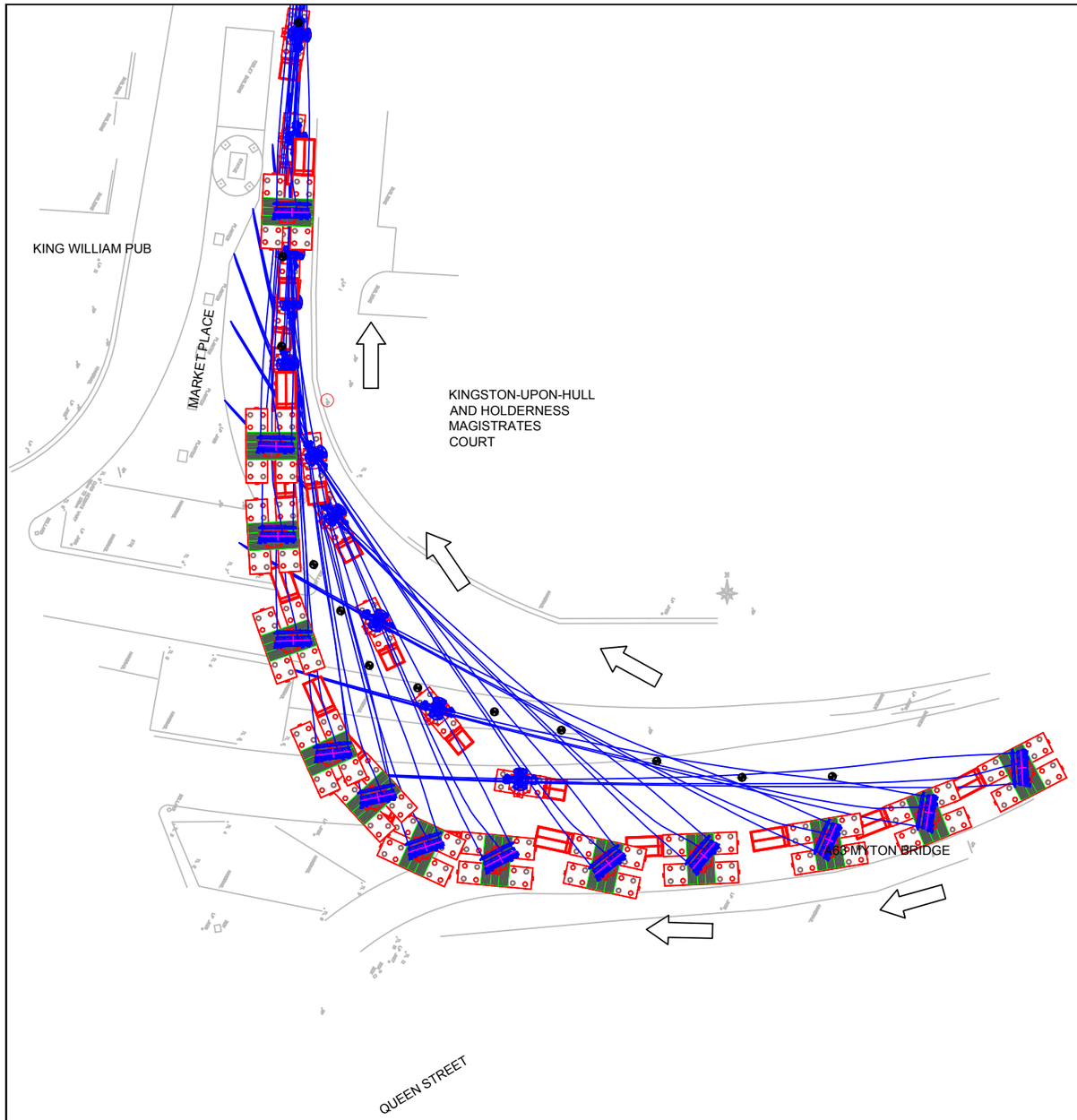
Project Title: B75 ROUTE SURVEY REPORT

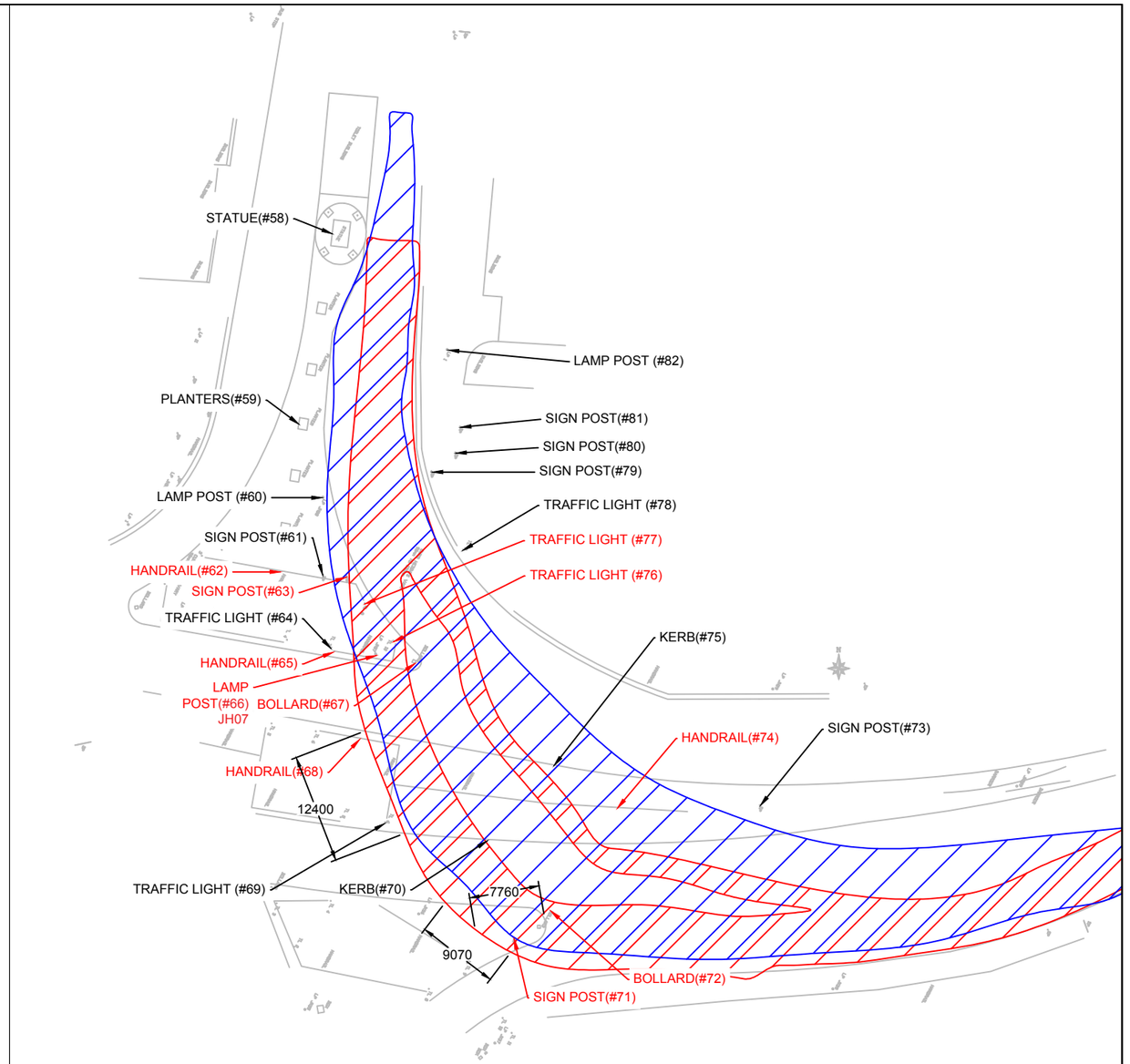
Drawing Title: SWEPT PATH ANALYSIS - HULL CITY CENTRE TURN 4

Date	Drawn	Checked	Scale (A1)	Sheet
29/07/16	BE	TI	NTS	5 of 7

Project No.	Drawing No.	Rev.
AA0971-04	DRW-AA0971-04-002	C

File Location: P:\SIEMENS\B-Engineering\AA0971_Hull-Blades_and_Moulds\AA0971-04 - Siemens B75 Route Survey Report\Engineering\Drawings\DRW-AA0971-04-002-C - SP - Hull City Centre.dwg





DRAWING NOTES:

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-ALL WEIGHTS ARE IN t (METRIC TONNES) UNLESS OTHERWISE STATED.

-ALL DETAILS ARE PROVISIONAL AND ARE SUBJECT TO CONFIRMATION.

N

TECHNICAL NOTES:

- TRAILER PATH
- BLADE OVERSAIL

- B75 BLADE TRANSPORT DIMENSIONS: 75590 x 4345 x 5348 mm (L x W x H) @ 26.1t
- FOR TRANSPORT ARRANGEMENT, SEE Dwg. No. DRW-AA0971-04-001
- STREET FURNITURE INDICATED IN RED MUST BE REMOVED.
- OTHER STREET FURNITURE IDENTIFIED MAY BE REQUIRED TO BE REMOVED.
- TIMBERS AND PLATING TO BE PLACED WHERE OVERSAIL KERBS

Rev.	Date	Drawn	Check	Description
C	08/11/2016	IK	GRE	FROM CLIENTS COMMENTS
B	03/11/2016	IK	GRE	FROM CLIENTS COMMENTS
A	08/08/16	BE	/	FROM CLIENTS COMMENTS
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QF19 (Issue 5)

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Client: SIEMENS

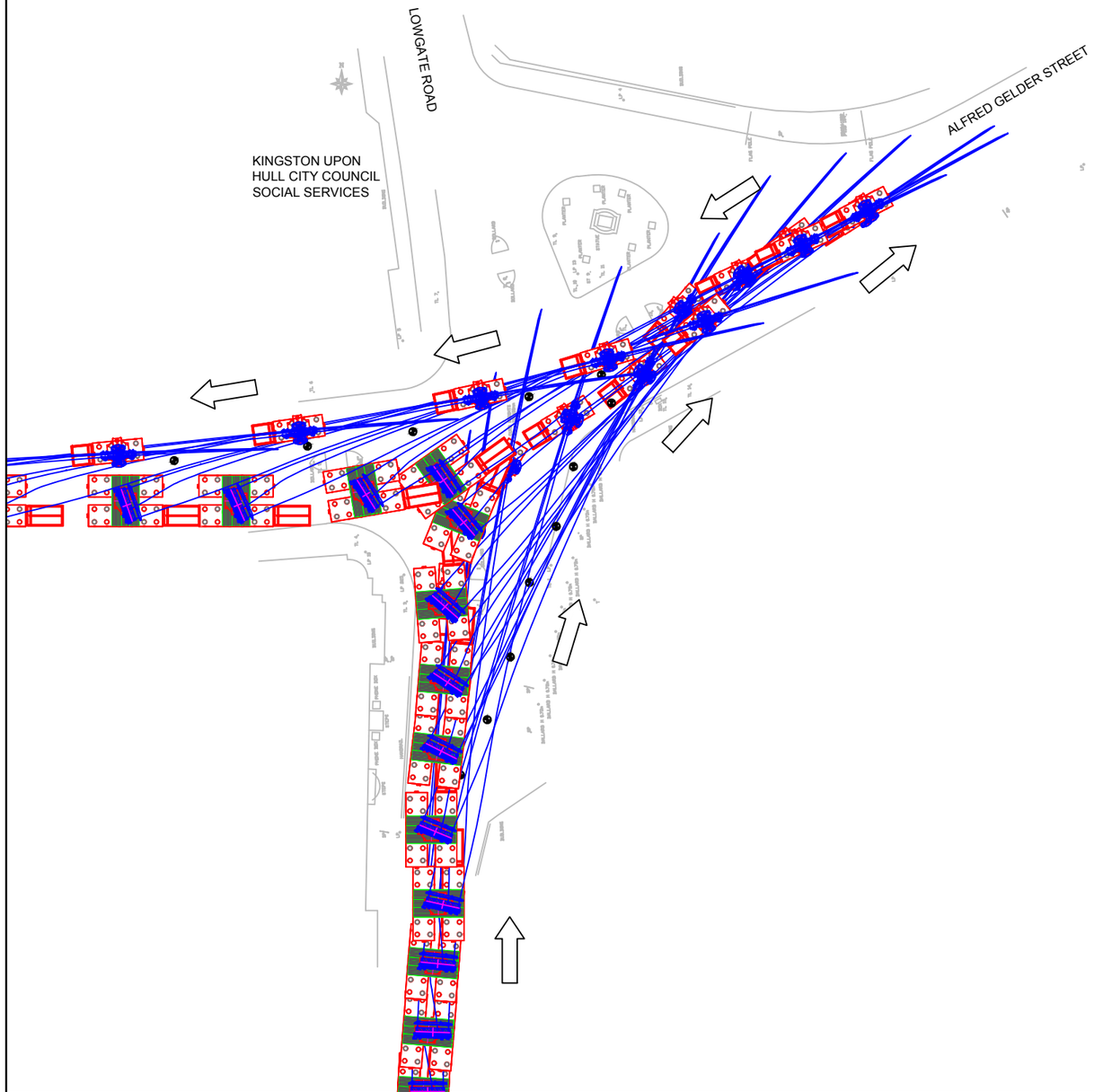
Project Title: B75 ROUTE SURVEY REPORT

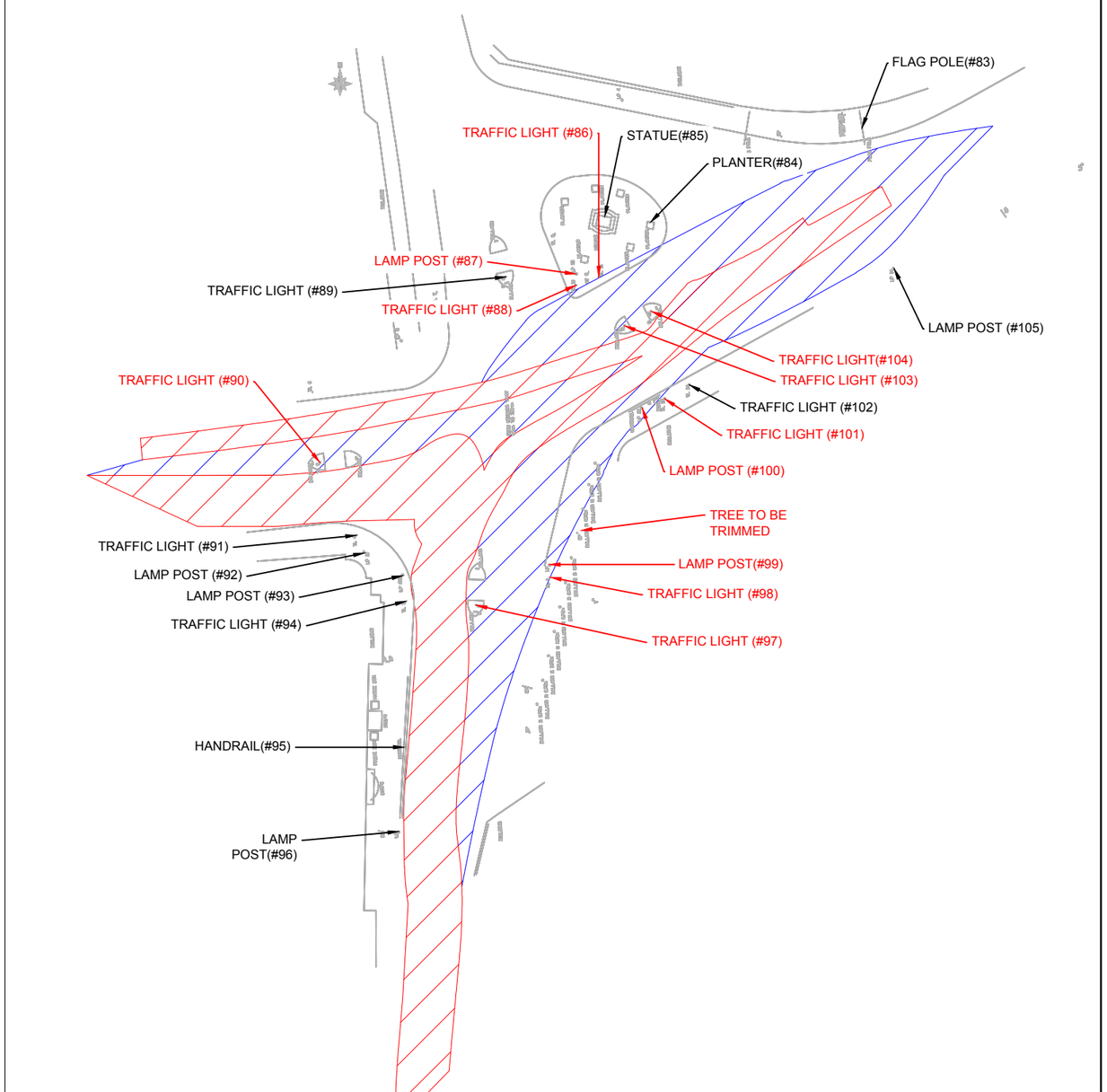
Drawing Title: SWEPT PATH ANALYSIS - HULL CITY CENTRE
TURN 5

Date	Drawn	Checked	Scale (A1)	Sheet
29/07/16	BE	TI	NTS	6 of 8

Project No.	Drawing No.	Rev.
AA0971-04	DRW-AA0971-04-002	C

File Location: P:\SIEMENS\B-Engineering\AA0971_Hull–Blades_and_Moulds\AA0971-04 - Siemens B75 Route Survey Report\Engineering\Drawings\DRW-AA0971-04-002-C - SP - Hull City Centre.dwg





DRAWING NOTES:

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-ALL DETAILS ARE PROVISIONAL AND ARE SUBJECT TO CONFIRMATION.

N

TECHNICAL NOTES:

- TRAILER PATH
- BLADE OVERSAIL

- B75 BLADE TRANSPORT DIMENSIONS: 75590 x 4345 x 5348 mm (L x W x H) @ 26.1t
- FOR TRANSPORT ARRANGEMENT, SEE Dwg. No. DRW-AA0971-04-001
- STREET FURNITURE INDICATED IN RED MUST BE REMOVED.
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- TIMBERS AND PLATING TO BE PLACED WHERE OVERSAIL KERBS
-

Rev.	Date	Drawn	Check	Description
C	08/11/16	IK	GRE	FROM CLIENTS COMMENTS
B	03/11/16	IK	GRE	FROM CLIENTS COMMENTS
A	08/08/16	BE	/	FROM CLIENTS COMMENTS
0	29/07/16	BE	TI	FIRST ISSUE

QF19 (Issue 5)

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Client: SIEMENS

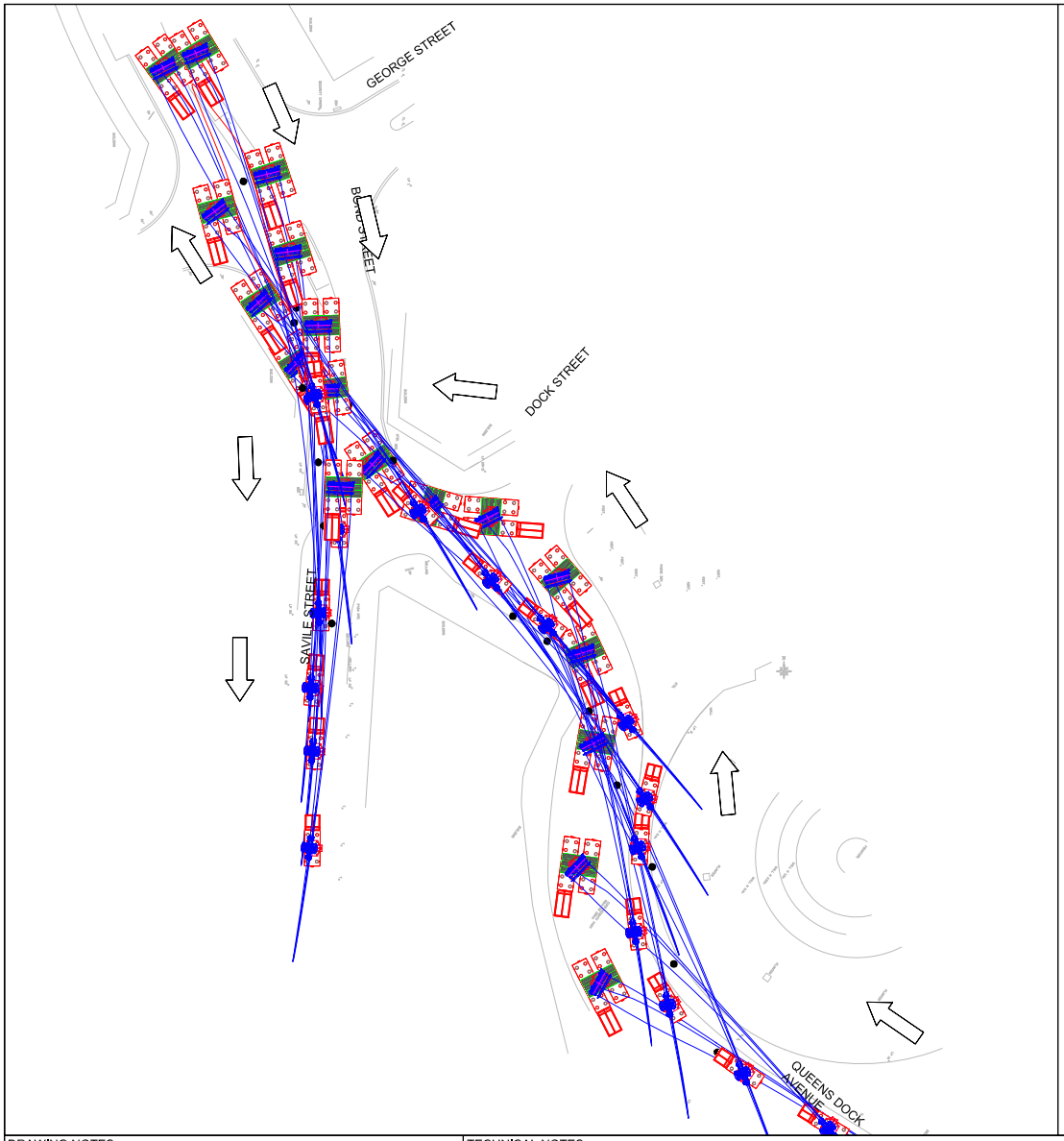
Project Title: B75 ROUTE SURVEY REPORT

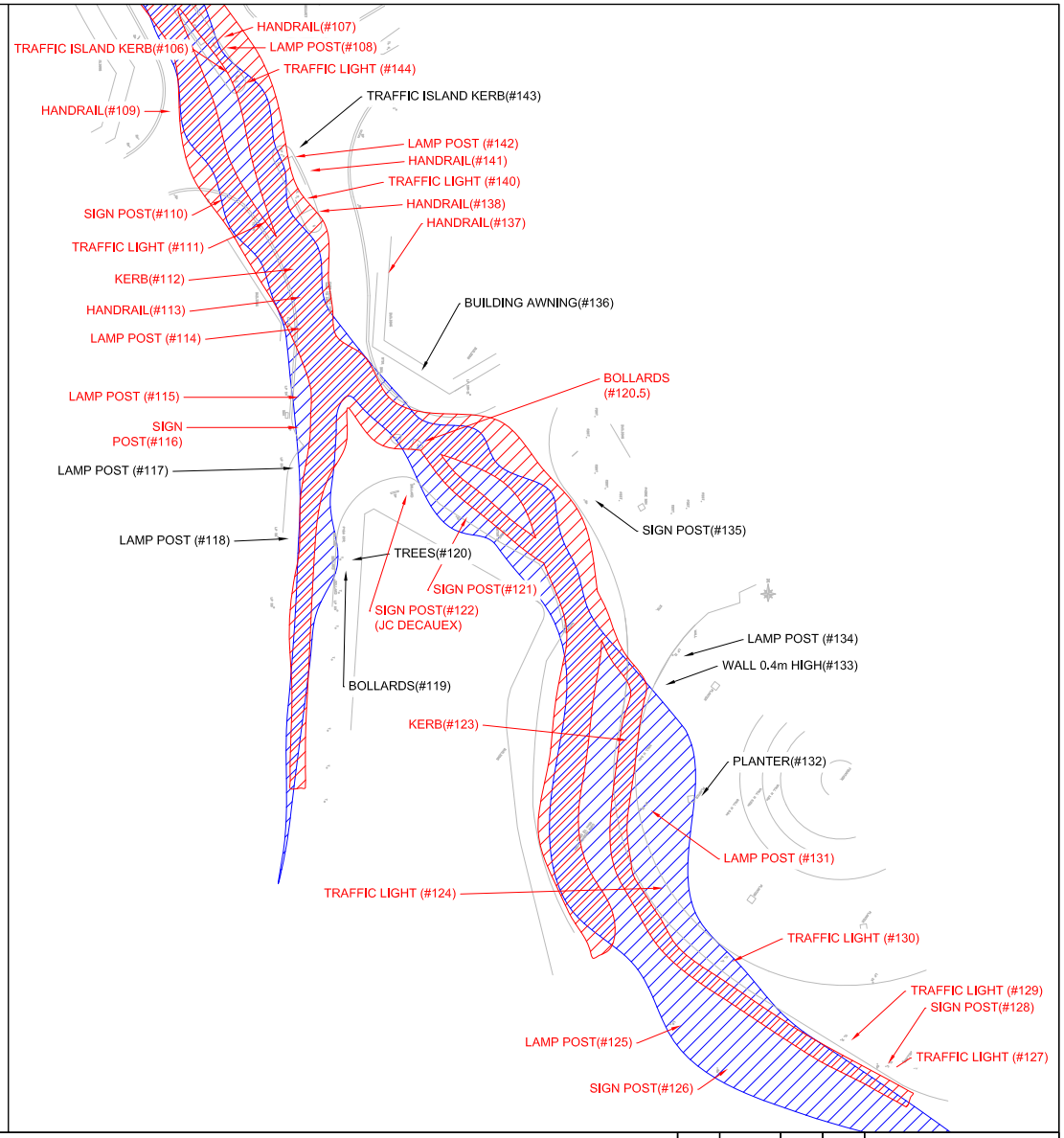
Drawing Title: SWEPT PATH ANALYSIS - HULL CITY CENTRE
TURN 6

Date	Drawn	Checked	Scale (A1)	Sheet
29/07/16	BE	TI	NTS	7 of 8

Project No.	Drawing No.	Rev.
AA0971-04	DRW-AA0971-04-002	C

File Location: P:\SIEMENS\B-Engineering\AA0971_Hull–Blades_and_Moulds\AA0971-04 - Siemens B75 Route Survey Report\Engineering\Drawings\DRW-AA0971-04-002-C - SP - Hull City Centre.dwg





DRAWING NOTES:

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-ALL WEIGHTS ARE IN t (METRIC TONNES) UNLESS OTHERWISE STATED.

-ALL DETAILS ARE PROVISIONAL AND ARE SUBJECT TO CONFIRMATION.

N

TECHNICAL NOTES:

- TRAILER PATH
- BLADE OVERSAIL
- B75 BLADE TRANSPORT DIMENSIONS: 75590 x 4345 x 5348 mm (L x W x H) @ 26.1t
- FOR TRANSPORT ARRANGEMENT, SEE Dwg. No. DRW-AA0971-04-001
- STREET FURNITURE INDICATED IN RED MUST BE REMOVED.
- OTHER STREET FURNITURE IDENTIFIED MAY BE REQUIRED TO BE REMOVED.
- TIMBERS AND PLATING TO BE PLACED WHERE OVERSAIL KERBS
-

Rev.	Date	Drawn	Check	Description
C	08/11/16	IK	GRE	FROM CLIENTS COMMENTS
B	03/11/16	IK	GRE	FROM CLIENTS COMMENTS
A	08/08/16	BE	/	FROM CLIENTS COMMENTS
0	29/07/16	BE	TI	FIRST ISSUE

QF19 (Issue 5)

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Web: www.ale-heavylift.com

Client: SIEMENS

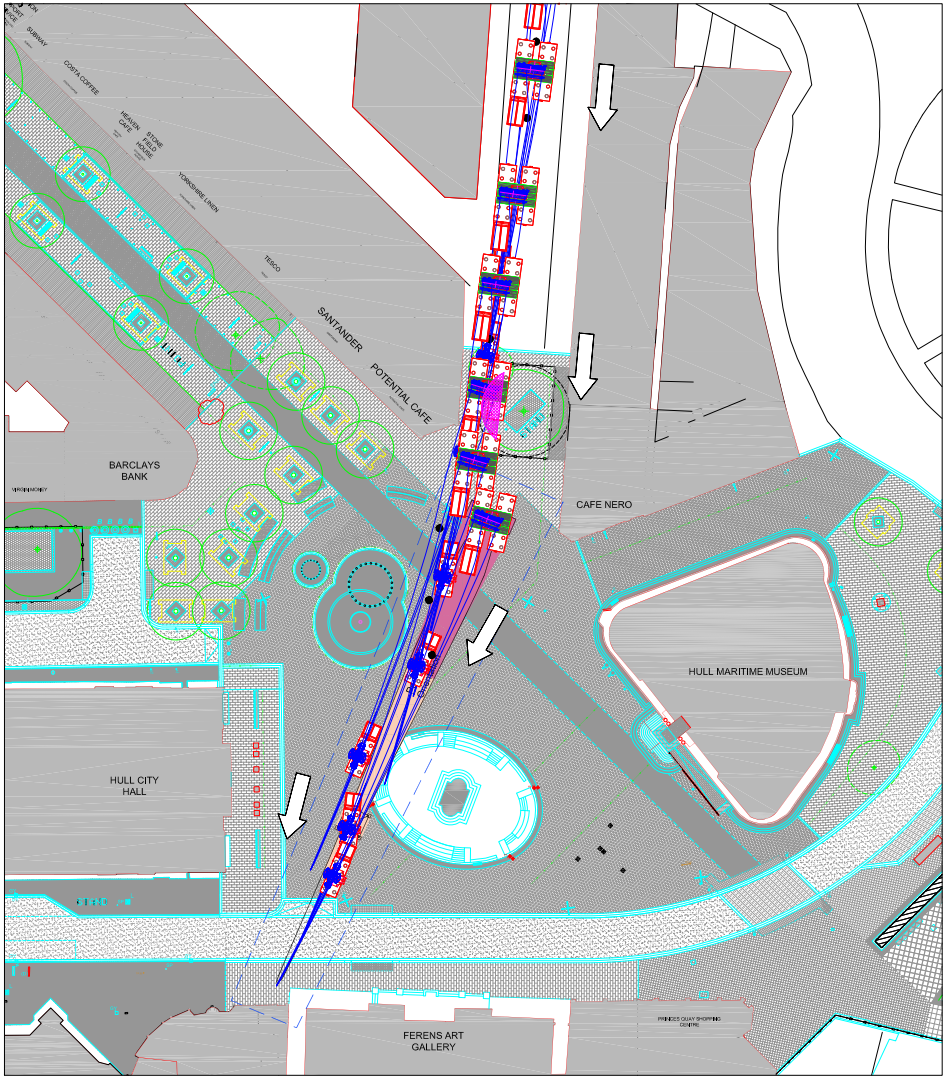
Project Title: B75 ROUTE SURVEY REPORT

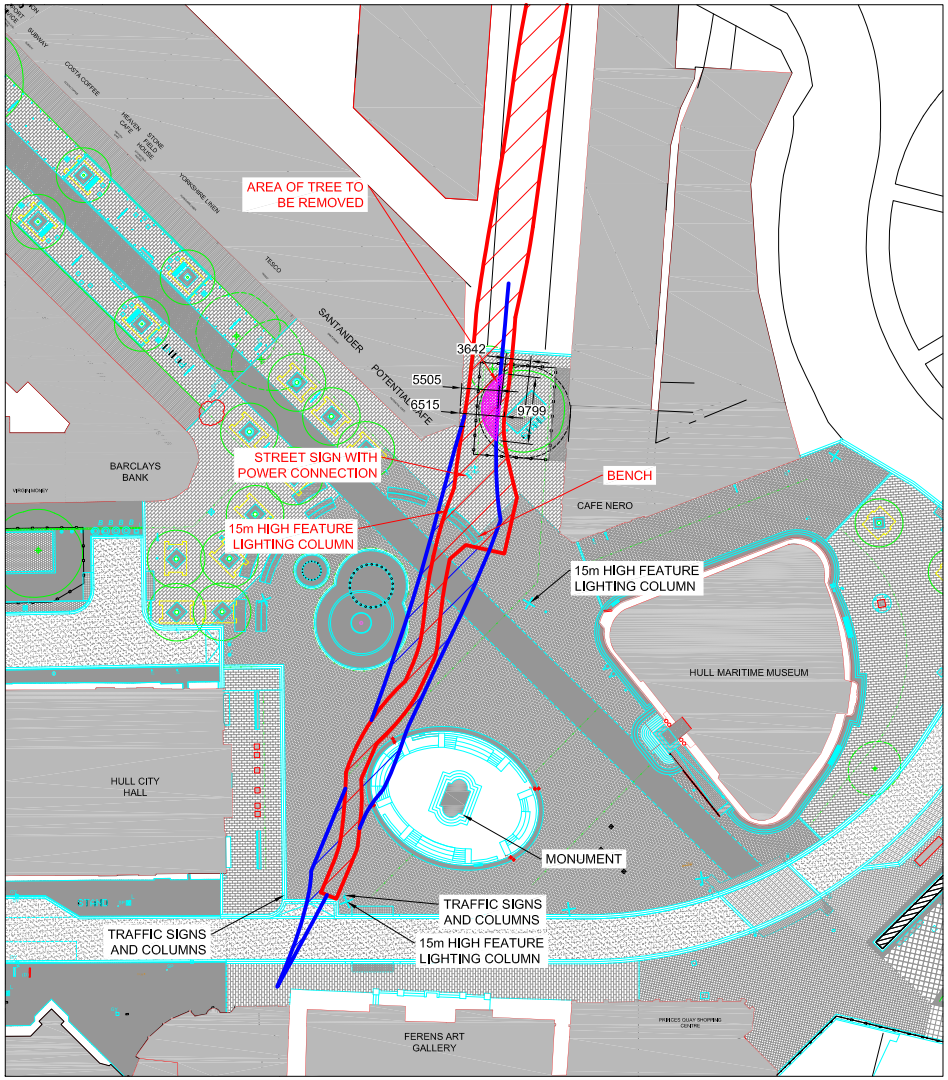
Drawing Title: SWEPT PATH ANALYSIS - HULL CITY CENTRE TURN 7

Date	Drawn	Checked	Scale (A1)	Sheet
29/07/16	BE		NTS	8 of 10

Project No.	Drawing No.	Rev.
AA0971-04	DRW-AA0971-04-002	C

File Location: P:\SIEMENS\B-Engineering\AA0971_Hull-Blades_and_Moulds\AA0971-04 - Siemens B75 Route Survey Report\Engineering\Drawings\DRW-AA0971-04-002-C - SP - Hull City Centre.dwg





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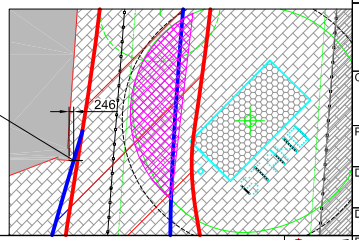
N

TECHNICAL NOTES:

- TRAILER PATH
- BLADE OVERSAIL
- AREA OF TREE TO BE REMOVED

- B75 BLADE TRANSPORT DIMENSIONS: 75590 x 4345 x 5348 mm (L x W x H) @ 26.1t
- FOR TRANSPORT ARRANGEMENT, SEE Dwg. No. DRW-AA0971-04-001
- STREET FURNITURE INDICATED IN RED MUST BE REMOVED.
- OTHER STREET FURNITURE IDENTIFIED MAY BE REQUIRED TO BE REMOVED.
- BLADE FINAL POSITION FROM RECEIVED Dwg. No. 249697-SK-001-A
- DWG REFERENCE 249697-DK-001
- BUILDING CLEARED BY 246mm



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0	29/07/16	BE	TI	FIRST ISSUE

QF19 (Issue 5)

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Client: SIEMENS

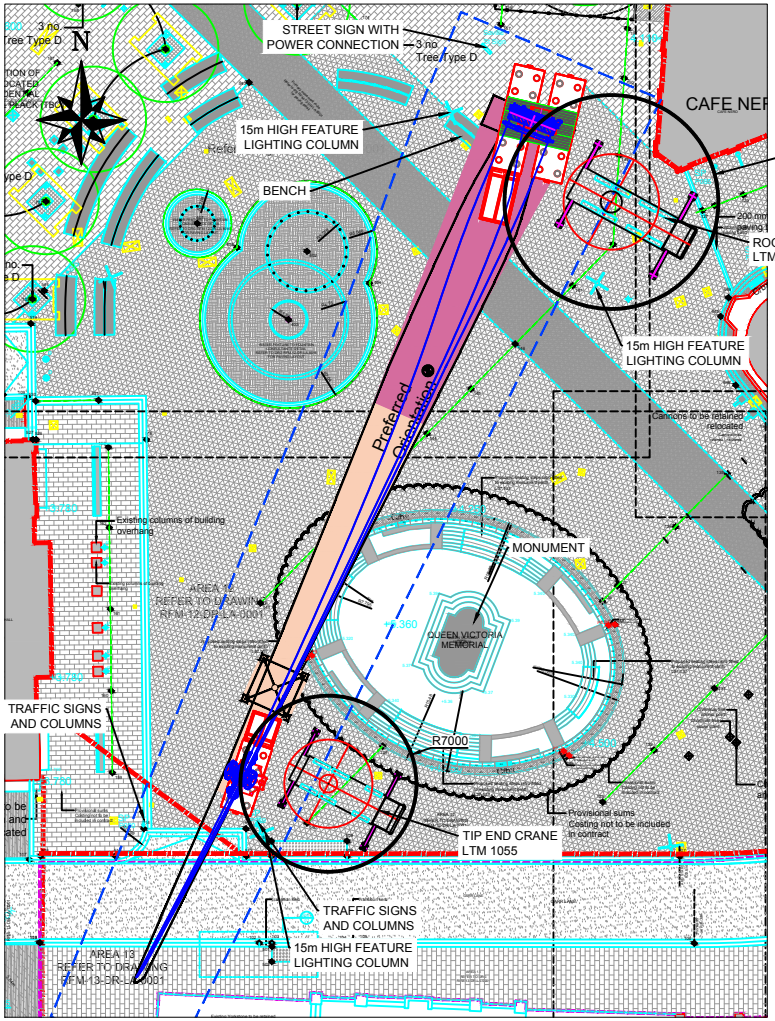
Project Title: B75 ROUTE SURVEY REPORT

Drawing Title: SWEPT PATH ANALYSIS
BLADE FINAL POSITIONING

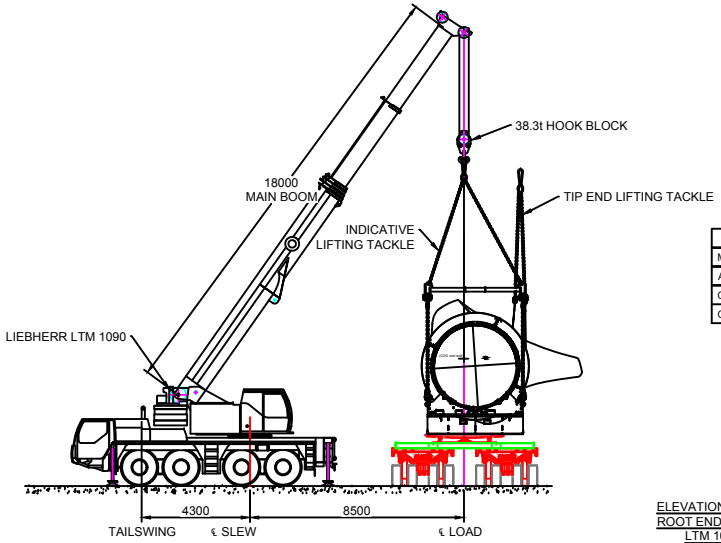
Date	Drawn	Checked	Scale (A1)	Sheet
29/07/16	BE	TI	NTS	1 of 1

Project No.	Drawing No.	Rev.
AA0971-04	DRW-AA0971-04-003	C

File Location: P:\SIEMENS\B-Engineering\AA0971_Hull-Blades_and_Moulds\AA0971-04 - Siemens B75 Route Survey Report\Engineering\Drawings\DRW-AA0971-04-003-C - SP - Final Positioning

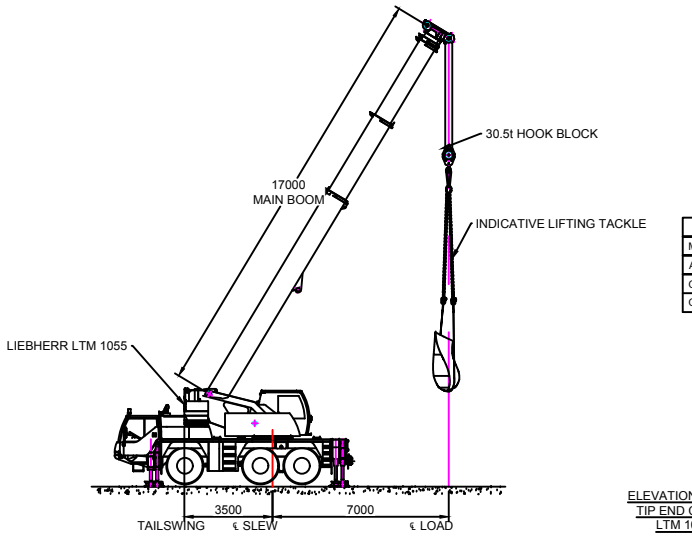


PLAN VIEW



WORSE CASE GROUND LOADINGS		
MAX. POINT LOAD	46	t
AREA OF MAT	1.13	m²
GROUND BEARING PRESSURE	40.7	t/m²
GROUND BEARING PRESSURE	399	kN/m²

ELEVATION VIEW - ROOT END CRANE LTM 1090



WORSE CASE GROUND LOADINGS		
MAX. POINT LOAD	27	t
AREA OF MAT	0.64	m²
GROUND BEARING PRESSURE	42.2	t/m²
GROUND BEARING PRESSURE	414	kN/m²

ELEVATION VIEW - TIP END CRANE LTM 1055

DRAWING NOTES:

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PROPOSAL ONLY

TECHNICAL NOTES:

- B75 BLADE TRANSPORT DIMENSIONS: 75590 x 4345 x 5348 mm (L x W x H) @ 26.1t + STEELWORK
  - TIP END LOAD = 8.86 + 2.8 = 12.66t
  - ROOT END LOAD = 16.24 + 3.55 = 19.79t
- FOR TRANSPORT ARRANGEMENT, SEE Dwg. No. DRW-AA0971-04-001
- BLADE FINAL POSITION FROM RECEIVED Dwg. No. 249697-SK-001-A
- LIFTING TACKLE ARRANGEMENT FROM RECEIVED SIEMENS Dwg. No. D3179302.

CRANE DETAILS:

LIEBHERR LTM 1055 CRANE			
TIP END CRANE			
OUTRIGGER CENTRES	7.3 x 6.3	m	
COUNTERWEIGHT	12.0	t	
MAIN BOOM	17.0	m	
LIFT SPECIFICATION			
FLY JIB REDUCTION	0.27	t	
HOOKBLOCK	0.28	t	
TACKLE	0.1	t	
LOAD	12.66	t	
TOTAL LOAD	13.31	t	
RADIUS	7.0	m	
CAPACITY	24.9	t	
□ CHART CAPACITY	53.5	□	

CRANE DETAILS:

LIEBHERR LTM 1090 CRANE			
ROOT END CRANE			
OUTRIGGER CENTRES	8.5 x 7.0	m	
COUNTERWEIGHT	17.0	t	
MAIN BOOM	18.3	m	
LIFT SPECIFICATION			
FLY JIB REDUCTION	0.44	t	
HOOKBLOCK	0.45	t	
TACKLE	0.2	t	
LOAD	19.79	t	
TOTAL LOAD	20.88	t	
RADIUS	9.0	m	
CAPACITY	29.3	t	
□ CHART CAPACITY	71.3	□	

Rev.	Date	Drawn	Check	Description
0	05/08/16	BE	NJ	PROPOSAL ONLY

QF19 (Issue 5)

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Client: SIEMENS

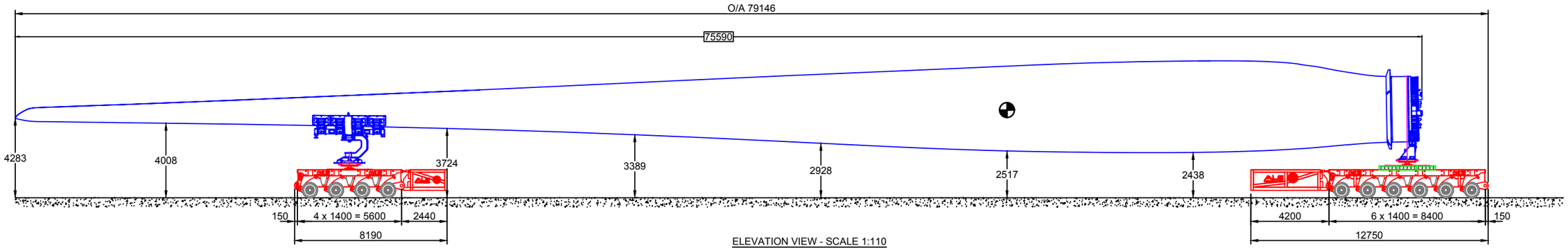
Project Title: B75 ROUTE SURVEY REPORT

Drawing Title: PRELIMINARY LIFT PLAN FOR BLADE OFFLOAD IN HULL CITY CENTRE

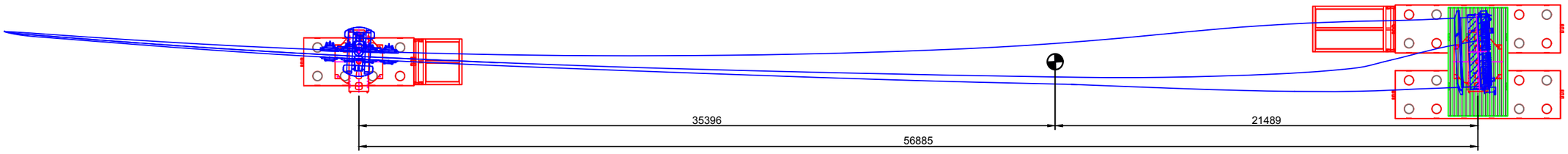
Date	Drawn	Checked	Scale (A1)	Sheet
05/08/16	BE	NJ	NTS	1 of 1

Project No.	Drawing No.	Rev.
AA0971-04	DRW-AA0971-04-005	0

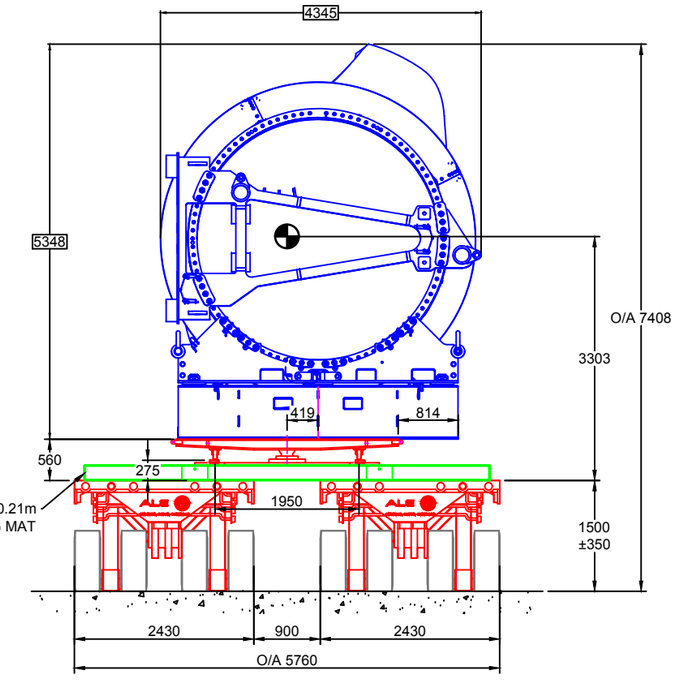
File Location: Z:\Public\Job Files\AA0000 -\AA0971 - Siemens Hull - B75 Blades and Moulds\AA0971-04 - Siemens B75 Route Survey Report\Engineering\Drawings\DRW-AA0971-04-005-0 - LP - Bl



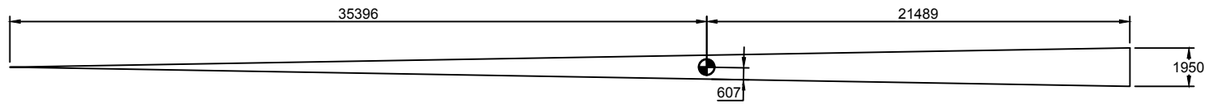
ELEVATION VIEW - SCALE 1:110



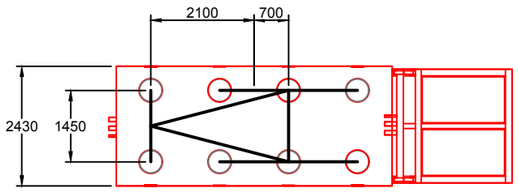
PLAN VIEW - SCALE 1:110



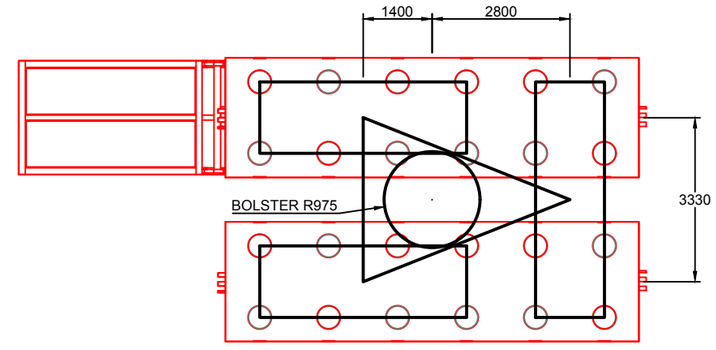
END ELEVATION VIEW - SCALE 1:40



STABILITY TRIANGLE



FRONT TRAILER HYDRAULIC GROUPS



REAR TRAILER HYDRAULIC GROUPS

DRAWING NOTES:

-ALL DIMENSIONS ARE IN mm UNLESS OTHERWISE STATED.

-ALL WEIGHTS ARE IN t (METRIC TONNES) UNLESS OTHERWISE STATED.

-ALL DETAILS ARE PROVISIONAL AND ARE SUBJECT TO CONFIRMATION.

TECHNICAL NOTES:

- TRAILER GEOMETRIC OPERATION LIMIT = ± 202 mm
- BOLSTER GEOMETRIC OPERATION LIMIT = ± 288 mm
- TRAILER HYDRAULIC OPERATION LIMIT = ± 350 mm
- LASHING DETAILS TBC.
- BLADE TRANPORT DIMENSIONS AND WEIGHTS FROM RECEIVED Dwg. No. D1019598
- B75 BLADE TRANSPORT DIMENSIONS: 75590 x 4345 x 5348 mm (L x W x H) @ 26.1t
- BLADE SUPPORTS OFFSET ON BOLSTER DUE TO CoG OFFSET. CoG POSITIONED CENTRALLY ON TRAILERS.

TRAILER SPECIFICATION		TRAILER SPECIFICATION	
FRONT TRAILER SCHEURLE SPMT 1x2x4		REAR TRAILER SCHEURLE SPMT 1x4x6	
all weights in t (metric tonnes)	Total	all weights in t (metric tonnes)	Total
NUMBER OF AXLE LINES	4	NUMBER OF AXLE LINES	6
NUMBER OF FILES	2	NUMBER OF FILES	4
LOAD DETAILS		LOAD DETAILS	
PAY LOAD	9.86	PAY LOAD	16.24
TRANSPORTER WEIGHT	16.00	TRANSPORTER WEIGHT	48.00
ENGINE WEIGHT	4.00	ENGINE WEIGHT	7.00
AUXILIARY STEEL WEIGHT	4.96	AUXILIARY STEEL WEIGHT	11.41
TOTAL LOAD	34.82	TOTAL LOAD	82.65
LOAD PER AXLE LINE / TRAILER	8.7	LOAD PER AXLE LINE / TRAILER	6.9
LOAD PER FILE	4.4	LOAD PER FILE	3.4
LOAD PER WHEEL	2.2	LOAD PER WHEEL	1.7
GROUND BEARING PRESSURE t/m²	2.56	GROUND BEARING PRESSURE t/m²	2.02

Rev.	Date	Drawn	Check	Description
0	28.07.16	BE	NJ	FIRST ISSUE

QF19 (Issue 5)

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Client: SIEMENS

Project Title: B75 ROUTE SURVEY REPORT

Drawing Title: TRANSPORT ARRANGEMENT FOR B75 BLADE
BOLSTER ARRANGEMENT ON SPMT

Date	Drawn	Checked	Scale (A1)	Sheet
28.07.16	BE	NJ	AS SHOWN	1 of 1

Project No.: AA0971-04
Drawing No.: DRW-AA0971-04-001
Rev.: 0

File Location: Z:\Public\Job Files\AA0000 -\AA0971 - Siemens Hull - B75 Blades and Moulds\AA0971-04 - Siemens B75 Route Survey Report\Engineering\Drawings\DRW-AA0971-04-001-0 - TA - Bl

CERTIFICATION

All lifting and jacking equipment within this procedure is to have current test and/or inspection certification at the time of the operation.

Copies of the test and inspection certificates will be available on request from the Project Site Supervisor.

10. RISK ASSESSMENTS AND ASSOCIATED DOCUMENTS

6.0 Risk Assessment Matrix

RISK RANKING		Likelihood				
		5 - Certain	4 – Very Likely	3 – Likely	2 – May Happen	1 – Unlikely
Severity	5 – Death or Full Scale Impact on the Environment	25	20	15	10	5
	4 – Major injury or Major Impact on the Environment	20	16	12	8	4
	3 – Lost Time injury or Reportable Environmental Incident to authorities	15	12	9	6	3
	2 – Medical treatment (off site) or minor environmental incident reportable to the client	10	8	6	4	2
	1 – Minor Injury (first aid on site) or environmental incident to be contained by ALE	5	4	3	2	1

LIKELIHOOD RATING

Level	Description
Certain	Almost inevitable that an incident would occur
Very Likely	Not certain to happen but an additional factor may result in an incident
Likely	Could happen when additional factors are present but otherwise unlikely to occur
May Happen	A rare combination of factors would be required for a injury
Unlikely	A freak combination of factors would be required for an incident to result

RISK PRIORITY CODE

Code	Action Required
12 >	**High Risk – Risks are intolerable and additional controls must be introduced to reduce risk further**
6 >10	**Medium Risk – Risks are tolerable, but only if control measures identified are fully implemented**
1 > 5	**Low Risk – Risks are broadly acceptable and risks should be monitored to ensure the level does not change**

Health, Safety & Environmental Risk Assessment

Conducted By: Ivo Krastins

Project: SIEMENS

Area and/or Activity: B75 BLADE MOVE

Document Ref: ALE-RA-AA0971-04-003

RA Date: 04/11/16

RA Review Date: Open

No	Potential Hazard	Potential Consequence	Initial Risk			Control Measures to be Implemented to reduce the risk	Residual Risk			Emergency Actions
			S	L	R		S*	L*	R*	
	Lifting operations									
1	Main boom fouling on overhead objects (cables/other cranes etc)	Crane failure, falling loads	5	3	H	No Lifting operations are planned to be within a safe distance of overhead obstacles, if on arrival at site the circumstances have changed, no lifting should take places until adequate clearance is confirmed. ALE lift areas to be sectioned off from other port operations.	5	1	L	Stop work and inform supervisor. Administer first aid where appropriate by trained first aider. If worse than first aid seek emergency assistance following local procedures. Initiate appropriate incident reporting procedure and inform site.
2	Manual Handling, i.e. lifting / pulling / pushing equipment into place.	Strain injuries, potential for worse than first aid injuries/permanent.	5	3	H	All operatives to be conservative and comply with appropriate manual handling techniques. Mechanical lifting to be utilised to eliminate	H	1	L	As Per item 1.

S = **S**everity with existing controls in place. **Score 5-1**

L = Likelihood with existing controls in place. **Score 5-1**

R = **R**isk rating with existing controls in place. **Score L/M/H**

S* = **S**everity with specified additional controls in place.

L* = Likelihood with specified additional controls in place.

R* = **R**isk rating with specified additional controls in place.

Risk Rating Score: **Evaluation:** **R & R*** are identified by multiplying the **Severity** and **Likelihood** scores and translating them into a **Risk Rating** using the formula below.

1 > 5 **L** = **L**ow Risk – Risks are broadly acceptable and risks should be monitored to ensure the level does not change

6 >10 **M** = **M**edium Risk – Risks are tolerable, but only if control measures identified are fully implemented.

12 > **H** = **H**igh Risk – Risks are intolerable and additional controls must be introduced to reduce risk further.

TO BE USED IN CONJUNCTION WITH THE RISK ASSESSMENT PROCEDURE

MINIMUM PPE ON ALL SITES IS SAFETY HELMET, HIGH VISIBILITY CLOTHING, SAFETY GLASSES AND SAFETY FOOTWEAR

No	Potential Hazard	Potential Consequence	Initial Risk			Additional Control Measures Physical Actions	Residual Risk			Emergency Actions
						manual handling where possible. Full PPE to be used. Seek help if load is too heavy for one person.				
3	Hand tools; spanners, drifts, hammers, crow bars/levers.	Hand injuries, bodily harm.	2	3	M	All hand tools to be kept in good condition and suitable gloves to be worn. Correct tool to be used for the job and each tool used correctly. Use mechanical aids wherever possible.	2	1	L	Inform supervisor and seek first Aid if appropriate Initiate appropriate incident reporting procedure.
4	Maintenance to Plant & Equipment.	Serious injury, damage to property and equipment.	4	3	H	Maintenance personnel to be trained and to follow Safe System of Work e.g. Operators handbooks/Manufacturer's instructions, including shutdown, brakes engaged, areas taped off etc. Wear suitable PPE. No reversing without clear instructions from person at rear of vehicle.	4	1	L	As Per item 1.
5	Ground subsidence under crane	Crane unstable, possible overturning. Damage to property, equipment and injury to personnel, possible fatality	5	2	M	Ground conditions and composition investigated, and to be confirmed by client as suitable for loading applied (refer to Method Statement). Ground prepared to suit loads imposed by outriggers, as per information supplied by ALE. Load spreading deployed to reduce ground loadings to a suitable and acceptable level where necessary.	5	1	L	As Per item 1. Cordon off area
6	Failure of Lifting Tackle.	Damage to property, equipment and injury to personnel.	4	2	M	Check all lifting tackle for capacity and Thorough Examination certification. Prior to use, equipment is selected to ensure it has the safe working capacity and is suitable. All lifting tackle to be inspected by ALE prior to use and inspection recorded and hold correct in date colour code. Colour code system to be used where applicable	4	1	L	As Per item 1.
7	Failure of lifting points or structural integrity of load being lifted.	Load falling, possible collapse of crane, leading to fatality or serious injury & damage to property /equipment	5	2	M	All equipment to be lifted must be capable of withstanding loadings imposed into any lifting point or attachment thereof. Equipment to be lifted from designated lifting points. All loads lifted will be slung by competent operatives and by means of	5	1	L	As Per item 1.

No	Potential Hazard	Potential Consequence	Initial Risk			Additional Control Measures Physical Actions	Residual Risk			Emergency Actions
						certificated lifting accessories only. All lifting points must be inspected, tested and certified for lifting. No item of equipment will be lifted without assurance of its structural integrity from the client. Avoid working or passing beneath suspended loads.				
8	Poor communication, Uncoordinated lifting techniques	Possible serious injury to personnel and possible damage to crane or equipment if control is lost.	4	2	M	One person appointed to control the crane at all times. System of hand signals known to all riggers and persons who may direct operations utilised. Persons involved will speak the same language. If communication is lost all operations will stop immediately. The designated Banksman/Slinger will be identified to the operator & crew prior to operation. Pre-operation briefing in the form of a Toolbox Talk will be carried out normally at the start of every day and prior to any major or special lifting operations by the ALE supervisor to all persons involved in the operation, to ensure all persons understand the activities, roles and responsibilities. The toolbox talk will be recorded.	4	1	L	As Per item 1. Pause operation until systems are working or alternative arrangements made.
9	Lifted item contacting with other structures.	Possible damage to item being lifted and damage to other structures of equipment, possible consequential injuries to personnel.	3	2	M	During a lift the item will be controlled by tag lines where practicable and the lift supervisor will be in contact with the crane operator to control the lift at all times, and to stop the lift if necessary. Any potential clashes with other structures will have been identified during the planning of the lift.	3	1	L	As Per item 1.
10	Unauthorised personnel in the area, visitors	Distractions, confusion, congestion leading to possible injuries to personnel.	3	2	M	Only nominated persons allowed to enter the area. Client will control security & access to the site. It will be ensured that appropriate PPE is used at all times.	3	1	L	As Per item 1 if appropriate. Physical barrier around ALE's working area.
11	Suspended load over equipment with personnel working in close proximity.	Personnel under suspended load. Serious injury to personnel.	5	2	M	No personnel shall be under a suspended load. All loads lifted will be slung by competent operatives and by means of certificated lifting accessories only.	5	1	L	As Per item 1.

No	Potential Hazard	Potential Consequence	Initial Risk			Additional Control Measures Physical Actions	Residual Risk			Emergency Actions
						Tag lines shall be used where practicable to control loads being lifted. All non-essential personnel will be restricted from the rigging area.				
12	Hazardous substances on crane.	Injuries, health effects and diseases caused by contact with fuels, lubricants and chemicals. Environmental hazard due to spillage.	2	2	L	All users to be made aware of the hazards of each substance – Refer to COSHH Assessments which is available on site. Provision of appropriate PPE. Substances to be stored in proper containers, only necessary amounts kept on site. Personnel to be trained in dealing with leaks or spillage of substance. Cranes to hold 'SPILL SORB'.	2	1	L	Refer to COSHH assessment for appropriate action. Use appropriate 'SPILL SORB' kit.
13	Inadequate access to and from work area, for crane operators and riggers.	Trips, falls leading to lost time injuries to personnel, head injuries	3	3	M	Access ladders to cabs of plant and vehicles to be maintained in good order, handrails fitted wherever possible. Provision of ladders and access scaffolding if necessary. Provision and use of appropriate Personal Protective Equipment.	3	1	L	Report to ALE supervisor/first aider, report to site. ALE accident/incident reporting procedure to be initiated. Trained First Aider to administer first aid where appropriate. Escalate to external aid if necessary.
14	Falls from height by riggers attaching the rigging tackle.	Injuries to personnel	5	2	M	Harness to be worn when offloading wagons. Use of scissor lifts and cherry pickers for rigging at height. Only competent and certified operators to use cherry picker.	5	1	L	As Per item 1.
15	Personnel being crushed or trapped during Blade set down.	Serious injuries to personnel. Possible fatality	5	3	H	During the lowering of the Blade, no personnel will stand under it or position themselves between the Blade and its foundations. The Blade will not be lowered until the supervisor has checked that all personnel are clear. Avoid pinch points at all times.	5	1	L	As Per No. 1.

Loading/Unloading Equipment

1	Manual handling of load restraint devices and sheets	Hand injuries from trapping, crushing, impact. Head injury from throwing lashings	4	3	H	Ensure no person is in the vicinity when lashings are thrown over the load. Wear gloves. Always use approved manual handling techniques.	4	1	L	Stop work and inform Supervisor. Administer First Aid

No	Potential Hazard	Potential Consequence	Initial Risk			Additional Control Measures Physical Actions	Residual Risk			Emergency Actions
										where appropriate by trained First Aider. If worse than First Aid, seek Emergency Assistance following local procedures. Initiate appropriate incident reporting procedure and inform site.
2	Work at height on trailer deck or on top of load	Falls from height, potential fatality Slips, trips & falls	5	3	H	Avoid accessing the deck wherever possible. Always ensure safe means of access e.g. trailer ladder is available and use fall arrest where no hand railing/airbags are provided. Do not walk backwards while standing on trailer or jump down from trailer deck. Ensure deck is tidy and free from slippery substances. Wear suitable safety boots with non slip soles.	5	1	L	As per item 1.
3	Reversing vehicles or vision obstructed	Possible fatality or collision	5	3	H	Always use Banksman for guiding moving vehicles especially if driver's vision is obstructed. Use radios or agreed hand signals where necessary	5	1	L	As per item 1.

Transport

1	Ground surface giving way during movement of Blade.	Trailer sinking and possible overturning of Blade. Serious injuries/fatality to personnel.	5	2	M	Ground to be prepared such that it is capable of taking the ground bearing pressure stated by ALE. Areas around the trailer to be kept clear, only nominated personnel to be in the vicinity of the trailer.	5	1	L	Stop work and inform supervisor. Administer first aid where appropriate by trained first aider. If worse than first aid, seek emergency assistance following

No	Potential Hazard	Potential Consequence	Initial Risk			Additional Control Measures Physical Actions	Residual Risk			Emergency Actions
										local procedures. Initiate appropriate incident reporting procedure and inform site.
2	Weight and/or CoG not as predicted.	Unable to lift Blade, damage to Blade, damage to transport equipment. Injury to personnel	3	2	M	Prior to movement ALE will perform a stability calculation as part of the rigging and transport study, to determine the optimum trailer configuration for the load. No movement will take place with an unstable load.	3	1	L	As per No. 1 & Transportation supervisor responsible to action in the case of an unwanted event.
3	Structural integrity of Blade	Blade collapsing resulting in damage to Blade and trailer, possible injury/fatality to personnel and members of public.	5	3	H	ALE will propose a method of transport; it is the Client's responsibility to check the Blade can be transported in the proposed manner. It is the responsibility of the Client/site to carry out any temporary works on the Blade if required. If during movement, the Blade shows signs of failure, then the operation will be aborted.	5	1	L	As Per No. 1.
4	Blade stability on trailer.	Blade falling off trailer due to unstable trailer/suspension instability. Damage to Blade and property and injuries to personnel and members of the public. Possible fatality. High loads unstable due to wind loadings.	5	3	H	Prior to movement ALE will perform a stability calculation as part of the rigging and transport study, to determine the optimum trailer configuration for the Blade. No movement will take place with an unstable load. Weather forecasts and wind speeds will be monitored before and during the move, if appropriate.	5	1	L	As Per No. 1.
5	Collision with other vehicles or Blade on the transport route. Vehicles running into personnel.	Damage to Blade, vehicles and damage to property. Possible fatality.	5	2	M	Installation and site drawings should show any interference points and clearances, personnel will be briefed to act as watchers to ensure that potential problems are noticed and can be corrected. Only essential personnel to be in vicinity of transport operations. All personnel to wear high visibility clothing. Banksman to be used in areas where there is restricted vision and areas where there is little room for	5	1	L	As Per No. 1.

No	Potential Hazard	Potential Consequence	Initial Risk			Additional Control Measures Physical Actions	Residual Risk			Emergency Actions
						movement. Transport route to be kept clear of obstructions were appropriate. Supervisors in radio communication will control all movement with operators and on a face-to-face basis. Radio communication using approved devices only. Load to be observed and monitored during all operations.				
6	Tyre failure on trailer.	Delay to operation, possible transfer of weight to other tyres, and more tyre failures.	2	2	L	Spare wheels to be available on site if required and tyres can be changed whilst under full load. Adjacent tyres have redundant capacity.	2	1	L	
7	Pneumatic failure/brake failure.	Trailer running away unbraked.	3	2	M	Each trailer is air braked and spring braked so leaking air pipes would cause brakes to be applied. Fitters are able to change leaking air pipes and faulty compressor parts on site.	3	1	L	As Per No. 1.
8	Hydraulic Suspension failure.	Possible collapse of trailer or one part of trailer or a single suspension ram, resulting in possibility of Blade falling from trailer, possible injuries/fatality.	5	2	M	Trailers are regularly inspected for preventative maintenance to minimise failures. As trailer combinations are never loaded to more than 90% of their working capacity there is an element of contingency. The trailer hydraulic system has numerous non-return valves to ensure that hydraulic fluids can only be released in a controlled manner.	5	1	L	As Per No. 1.
9	Hose/pipe rupture.	Leakage of hydraulic oil, loss of hydraulic pressure, possible collapse of trailer.	2	3	M	Each suspension strut is fitted with safety valves to prevent collapse due to pressure loss. Oil spill kits and absorbent granules to be available on site and spills to be cleaned up immediately and reported. Drip trays to be used where applicable. Refer to COSHH Assessments.	2	1	L	Transportation supervisor responsible to action in the case of an unwanted event.
10	Suspension strut failure.	Collapse of suspension unit. If more than 10% of suspension struts failed the operation would have to be aborted as trailer may collapse.	3	2	M	Lockout safety valves would prevent trailer collapse, and then the strut would be valved off to allow it to be picked up, to allow movement to continue.	3	1	L	As Per No. 1.
11	Structural failure to trailer.	Trailer joint breaking, collapse of trailer load falling off trailer. Operation	3	2	M	ALE regularly inspects trailers for structural defects and trailers are never loaded beyond 90% of design capacity. Structural analysis	3	1	L	As Per No. 1.

No	Potential Hazard	Potential Consequence	Initial Risk			Additional Control Measures Physical Actions	Residual Risk			Emergency Actions
		would have to be aborted.				of trailers is performed for each operation to ensure that loads are within trailer capacity.				
12	Communications.	Loss of communications would delay the operation.	1	3	L	Throughout all movement operations, communication between all parties is by radio and on a face to face basis. Spare radios with chargers are carried on site. Wherever possible visual contact is maintained between all concerned. Load to be observed and monitored during all operations.	1	2	L	
13	Slips, trips and falls.	Injuries to personnel.	2	3	M	Good housekeeping and clearance of transport routes prior to move.	2	1	L	As Per No. 1.
14	Moving machinery parts on engines and trailers.	Injuries to personnel.	3	2	M	Use of guards on all machinery with moving parts. Under no circumstances must guards be removed whilst machinery is running. Visual checks to be made to ensure guards are correctly fitted prior to start up.	3	1	L	As Per No. 1.
15	Manual handling of trailer packing and lashings.	Injuries to personnel.	3	3	M	ALE personnel perform recognised manual handling techniques to minimise the risk of any injury to personnel. Mechanical handling equipment shall be available and used for the lifting /moving of loads greater than that of acceptable individuals capabilities.	3	2	M	As Per No. 1.
16	Working at heights.	Falls with subsequent injuries. Possible serious injuries, possibly fatal.	5	3	H	If ALE personnel are required to work on the trailer bed at height for operational reasons, only those personnel competent to do so are authorised to. Personnel working at heights will only do so if working whilst wearing a safety harness using a fall arrest block. If possible remove the task from height to low level.	5	1	L	As Per No. 1.
17	Trailer operators or personnel falling from moving vehicles or trailers.	Serious injuries to personnel, possible fatality.	5	2	M	No personnel are permitted to ride on moving vehicles or trailers unless a proper seating position is provided.	5	1	L	As Per No. 1.

No	Potential Hazard	Potential Consequence	Initial Risk			Additional Control Measures Physical Actions	Residual Risk			Emergency Actions
18	Fire on vehicles engines and trailers.	Risk of damage to property and equipment.	4	2	M	All tractor units are equipped with fire extinguishers. Engines have shut off switches in the event of fire. Spare power pack unit available.	4	1	L	As Per No. 1.
19	Operators coming into contact with Hydraulic oil and Diesel oil.	Skin irritation, dermatitis.	2	3	M	See COSHH assessment for Hydraulic oil and diesel.	2	1	L	See COSHH assessments for Hydraulic oil and diesel.
21	Failure of computer control in power pack	Delay to operation	2	2	L	Spare computers are carried and can be quickly installed	2	1	L	

Environmental Assessment

1	Noise during mechanical operations.	Impaired hearing after sustained exposure. Nuisance to Neighbours around working area or along route.	3	2	M	Non-essential personnel to keep away from noisy operations. Personnel to wear hearing protection around noisy operations. Where applicable noise assessments to be carried out and recorded. Road movements through populated areas planned and scheduled so as to minimise noise pollution.	3	1	L	If noise levels raise to a dangerous level, work will be halted while adequate hearing protection is supplied.
2	Oil Spills from plant and equipment	Damage to property, environmental effects. Contamination of storm drains / waterways	4	3	M	Oil spill kits and absorbent granules to be available on site. Employees to follow instructions on pack and collect up contaminated waste afterwards for disposal as described below. Drip trays to be used where applicable. Positions of drains/waterways to be taken into account during planning of work. Pre-commissioning checks on all plant to be used on site.	4	1	L	Inform supervisor Utilise 'spill sorb' kids (or equivalent)
3	Disposal of General Waste	Litter, attraction of rodents, untidy worksite	3	2	M	Brief all personnel during induction on correct disposal method and location of bins. Ensure all waste skips, containers are secure and covered where appropriate. Make arrangements with site host if required and ensure all waste is collected by a registered waste carrier and taken to licensed disposal site (check licenses/registrations). Maintain appropriate records of disposal.	3	1	L	

No	Potential Hazard	Potential Consequence	Initial Risk			Additional Control Measures Physical Actions	Residual Risk			Emergency Actions
4	Fumes, Exhausts and Odours	Air Pollution, respiratory effects to personnel	3	2	M	Do not run or idle engines if not needed. Exhausts should only be run in open and well ventilated areas.	3	1	L	Ensure adequate ventilation (open fire doors etc.) if necessary.
5	Disposal of Chemical Waste and Emergency Incorrect Disposal	Land and Water Pollution	4	2	M	Brief all personnel during induction on correct disposal method and location of bins. Must be collected from site by an ALE approved Registered Waste Carrier and must be taken to licensed disposal site (check licenses/registrations). Make arrangements with site host if required and ensure appropriate records of disposal are maintained.	4	1	L	Abide to site rules. In an emergency inform the local enforcing Environmental Agency.
6	Poor communication	Employees unaware of environmental aspects cause pollution or excess waste	3	2	M	All personnel to be briefed on the environmental aspects and requirements of the ALE Integrated Management System. Site-specific Toolbox Talks and refresher training to be given as required.	3	1	L	Work to be halted until communication is re-established.
7	Environmental.	Lack of traction due to ice/snow, loss of visibility due to fog/darkness. Operation would cease if the above conditions applied.	3	2	M	Gritting of roadways, snow clearance/ice clearance. Provision of adequate lighting to light up the working area.	3	1	L	Stop work and inform supervisor.

Traffic

1	Collision between mobile plant and/or vehicles and/or people.	Impact or crushing leading to fatality or serious injury. Damage to vehicles or plant.	5	3	H	Use of flashing lights & sirens on goods vehicles & personnel to wear high visibility clothing/vests and safety footwear. General Public to be kept clear with assistance from Police where necessary. Restricted vehicle speeds. Segregation enforced and clear traffic management instructions and signs to be displayed as required. Banksmen to be provided as necessary. Where possible maximum use must be made of one-way circuits. All drivers & plant operators to be trained, competent and authorised. No unauthorised operative shall operate plant. All plant should be approached so that the	5	1	L	Stop work and inform Supervisor. Administer First Aid where appropriate by trained First Aider. If worse than First Aid, seek Emergency Assistance following local procedures. Initiate appropriate incident reporting

No	Potential Hazard	Potential Consequence	Initial Risk			Additional Control Measures Physical Actions	Residual Risk			Emergency Actions
						Driver/Banksman is aware of your presence. All employees to receive safety awareness training, be site-inducted and participate in toolbox talks as appropriate. Visitors also require induction and should be accompanied at all times as appropriate.				procedure and inform site.
2	Collision due to unexpected movement, e.g. during maintenance.	Impact or crushing leading to fatality or serious injury. Damage to vehicles, plant, property and equipment.	5	2	M	Maintenance to follow procedures set down in Operators handbooks, i.e., shutdown, brakes engaged, areas taped off etc. No reversing large vehicles/plant without clear instructions from Banksman at rear of vehicle. Personnel to wear high visibility clothing/vests. Reversing beacons to be maintained where fitted. Keep personnel clear of slewing plant and vehicle tail swing.	5	1	L	As per item 1.
3	Collision due to distraction or lack of control while driving & using a phone	Impact or crushing leading to fatality or serious injury. Damage to vehicles, plant, property and equipment.	5	3	H	Any use of mobile phones while driving/operating mobile plant is prohibited. Mobile phone use if permitted in road vehicles but only with an approved hands-free kit. However hands-free use is also discouraged. Personnel are encouraged to pull over in a safe area or to switch off and use voice mail function after arrival at destination.	5	1	L	As per item 1.
4	Collision with property or structures on site due to unexpected conditions.	Impact or crushing leading to fatality or serious injury. Damage to vehicles, plant, property and equipment.	5	3	H	Cars to be parked in accordance with site rules. Site drawings should show any interference points and clearances. Banksmen to be used as necessary. Transport routes to be kept clear of obstructions and cordoned off as exclusion zones where necessary. All heavy movements will be controlled by supervisors in radio communication with operators. Instructions to move during alignment operations will be given by the Engineer responsible. Use of trained, competent and authorised operators & banksmen. Use reversing sirens & lights on vehicles, high visibility clothing, & radios	5	1	L	As per item 1.
5	Access/egress to/from work areas	Slips, trips & falls leading to personal injury	3	4	H	Pot-holes, pits, excavations and edges to be suitably covered or protected and additional	3	1	L	As per item 1.

No	Potential Hazard	Potential Consequence	Initial Risk			Additional Control Measures Physical Actions	Residual Risk			Emergency Actions
						lighting provided where necessary. Access route surfaces to be maintained in good condition. Slip/trip hazards to be tidied away and materials stored safely. Additional PPE provided as required. Access steps on plant and vehicles to be in good order. Provision of ladders, MEWPs or access scaffolding as necessary. General Public to be kept clear with assistance from Police where necessary.				
6	Mechanical or electrical failure of vehicle/plant or other equipment fault	Uncontrolled operation, controls compromised or sudden stop leading to personal injury	4	2	M	All plant & vehicles to be used and subject to planned maintenance in accordance with manufacturer's instructions. Operators & drivers responsible for carrying out pre-use checks as appropriate and for keeping their plant/vehicle in good condition. All faults to be reported promptly for rectification.	4	1	L	As per item 1.

COSHH ASSESSMENT 004 – Transmission / Hydraulic Oil

Assessment By: S R Walker	**Review Date:** Jun 2010	**Next Review:** As required
Material: Liquimatic Transmission Oil, T46 Hydraulic Oil	**Supplier:** Any	**Manufacturer:** Shell, Morris Lubricants

Hazardous contents: On Heating.
Carbon Monoxide
Carbon Dioxide
Oxides of Nitrogen & Sulphur

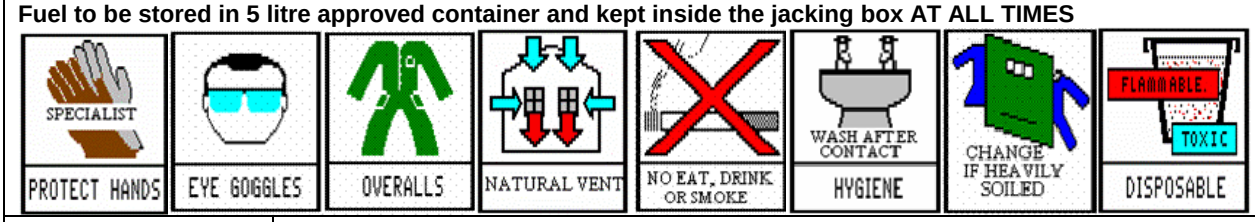
Description and form of substance: Mobile Liquid Oil

Normal Use: Hydraulic & Transmission Lubricants; exposure during pouring, leaks, clearing contaminated spill kits

Hazards in normal use:	Dermatitis due to prolonged/repeated exposure Inhalation of mist/vapours – aspiration into lungs

Normal Control Measures:
Protective clothing to be worn where prolonged/repeated contact is likely
Impermeable gloves to be worn during handling/pumping (EN 420)
Eye protection when handling heated product
Adequate ventilation, avoid frequent/prolonged skin contact
Avoid prolonged inhalation of mist/vapours use HSE approved respiratory when significant vapours occur
Avoid wearing clothing/footwear soaked in oil
Avoid skin contact, wash thoroughly with plenty of soap and water
Avoid splash filling at high flow rates to prevent electrostatic charges being generated

Storage:
Fuel to be stored in 5 litre approved container and kept inside the jacking box AT ALL TIMES



First Aid:	
Skin:	Remove contaminated clothing, Wash skin thoroughly with plenty of soap and water. Do not use solvents or thinners. Seek medical attention if irritation persists. In the event of high pressure injection, send injured person to hospital IMMEDIATELY .
Eyes:	Rinse IMMEDIATELY with plenty of water until irritation subsides (at least 10 minutes) if irritation persists seek medical advice.
Inhalation:	If inhalation of fumes causes irritation to the nose and throat or coughing, or in the unlikely event of dizziness or nausea, remove immediately from exposure to fresh air, using safe and proper rescue precautions, administer artificial respiration if necessary, get prompt medical attention if symptoms persist.
Ingestion:	Wash mouth out with water. Do not induce vomiting because of dangers of aspiration. Get medical advice IMMEDIATELY
Fire:	Use - Powder - Foam - Carbon Dioxide (CO_2). Do not use water. Toxic fumes are produced when substance is involved in a fire.

Spillage:	Ventilate area. Eliminate all sources of ignition. Shut off at source. Absorb in sand or inert absorbent material, Collect into a container, close lid. Suitable hand protection must be worn. Wear respiratory equipment when spillage is in confined space. Wear protective overalls and chemical / safety footwear. Do not allow spillage to enter the drain / sewers / water courses. Dispose of in accordance with Local Authority Regulations

Risk Assessment in Normal Use: LOW

COSHH ASSESSMENT 001 – Diesel Fuel, Gas Oil

Assessment By: R Elliot.	**Review Date:** Jun 2010	**Next Review:** As required
Material: Diesel Fuel, Gas Oil	**Supplier:** Any	**Manufacturer:** Any

Hazardous contents:

Polycyclic aromatic 100ppm, Route: Skin
Hydrocarbons 5mg/m^3, Route: Inhalation
Oil Mist

Description and form of substance: Clear Liquid, Diesel is pale yellowish colour, Gas Oil is red

Normal Use: Fuel for compression-ignition engines

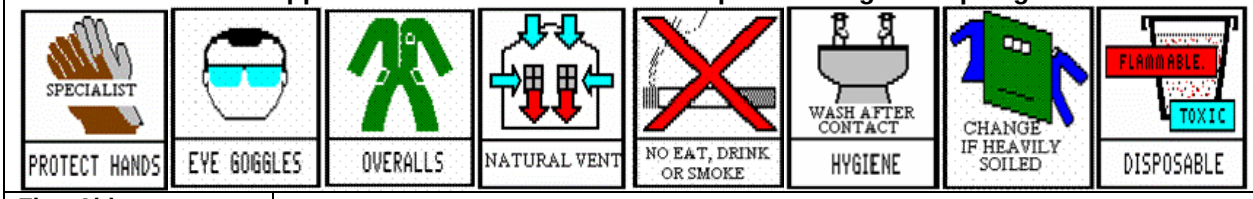
Hazards in normal use:	Dermatitis due to prolonged/repeated exposure Inhalation of mist/vapours – aspiration into lungs

Normal Control Measures:

Protective clothing to be worn where prolonged/repeated contact is likely
Impermeable gloves to be worn during handling/pumping (EN 420)
Adequate ventilation, avoid frequent/prolonged skin contact
Avoid prolonged inhalation of mist/vapours use HSE approved respiratory when significant vapours occur
Avoid wearing clothing/footwear soaked in oil
Avoid skin contact, wash thoroughly with plenty of soap and water
Avoid splash filling at high flow rates to prevent electrostatic charges being generated

Storage:

Fuel to be stored in approved closed containers and kept secure against spillage AT ALL TIMES



First Aid:	
Skin:	Remove contaminated clothing, Wash skin thoroughly with plenty of soap and water. Seek medical attention if irritation persists
Eyes:	Rinse IMMEDIATELY with plenty of water until irritation subsides (at least 15 minutes) if irritation persists seek medical advice.
Inhalation:	Remove immediately from exposure, using safe and proper rescue precautions, administer artificial respiration if necessary, get prompt medical attention.
Ingestion:	Do not induce vomiting because of dangers of aspiration. Get medical advice IMMEDIATELY
Fire:	Use - Powder - Foam - Carbon Dioxide (CO_2). Do not use water. Toxic fumes are produced when substance is involved in a fire.
Spillage:	Ventilate area. Vapour heavier than air so particular attention to adjacent pits/basements. Eliminate all sources of ignition. Shut off at source. Absorb in sand or inert absorbent material. Collect into a container, close lid. Suitable hand protection must be worn. Wear respiratory equipment when spillage is in confined space. Wear protective overalls and chemical / safety footwear. Do not allow spillage to enter the drain / sewers / water courses. Dispose of in accordance with Local Authority Regulations

Risk Assessment in Normal Use: LOW

11. APPENDICES

HSQE Briefing and Toolbox Talk Record Sheet

Date:		**Location:**	
***Name** of person delivering Talk:*		***Signature** of person delivering Talk:*	

Content of the toolbox talk: (Include details of any documents you have made reference to):

No	Attendee's Name	Signature	Date
1			
2			
3			
4			
5			
6			
7			
8			
9			
10			
11			
12			
13			
14			
15			

SELF-PROPELLED PRE OPERATIONAL CHECKLIST

Tick Appropriate Boxes		Serviceable	Defect	Rectified
Functional Test				
30	Steering Modes			
31	Drive Operation			

32	Suspension Circuit Check (Pressurise Individual Circuits)		
A.	B.	C.	D.

ALL DEFECTS MUST BE REPORTED to Workshop Manager / Trailer Supervisor

Details of Corrective Action Taken

Item Number	Fault	Action Taken

SIGNED: …….. DATED ……../ ……../……

ALE
SMARTER, SAFER, STRONGER

SELF-PROPELLED PRE OPERATIONAL CHECKLIST

Date: …… Fleet No.(s): ……..

Inspected By: …… Chassis No.(s): ……..

Suspension Set Up: ..... Type: ……

Tick Appropriate Boxes		Serviceable	Defect	Rectified
Brakes				
1	Hydraulic Leaks			
2	Air Leaks			
3	Condition of Supply Hoses – Hydraulic and Air			
4	Brake Arms / Chambers			
Steering (Hydraulic)				
5	Motors			
6	Potentiometers			
7	Hydraulic Leaks			
Suspension				
8	Leg Rams			
9	Hydraulic Lines			
10	Leg Valves			
11	Link Valves			
Drive System				
12	Motors			
13	Hydraulic lines			
Tyres & Wheels				
14	Tyre Pressures (10 bar)			
15	Condition of Tyres			
General				
16	Engine Oil			
17	Hydraulic Oil Filter Sensors			
18	Batteries			
19	Greased			
20	Fuel (Gas Oil)			
21	Water			
Electronics				
22	Hardware			
23	Computer			
24	Didi Faults			
25	Steering Errors			
26	Warnings			
27	Condition of Parts			
Chassis				
28	Cracks			
29	Manifold Pipes			