



Appendix 7.1:

Haulage Route Assessment



**ABNORMAL LOAD ENGINEERING LTD
Worldwide Transportation & Installation Specialists**



**ROAD TRANSPORTATION STUDY FOR 1 No. 500MVA TRANSFORMER
FROM
WARRENPOINT PORT
TO
MOY SUBSTATION – N/S INTERCONNECTOR PROJECT
REV A**

CLIENT	AECOM	ALE CONTRACT NO	13186
PROJECT NAME	N/S INTERCONNECTOR TRANSPORT STUDY		
REPORT DETAILS	ROUTE INVESTIGATION AND FEASIBILITY		
FROM	WARRENPOINT HARBOUR		
TO	MOY SUBSTATION		
VIA	DIRECT ROAD ROUTE		

Confidentiality Clause

We require you, your advisers and representatives to undertake that they will each keep strictly confidential any information that they, or any one of them, may discover or become informed of during the course of our discussions or through seeing any of our specifications, drawings, papers, machines, equipment, methods, processes, products and so forth.

We further require that any information required to be kept confidential shall not be used by you in any way whatsoever, except to put into effect any terms we may subsequently agree. You must undertake that you will not disclose any confidential information to any third party or any employee of yours unless they are required to know such information for purposes specifically concerned with our discussions and, if such disclosure is essential, such third party or employee shall agree to be bound by these terms.

CONTENTS PAGE

- 1.0** Executive Summary
- 2.0** Port Information – Warrenpoint Harbour.
- 3.0** Route Maps
- 4.0** Route Survey/Obstruction List
- 5.0** Photographic References
- 6.0** Key Factors
- 7.0** Conclusions
 - **Appendix A** Transformer Shipping Drawing
 - **Appendix B** Transport Equipment Data Sheets
 - **Appendix C** Swept Path Drawings

1.0 Executive Summary

ALE has been requested on behalf of AECOM, to complete a transport study for the road transportation of 1 no. 500MVA Transformer. This was to establish possible transportation routes to the new build substation site near Moy, Northern Ireland.

This study was based on a shipping drawing of 1 no. indicative 500MVA, 222t transformer provided by AECOM. Due to the drawing not showing transport carrying shelves, ALE has shown nominal transport carrying shelves in the probable position. *Dwg 13186-001*.

As part of the overall study ALE were responsible for conducting a detailed route survey to determine the best possible route, noting obstacles and potential pinch points along that route. The survey was assessed in terms of physical clearance and also potential issues with structural capacities.

Following initial correspondence with Roads Service, ALE were advised that transportation from Belfast was not an option as the M1 had numerous structures that failed based on the weights and dimensions provided.

ALE has recent previous experience of moving large transformers along a large proportion of this route. The route from Warrenpoint to Moy is already cleared for such weights up to Armagh and from further consultation with Roads Service regarding an extension from Armagh to Moy, there has been no structural issues highlighted for the transformer concerned within this study.

This transport study considers the use of the Warrenpoint Port, which is the closest and most suitable water connected port facility for onward transportation to the Moy since Belfast is unsuitable.

This study advises the use of 2 separate transport arrangements to be used during the delivery. Initially a 20 axle girder frame trailer is suggested, this is due to bridge and overhead line heights along the route. This trailer also spreads the weight of the load considerably which is beneficial when negotiating structures. Once at Moy, the right hand turn off the A29 onto the B106 is too restrictive for the girder frame trailer and as such, transshipment to a smaller Self Propelled Trailer (SPT) trailer would be required. An SPT trailer would also be of greater benefit when negotiating the substation access roads.

Through information and data gathered, ALE have completed drawings and carried out computer based swept path analysis to show negotiability of pinch point areas and have mapped out an area for transshipment.

2.0 Port Information

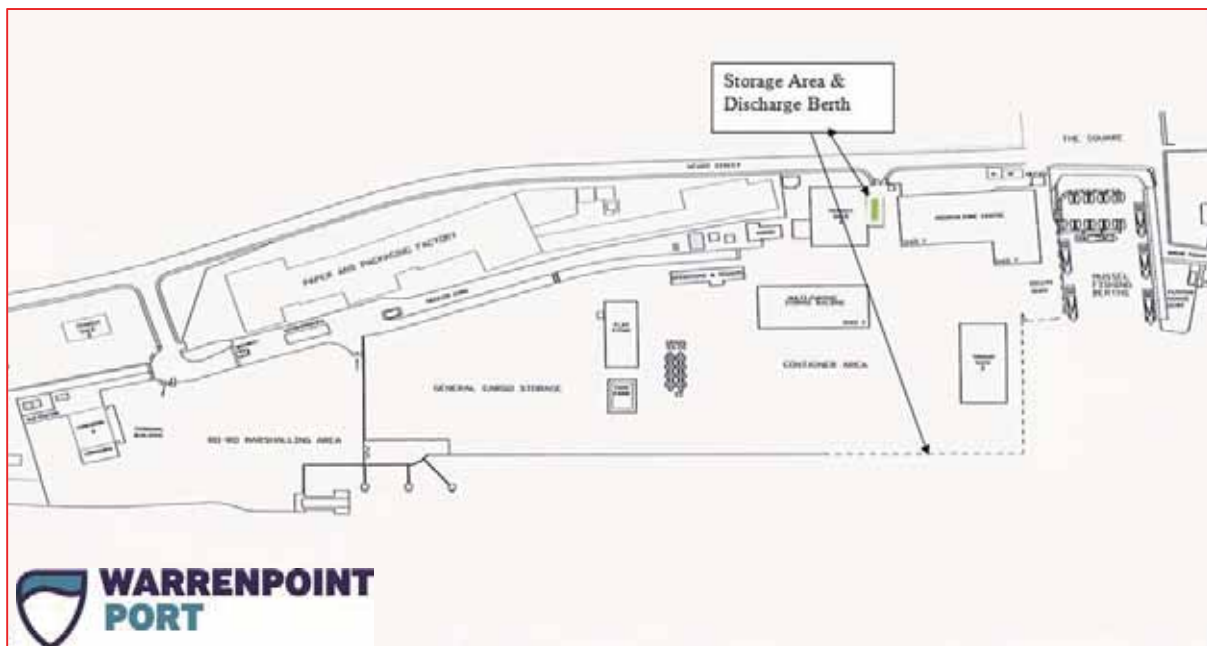
Warrenpoint Port

ALE considers Warrenpoint Port to be the closest and most suitable port facility for receiving project cargo for the onward transportation to Moy. Warrenpoint is strategically located at the head of Carlingford Lough on the East coast on the border of Northern Ireland and the Republic of Ireland.

The Port has 7 berths with a total quay length of 750 metres. 300 Metres of quay are dredged to 7.5m below Chart Datum and the remainder of the berths are dredged to a depth of 5.45m below Chart Datum. The maximum tidal range is 5.3m.

The port cranes at Warrenpoint are insufficient for lifting a transformer of this weight and the maximum ground bearing pressure allowed on the edge of the quay is 3t/m² which is unsuitable for mobile heavy lift crane(s) required for this lift. Because of these factors ALE would advise that the transformer be discharged via ships gear/crane or floating crane. Previous work carried out by ALE at Warrenpoint utilised ships own cranes for discharge.

Warrenpoint Port Overview Map

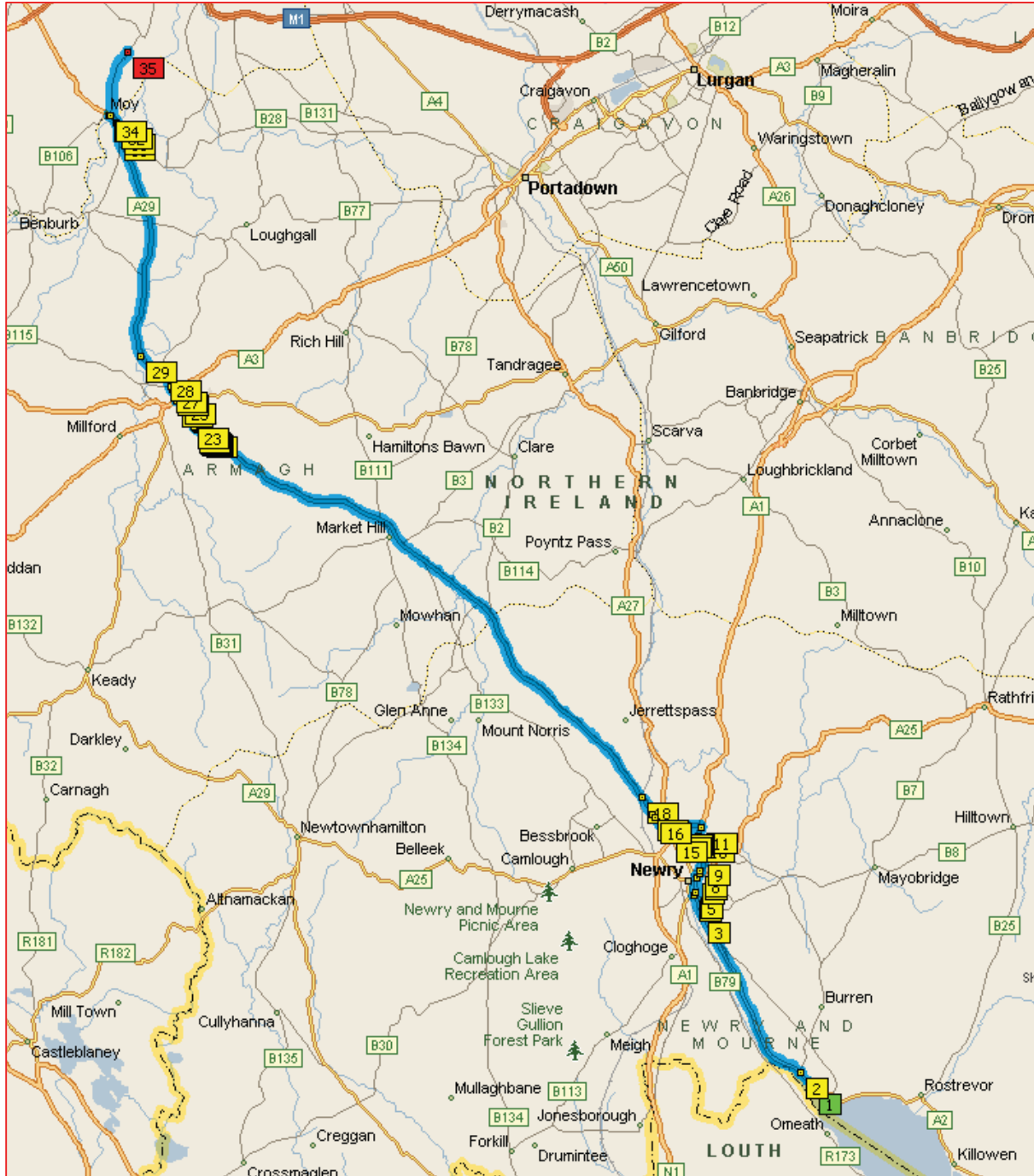


Port storage and charges

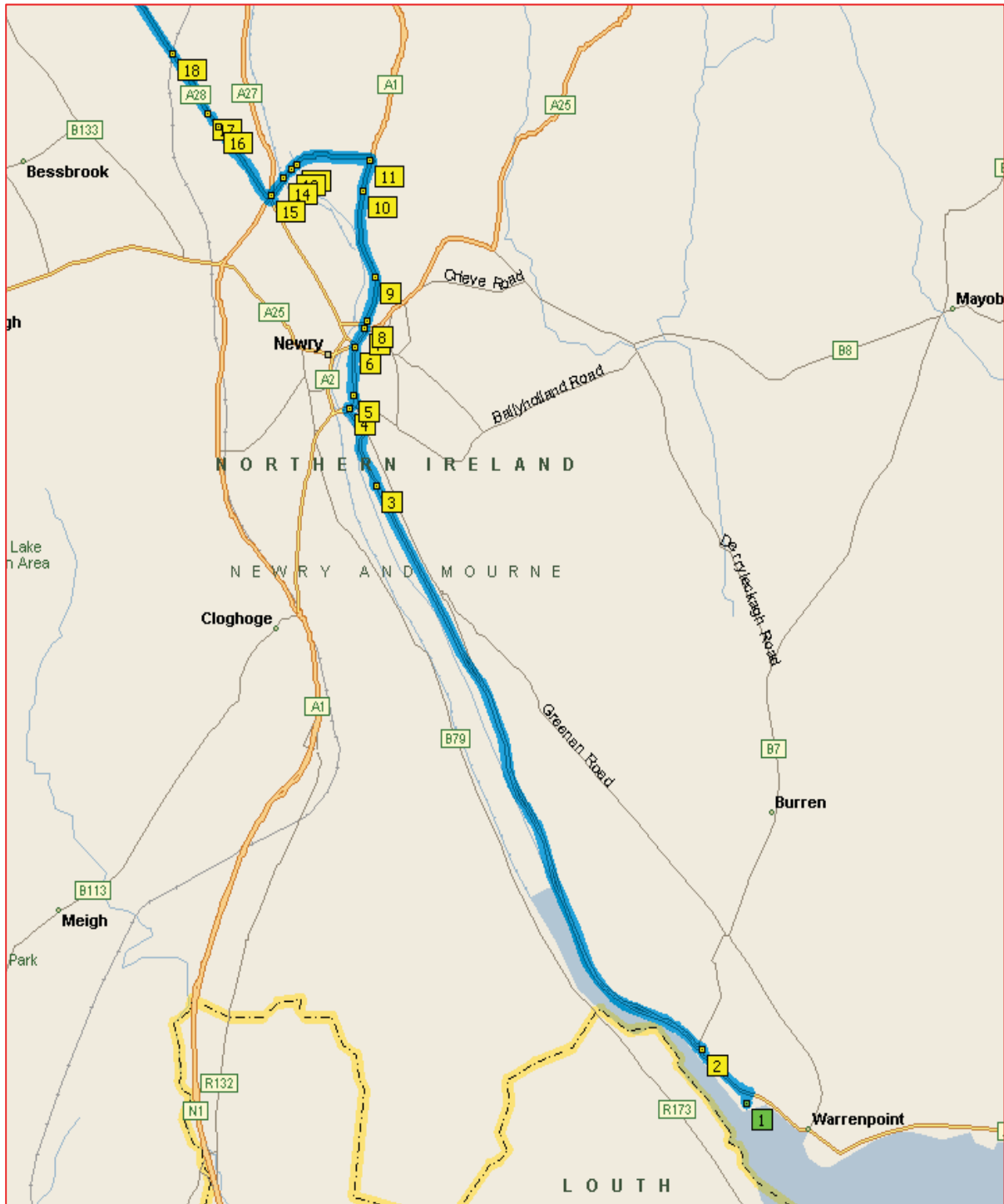
If required there are numerous storage locations around the port, however there is a specific area which is more suited to transformers shown above. This area allows large trailers to manoeuvre and gives adequate space for building girder frame trailers when loading.

3.0 Route Maps

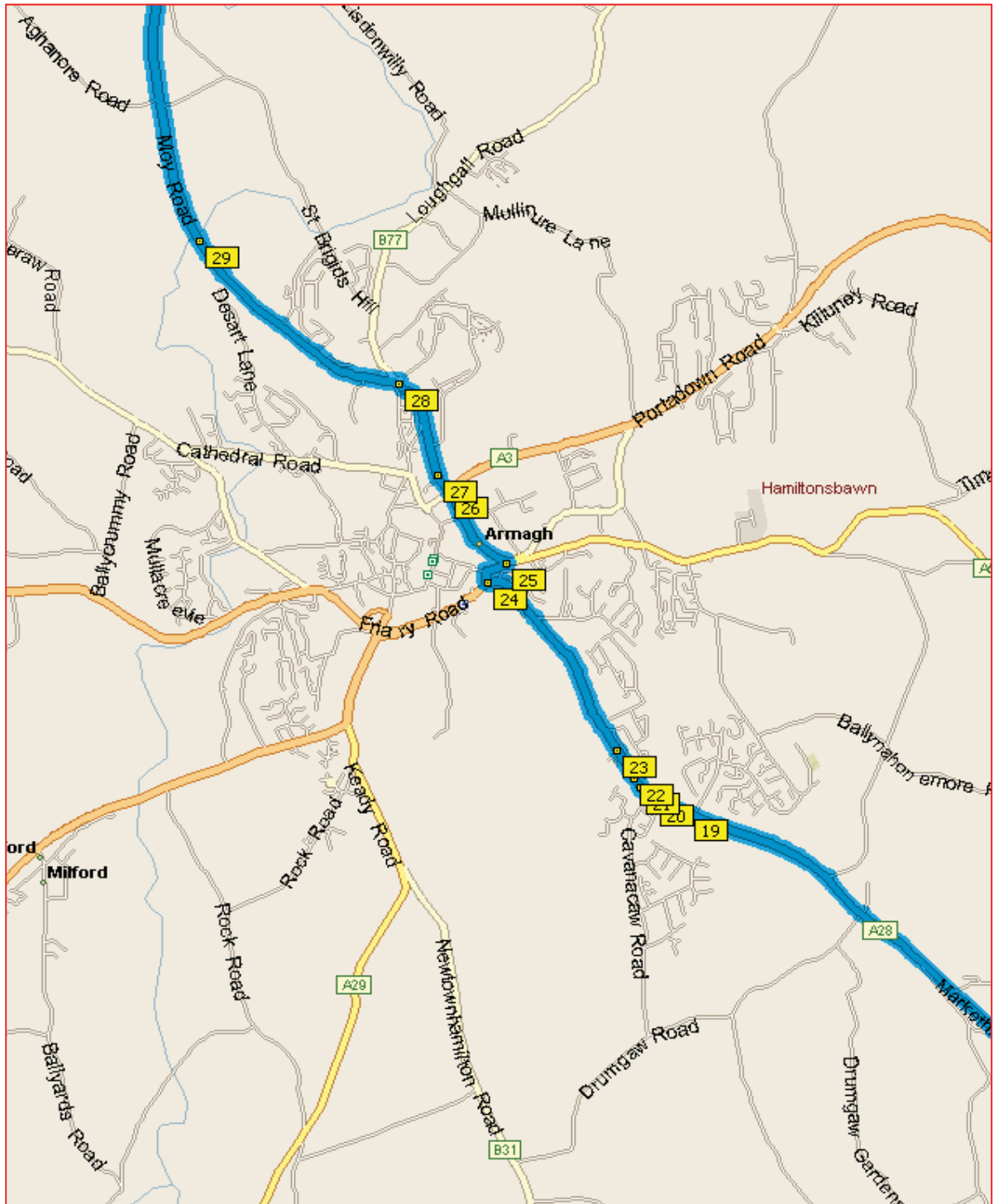
Route Overview



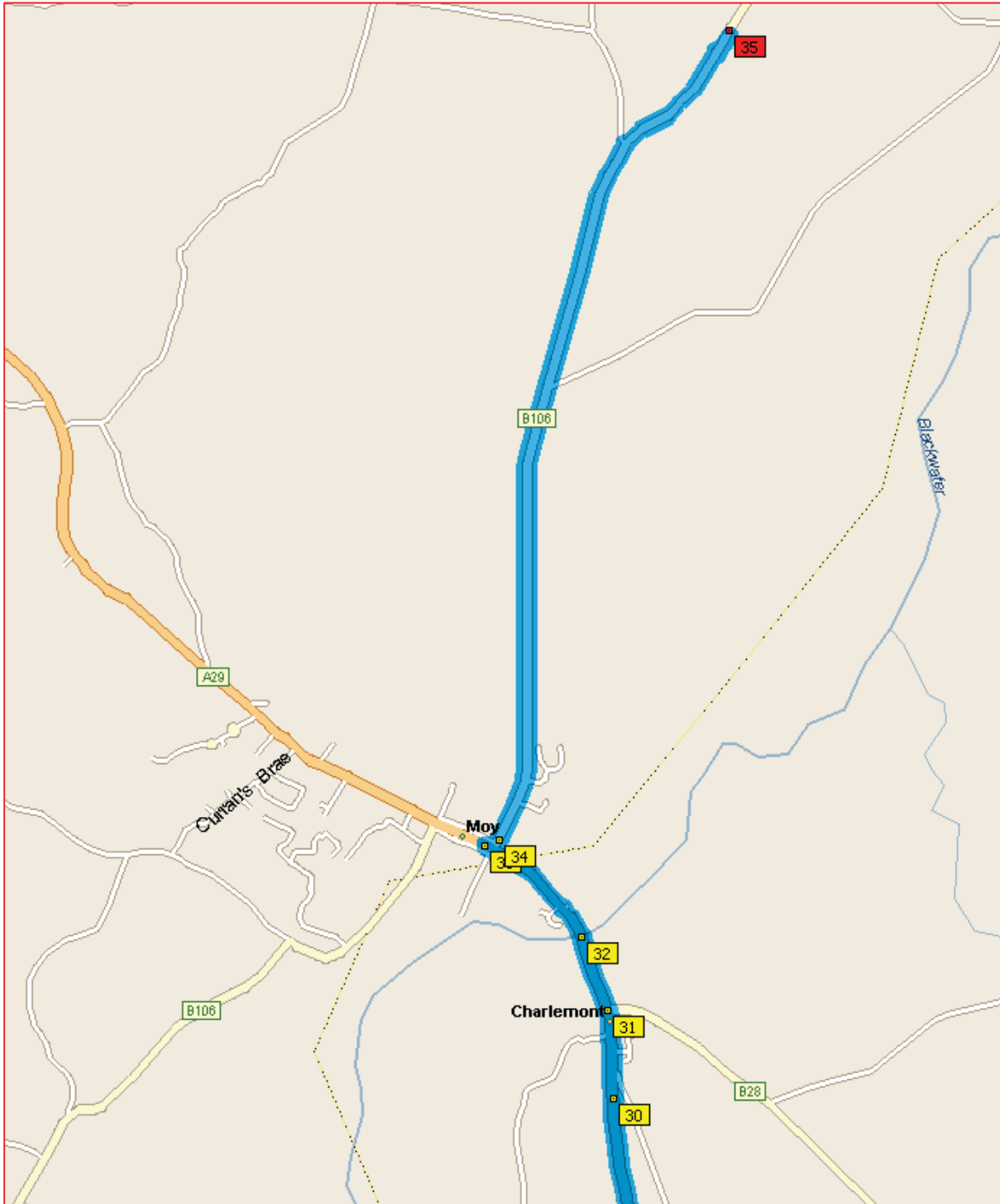
Section - Warrenpoint to Newry



Section - Armagh



Section – Moy to Substation



4.0 Route Survey/Obstruction List

Survey performing company / person: ALE UK Limited – Nathan Clarke

Survey date: 01/05/2014

Start of surveyed route: Warrenpoint Port

End of surveyed route: B106, Moy

Extension of route: N/A

Map of route: As per enclosure

No. of photos appended: 36

Surveyed for : 1 no. 222t 500MVA transformer

Roads utilised: A2, Abbey Way, Upper Water Street, Trevor Hill, A27, A28, Gaol Square, A3, A29, B106

Photo Ref No.	Type of Obstacle	Location (e.g. road-no.)	Miles	Map Reference No.	Responsible Authority / Ownership	Required measure(s)	Remarks
1	N/A	Warrenpoint Port	0.0	1	Warrenpoint Port Authority	NONE	
2	Junction	Warrenpoint Port onto A2	0.0	1	Warrenpoint Port & Roads Service	NONE	
3	Roundabout	A2	0.5	2	Roads Service	NONE	
4	Roundabout & Street furniture	A2	5.2	3	Roads Service	Removal of 1 no. chevron board	
5	Junction & Street furniture	A2 onto Abbey Way	5.8	4	Roads Service	Removal of 4 no. traffic lights & 1 no. keep left bollard	
6	Contraflow manoeuvre	Abbey Way	5.8	5	Roads Service	Contraflow manoeuvre required to allow cornering	PSNI to block road
7	Contraflow manoeuvre	Upper Water Street onto Trevor Hill	6.2	6	Roads Service	Contraflow manoeuvre required to allow cornering	PSNI to block road

8	2 no. roundabouts & Contraflow manoeuvre	A27	6.4	7	Roads Service	Contraflow manoeuvre required to negotiate roundabouts	PSNI to block road
9	Overhead Electricity lines	A28	6.5	8	NIE	NIE to confirm safety clearance	Overhead line measured at 5.4m
10	Overhead Electricity line	A28	6.8	9	NIE	NIE to confirm safety clearance	Overhead line measured at 5.6m
11	Street furniture	A28	7.4	10	Roads Service	Removal of 1 no. keep left bollard & 1 no. post	
12	Roundabout & Street furniture	A28	7.6	11	Roads Service	Removal of 1 no. Sign & 1 no. keep left bollard	
13	Bridge over river	A28	8.1	12	Roads Service	NONE	
14	Roundabout & Street furniture	A28	8.2	13	Roads Service	Removal of 2 no. Chevron boards	
15	Bridge over river	A28	8.3	14	Roads Service	NONE	
16	Roundabout	A28	8.4	15	Roads Service	NONE	
17	Bridge under motorway	A28	9.1	16	Roads Service	NONE	Bridge measured at 5.4m
18	Roundabout & Street furniture	A28	9.3	17	Roads Service	Removal of 1 no. chevron board	
19	Bridge under railway	A28	9.7	18	NI Railways	NONE	Bridge measured at 9.1m
20	Street furniture	A28	24.2	19	Roads Service	Removal of 1 no. post & 2 no. keep left bollards	
21	Street furniture	A28	24.3	20	Roads Service	Removal of 1 no. post & 2 no. keep left bollards	

22	Street furniture	A28	24.4	21	Roads Service	Removal of 1 no. post & 2 no. keep left bollards	
23	Street furniture	A28	24.4	22	Roads Service	Removal of 1 no. post & 2 no. keep left bollards	
24	Street furniture	A28	24.5	23	Roads Service	Removal of 1 no. post & 2 no. keep left bollards	
25	Junction	A28 onto A3	25.2	24	Roads Service	Contraflow manoeuvre required to negotiate turning	Dwg. 13186-002-0 Sheet 1&2
26	Junction	A3 onto Gaol Square & A3	25.3	25	Roads Service	Contraflow manoeuvre required to negotiate turning	Dwg. 13186-002-0 Sheet 1&2
27	Street furniture	A3	25.3	25	Roads Service	Removal of 2 no. keep left bollards, 1 no. traffic light & 1 no. sign	Dwg. 13186-002-0 Sheet 1&2
28	Roundabout	A3	25.6	26	Roads Service	NONE	
29	Street furniture	A3	25.7	27	Roads Service	Contraflow manoeuvre required to negotiate street furniture	
30	Roundabout	A3 onto A29	26.0	28	Roads Service	NONE	
31	Bridge over river	A29	26.8	29	Roads Service	NONE	
32	Street furniture	A29	32.4	30	Roads service	Removal of 1 no. speed sign & 1 no. bollard	
33	Street furniture	A29	32.6	31	Roads service	Removal of 1 no. give way/roundabout sign	
34	Bridge over river	A29	32.7	32	Roads service	NONE	
35	Transhipment Area & Junction	A29	33.0	33	Roads service	Temporary road closure & traffic diversions	Dwg. 13186-003-0 Sheet 1&2

36	Parked Vehicles	A29 onto B106	33.1	34	Roads service	300m of parking restrictions required on both sides of the road	Dwg. 13186-003-0 Sheet 2of2
NONE	Site Entrance TBC	B106	34.7	35	Roads service & NIE	TBC	TBC
End of Route							

5.0 Photographic References

Photo Reference 1



Photo Reference 2



Photo Reference 3



Photo Reference 4



Photo Reference 5



Photo Reference 6



Photo Reference 7



Photo Reference 8



Photo Reference 9



Photo Reference 10



Photo Reference 11

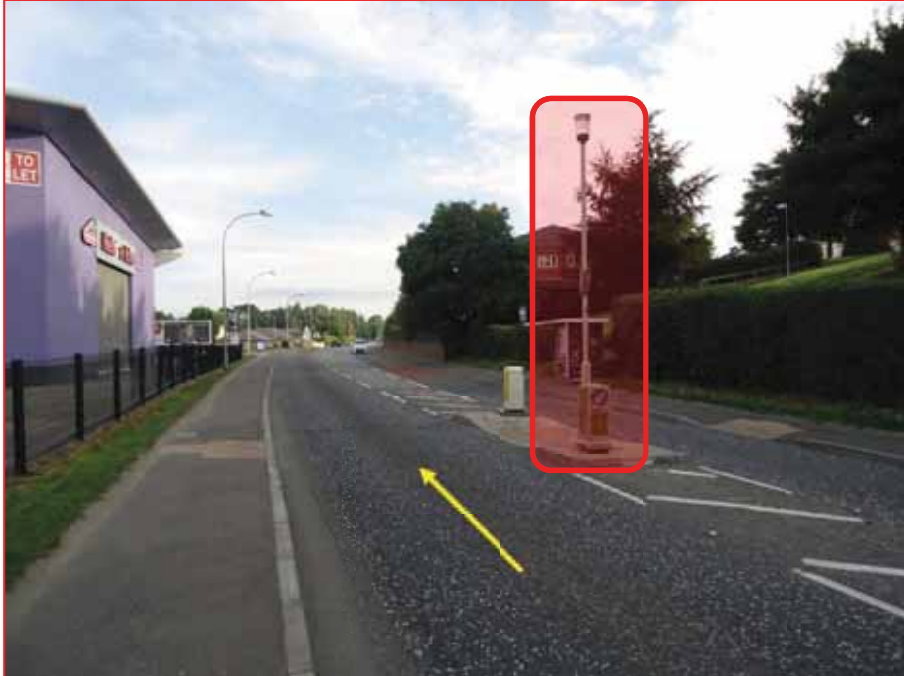


Photo Reference 12



Photo Reference 13



Photo Reference 14



Photo Reference 15



Photo Reference 16



Photo Reference 17



Photo Reference 18



Photo Reference 19



Photo Reference 20



Photo Reference 21



Photo Reference 22



Photo Reference 23

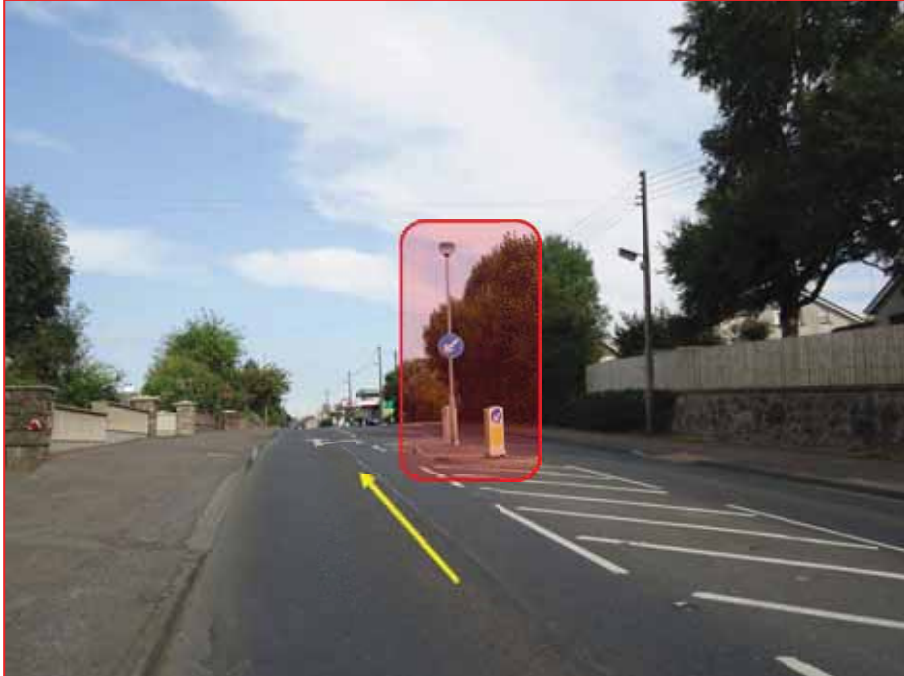


Photo Reference 24



Photo Reference 25 *Reverse arrows show reverse manoeuvre*



Photo Reference 26 *Reverse arrows show reverse manoeuvre*



Photo Reference 27

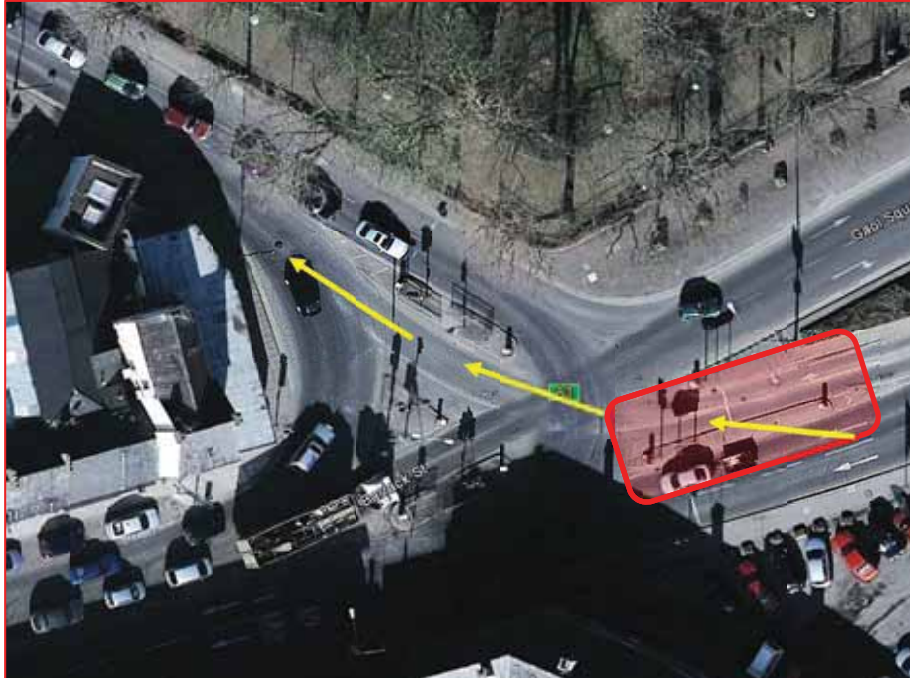


Photo Reference 28



Photo Reference 29



Photo Reference 30



Photo Reference 31



Photo Reference 32



Photo Reference 33



Photo Reference 34



Photo Reference 35

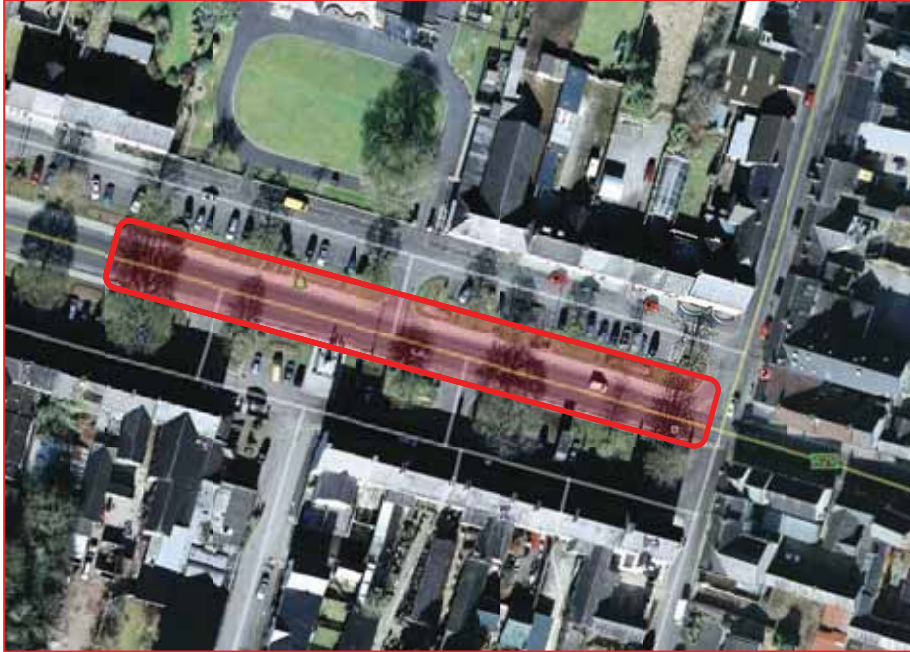
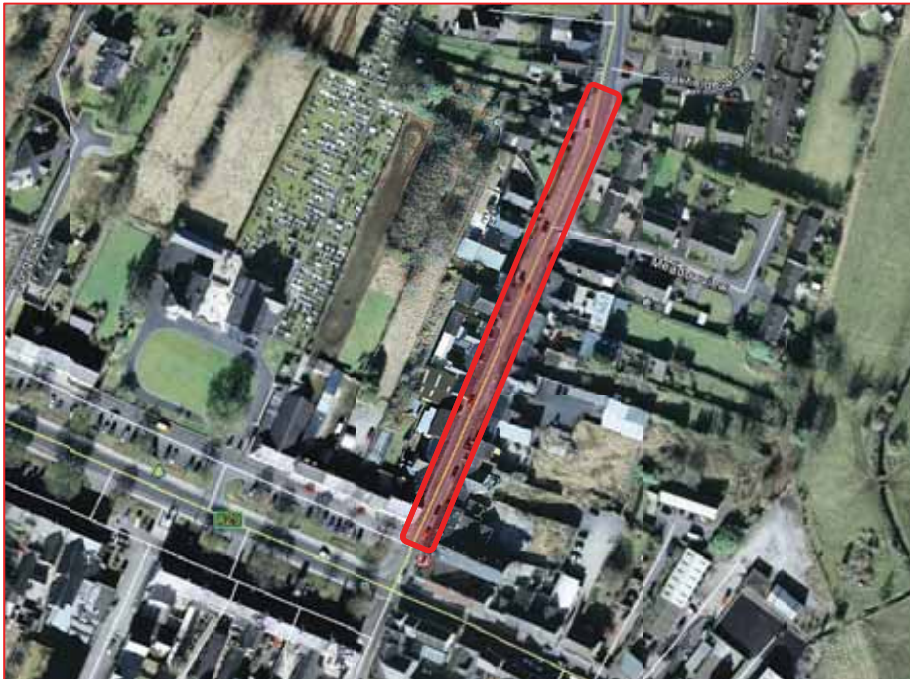


Photo Reference 36



End of Photographs

6.0 Key Factors

Structures (Over/Under)

During consultation with Roads Service, ALE indicated axle and wheel loads to be imposed on the route, from this there were no structures to be passed over which were highlighted as fail or risk and as such the above route was agreed in principle.

There are two bridges crossing over the route, one rail and one A road, both of which are at a sufficient height to pass under without concern.

Street Furniture

Removal of street furniture has been surveyed and highlighted above showing all necessary removals due to the overall width, length or general path of the transport arrangement. This assessment was carried out whilst carefully considering the commercial and environmental impact of removing such equipment.

A street furniture removal report would be issued to the local authorities prior to delivery, street furniture would be removed prior to the move at a time dictated by the work force and temporary traffic management would be put in place during the period of works if required.

Overhead lines

Only overhead lines considered to pose a hazard or obstruction to the transport arrangement were highlighted in the obstruction list. Those noted were 2 no. sets of overhead electricity overhead lines which will need to be checked by NIE for safety distance prior to movement.

There were a number of telecom lines crossing the route but none were noted as an obstruction.

Manoeuvring & Escorts

The load would be escorted by ALE for close manoeuvring communication and by the PSNI with a rolling road block throughout for traffic management. This road block would be further enforced during contraflow driving through Newry and for the reversing manoeuvre required in the centre of Armagh. This manoeuvre is necessary to mitigate a large amount of street furniture removal in the town, which would result in a high volume of disruption due to the amount of traffic lights and railings that would need to be removed. This manoeuvre would take approximately 20 minutes from the PSNI halting traffic to the trailer continuing on the correct side. The reverse manoeuvre in Armagh would also take approximately 20 minutes and would allow for a smaller amount of street furniture to be removed, *Dwg. 13186-002-0 Sheet 1&2.*

The travel time from Warrenpoint to the tranship area in Moy would take 5 to 7 hours including all manoeuvres. Following the transhipment to SPT, travel time from Moy to site would take approximately 1 hour.

The day on which the transport will take place will be dictated by the authorities on permit application. Abnormal moves predominantly take place on a Sunday and following an overnight stop at the transhipment area in Moy, the transhipment and subsequent SPT move would take place on the Monday.

Transshipment & Road Closure

Due to the overall envelope of the 20 axle girder frame, the right hand turn from the A29 onto the B106 cannot be achieved. This has resulted in the requirement for transshipment to a smaller, more manoeuvrable, Self Propelled Trailer (SPT) to negotiate the turn. The modular trailer would also be better suited to the more restrictive site roads once entering the substation.

ALE have an agreement in principle from Road Service to use a section of the A29 in central Moy to complete the transshipment to SPT, this is under the condition that works are only carried out in daylight hours. A temporary road closure with diversions would be required during the transshipment period; this would be covered under a Temporary Traffic Regulation Order (TTRO). ALE has been informed that a TTRO of this nature has a 4 week application lead time. *Dwg 13186-003-0 Sheet 1 of 2.*

Transshipment

The transshipment from girder frame trailer to SPT could take up to 15 hours due to the nature of the equipment being prepared such as mobile crane, load spreading mats, SPT build and the split and demobilisation of girder frame. These works would have to be split over a period of two days due to daylight working restrictions. This period could be greatly reduced if the SPT could mobilised using the mobile crane at site and then drove empty along the B106 to the transshipment area. *Dwg 13186-003-0 Sheet 1 of 2.*

Parking Restriction

A parking restriction would be required for a short period on a section of the B106 to enable the loaded SPT to negotiate the turn from the A29. This restricted area would be marked by no parking cones and signs and would also come with an application lead time of 4 weeks. *Dwg 13186-003-0 Sheet 2 of 2.*

Indicative Movement Programme

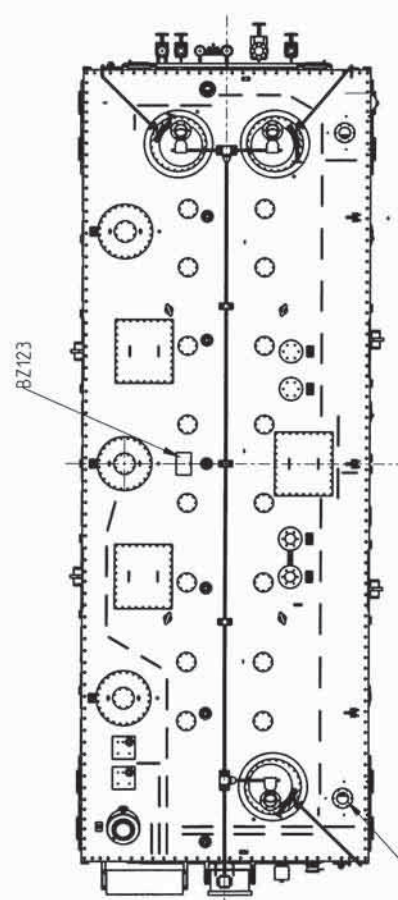
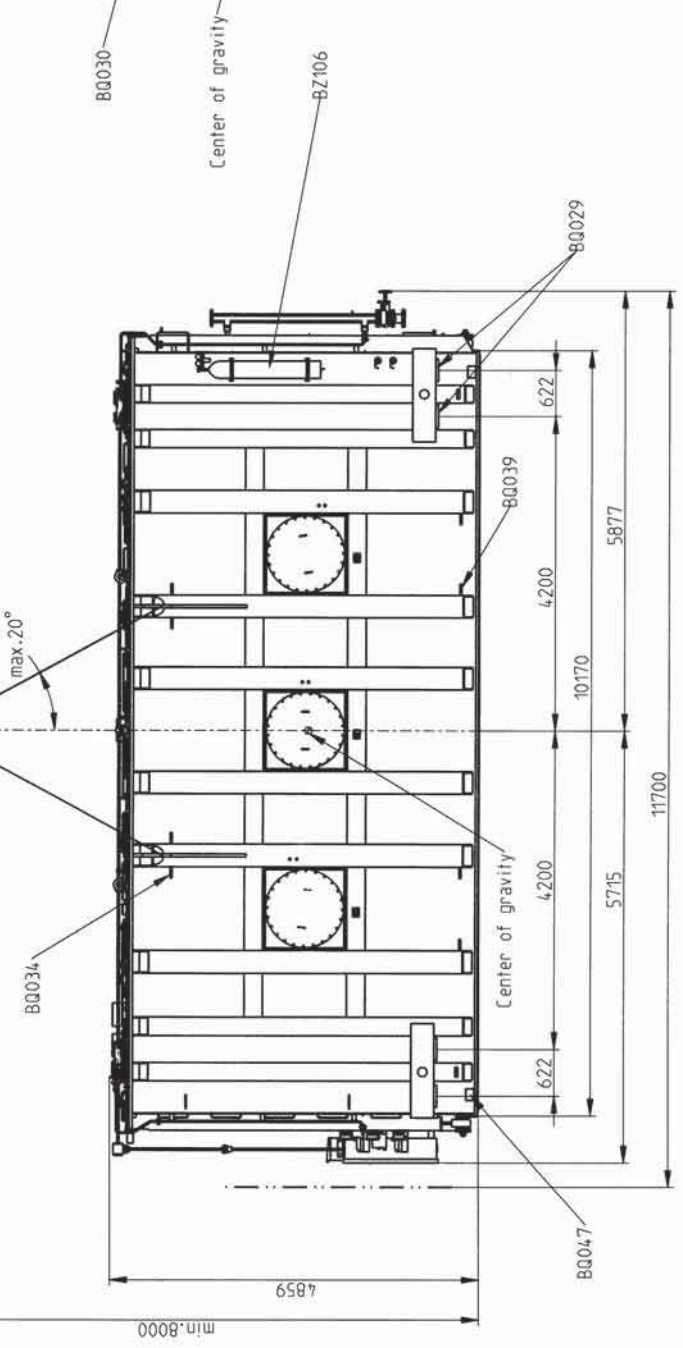
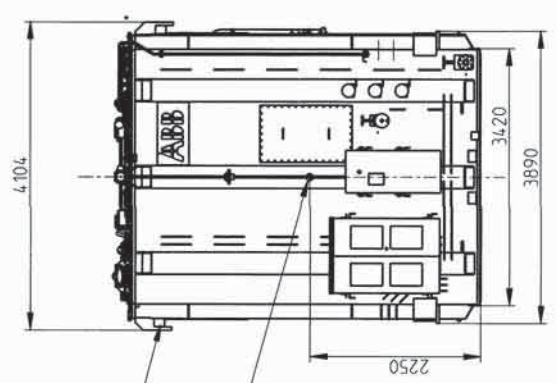
- Day 1. Mobilise to Warrenpoint Port
- Day 2. Build 20 axle Girder Frame Trailer
- Day 3. Receive transformer via crane to Girder Frame Trailer
- Day 4. (am) Transport transformer / Prepare tranship area & build SPT
- Day 4. (pm) Tranship to SPT / Deliver Transformer to Moy Substation via SPT
- Day 5. De-mobilise Girder Frame at tranship area / De- mobilise SPT at site
- Day 6 – 9. Install transformer if required

7.0 Conclusions

Following liaison with local authorities, the completion of the physical survey and subsequent analysis of the suggested route, ALE can advise that transportation of the 500MVA transformer can be successfully carried out from Warrenpoint Port to Moy Substation via road.

This result is based on the utilisation of 20 axle girder frame trailer *Dwg. 13186-001* followed by a transshipment to a 12 axle Self Propelled Trailer (SPT) *Dwg. 13186-004.*

APPENDIX A



- BQ029 Lifting device for hydraulic lifting jack
- BQ030 Lifting lug for complete transformer
- BQ034 Lashing lug Ø60
- BQ039 Pulling eye Ø60 for lashing
- BQ047 Blocking device
- BZ105 Pressure relief vent during transport
- BZ106 Automatic filling device for synthetic air
- BZ123 Three-way shock recorder

Preparations for transport of the transformer:

1. Drain the oil of transformer tank, conservator and radiator battery through gate valve, AA 001
2. A dry-air filled cylinder, item BZ 106, with automatic filling equipment is connected to the transformer tank during transport. The pressure valve for the reduced pressure at the dry-air cylinder is set to an automatic pressure of 1.5 bar. The pressure valve is set to 1.5 bar through item AA 004.
3. Drain 35 dm³ oil from each of the four LV bushings, item BZ 103 through item AA 004.
4. The pressure relief vent, BZ105, factory-set at 350 mbar, is mounted into the blind flange of pressure relief vent, CP081, which is dismounted during transport.
5. The pressure relief vent, CP081, is dismounted during transport.
6. All valves must be closed oil-tight.
7. A three-way Impact Recorder, item BZ 123 is mounted on the cover during transport.

The following parts must be dismounted for transport:

1. Oil conservator, item B8 085 and B8 089 and bracket, item BQ 150
2. HV-bushings, item G0 001 with turrets
3. LV-bushings, item G0 009 with turrets
4. LV-bushings, item G0 010
5. LV-bushings, item G0 011
6. Pressure relief vent, items EP 101, EP 102, EP 103
7. Fans, items AN 701 and AN 705
8. Radiator battery, item B8 085 and B8 089
9. Pipes between transformer tank and conservator
10. Pressure relief devices, items CP 081, CP 082
11. All pipes at transformer cover

The following items must be provided with a transport protection:

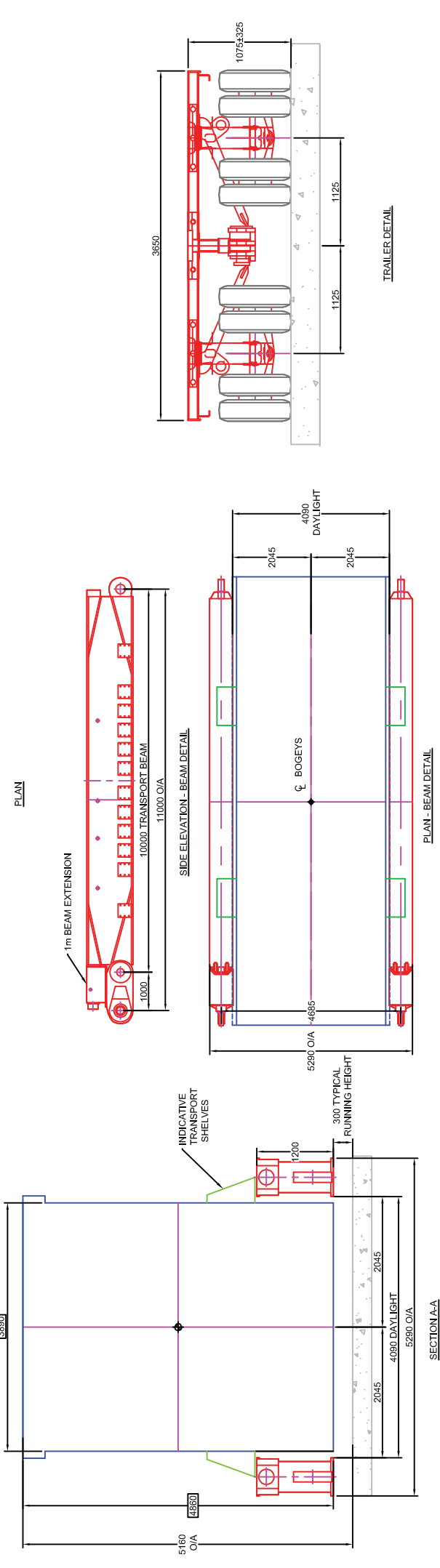
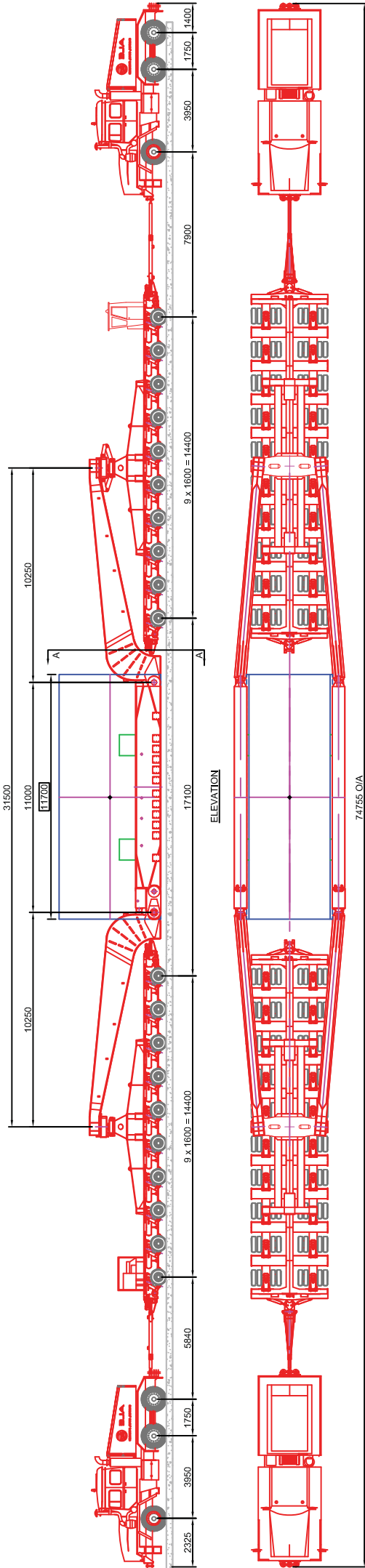
1. Dial-type thermometers, items CT 031, CT 033 and CT 034
2. Oil level indicators, items L1 060 and L1 064

All joint flanges and openings at transformer tank, conservator, pipes and radiators must be closed oil-tight with blind flanges.

Weights:

Active part	57 000 kg
Oil incl. bound oil	276 000 kg
Oil incl. bound oil	126 000 kg
Total	376 000 kg
Transport unit without oil	222 000 kg

APPENDIX B



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.
- ORIENTATION TO BE CONFIRMED

TECHNICAL NOTES:

- TRANSPORT SHELVES SHOWN ARE INDICATIVE
- WEIGHT, COG AND SHIPPING DIMENSIONS TAKEN FROM 600MW Transformer weights GA XDE294520-DBH RECEIVED 10/4/14
- ORIENTATION TBC
- 3.6M BOLSTER BEAMS

TRAILER SPECIFICATION

Rev.	Date	Drawn	Check	Description
0	02/04/14	LD	CT	ISSUED FOR INFORMATION
2				CP19 (Issue 5)

LOAD DETAILS

PAY LOAD	222
TRANSPORTER WEIGHT	135.3
ENGINE WEIGHT	-
AUXILIARY STEEL WEIGHT	0
TOTAL LOAD	357.3

LOAD PER AXLE LINE / TRAILER

LOAD PER FILE	8.93
LOAD PER WHEEL	2.23
GROUND BEARING PRESSURE (t/m²)	3.32

Project Information:

Project No.	13186
DWG	02/04/14
Drawn	LD
Check	CT
Scale	N.T.S
Sheet	1 of 1
Project No.	13186-001

Company Information:

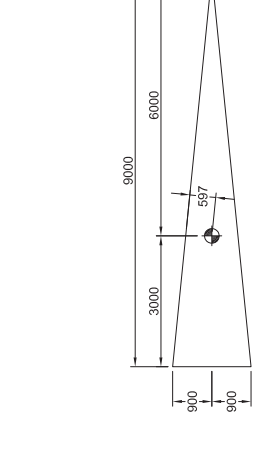
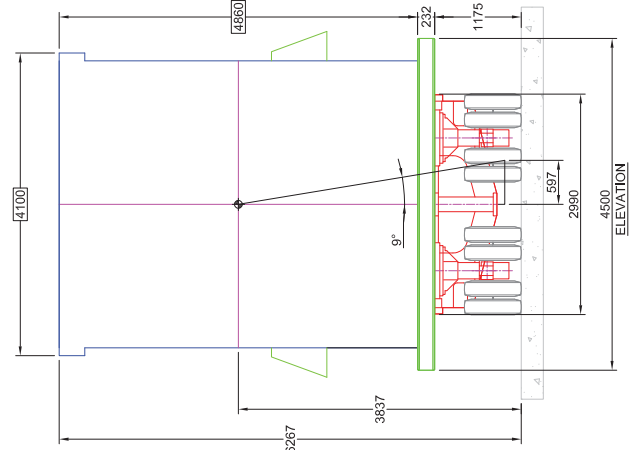
ALE
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 Tel: +44 (0) 1889 274 750
 Fax: +44 (0) 1889 274 750
 Web: www.aile-heavylift.com

Project Title: NORTH SOUTH INTERCONNECTOR SURVEY

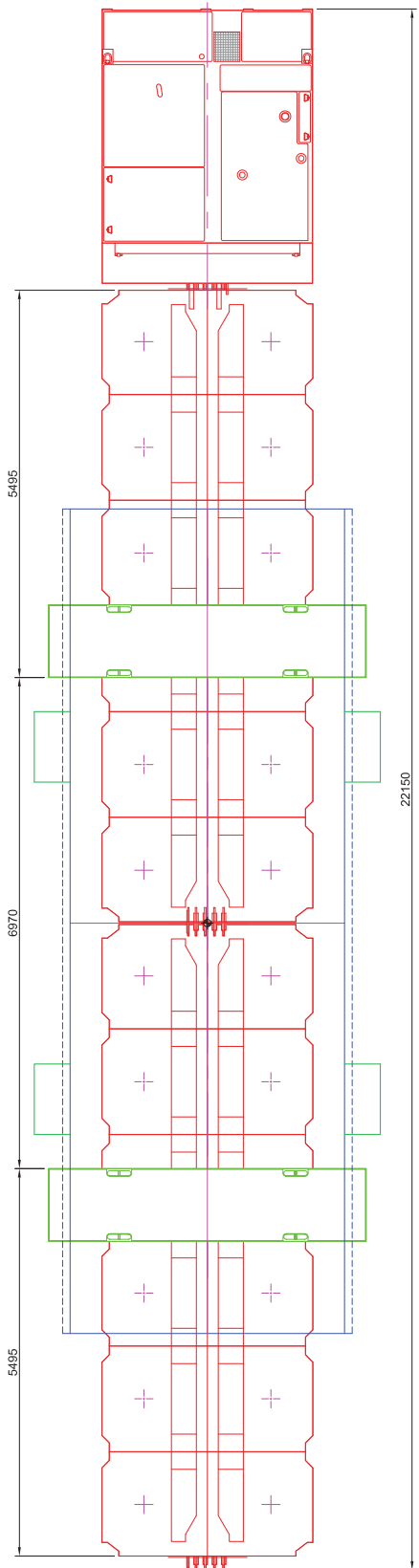
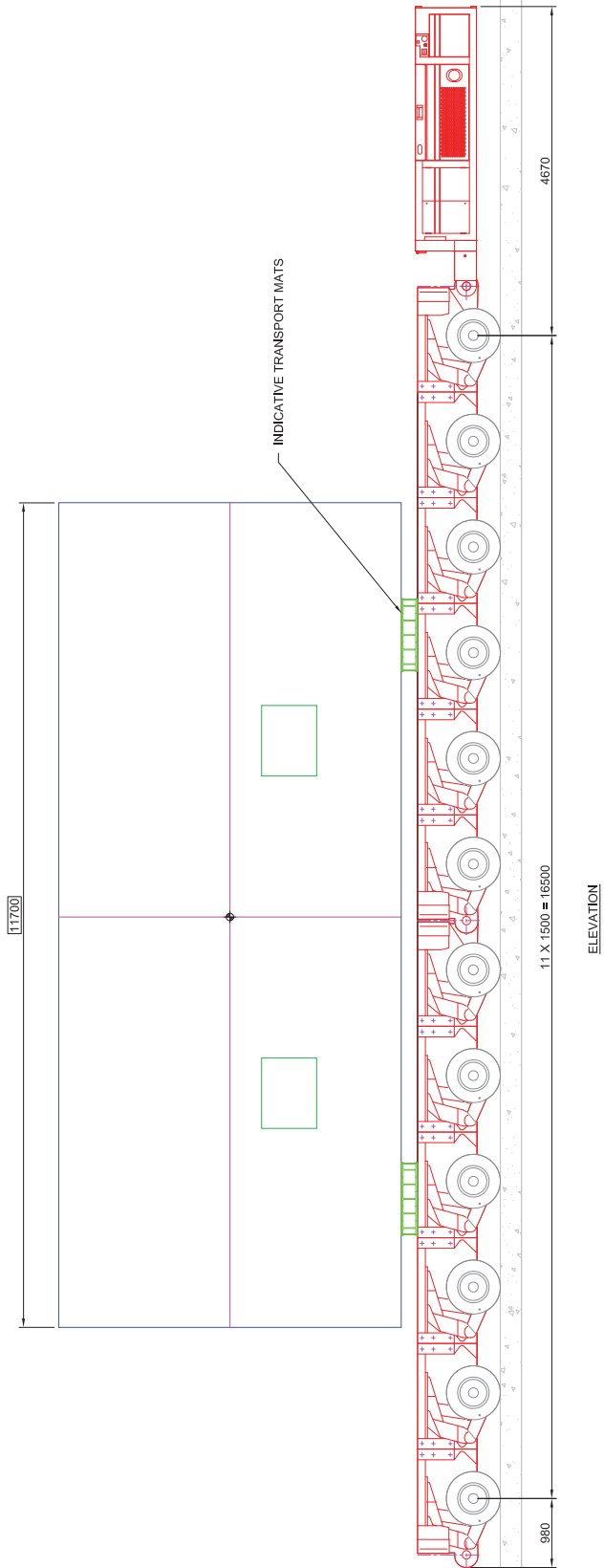
Drawing Title: TRANSPORT ARRANGEMENT FOR 222t TRANSFORMER (ALU) (2014)

Project File: NORTH SOUTH INTERCONNECTOR SURVEY

File Location: P:\Job Files\13000\13186 - NIE - North South Interconnector Survey\Engineering Drawings\13186-001 - Transport Arrangement AL100 2D Axles.dwg



STABILITY TRIANGLE



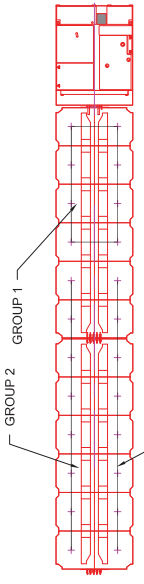
PLAN VIEW

INDICATIVE TRANSPORT MATS

DRAWING NOTES:
 -ALL DIMENSIONS ARE IN mm UNLESS OTHERWISE STATED.
 -ALL WEIGHTS ARE IN (METRIC TONNES) UNLESS OTHERWISE STATED.
 -ALL DETAILS ARE PROVISIONAL AND ARE SUBJECT TO CONFIRMATION.
 -ORIENTATION TO BE CONFIRMED

TECHNICAL NOTES:

- WEIGHT, COG AND SHIPPING DIMENSIONS TAKEN FROM 500MW Transformer weights GA XDE294520-DBH RECEIVED 1/04/14
- TRANSVERSE OPERATIONAL LIMIT $\pm 81\text{mm}$
- LONGITUDINAL OPERATIONAL LIMIT $\pm 300\text{mm}$



TRAILER SPECIFICATION			
12 ROW GH SPT			
all weights in (metric tonnes)	Total	Group 1	Group 2
NUMBER OF AXLE LINES	12	4	8
NUMBER OF FILES	2	2	1
LOAD DETAILS			
PAY LOAD	222	74.0	74.0
TRANSPORTER WEIGHT	40.0	13.3	13.3
ENGINE WEIGHT	7.0	-1.0	-1.0
AUXILIARY STEEL WEIGHT	4.0	1.3	1.3
TOTAL LOAD	273.0	95.6	87.6
LOAD PER AXLE LINE / TRAILER		23.9	10.95
LOAD PER FILE		11.95	10.95
LOAD PER WHEEL		2.99	2.74
GROUND BEARING PRESSURE mm^2		5.33	4.88



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Client: AECOM / NE

Project Title: NORTH SOUTH INTERCONNECTOR SURVEY

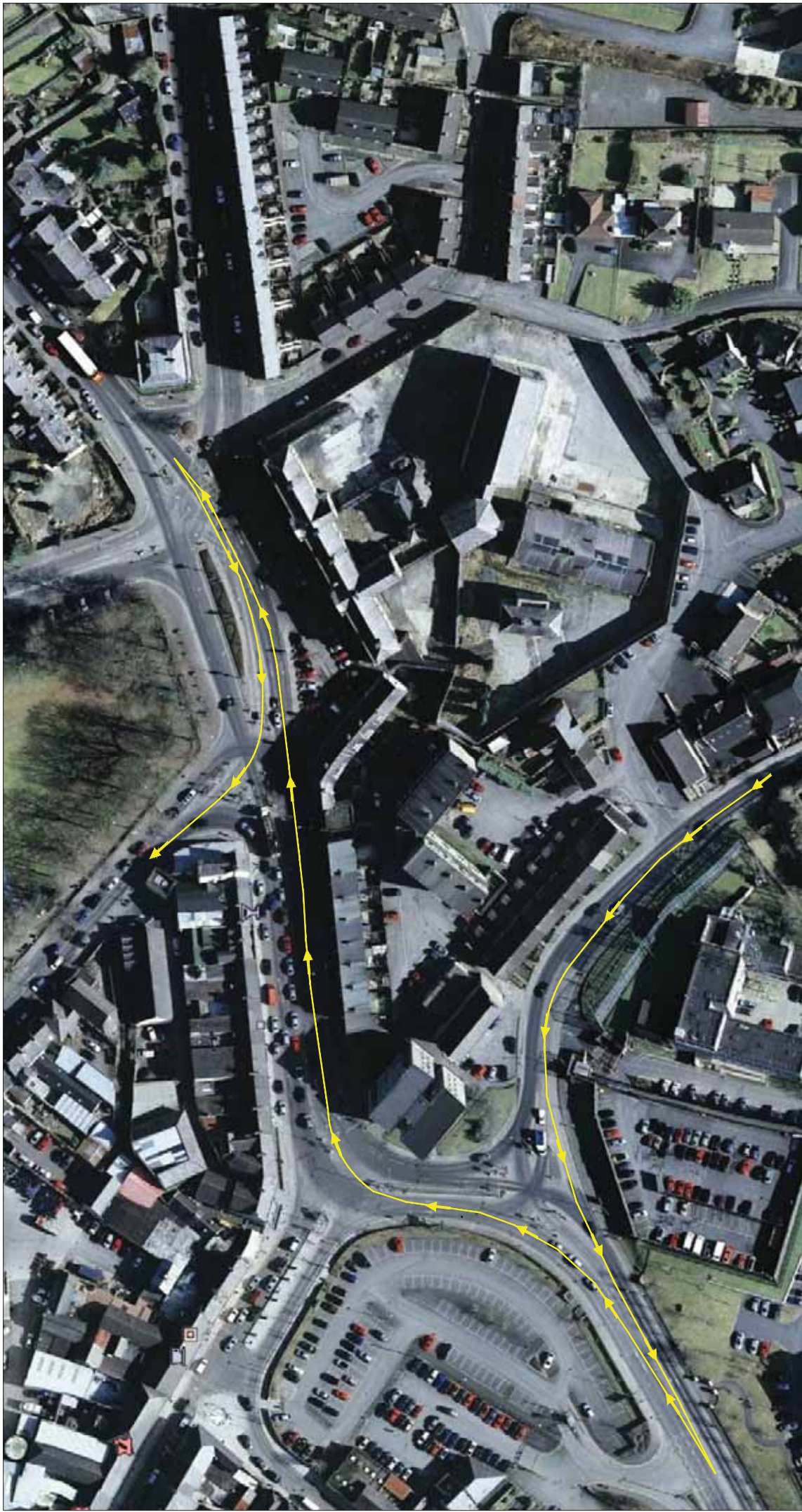
Drawing Title: TRANSFORMER ARRANGEMENT FOR 222T TRANSFORMER ON 12 ROW GOLDHOVER SPT

Date: 15/05/14
 Drawn: GRE
 Checked: RJ
 Scale: (A1)
 Sheet: N1.5
 of 1

Project No.: 13186
 Drawing No.: 13186-004

Rev.: 0

APPENDIX C



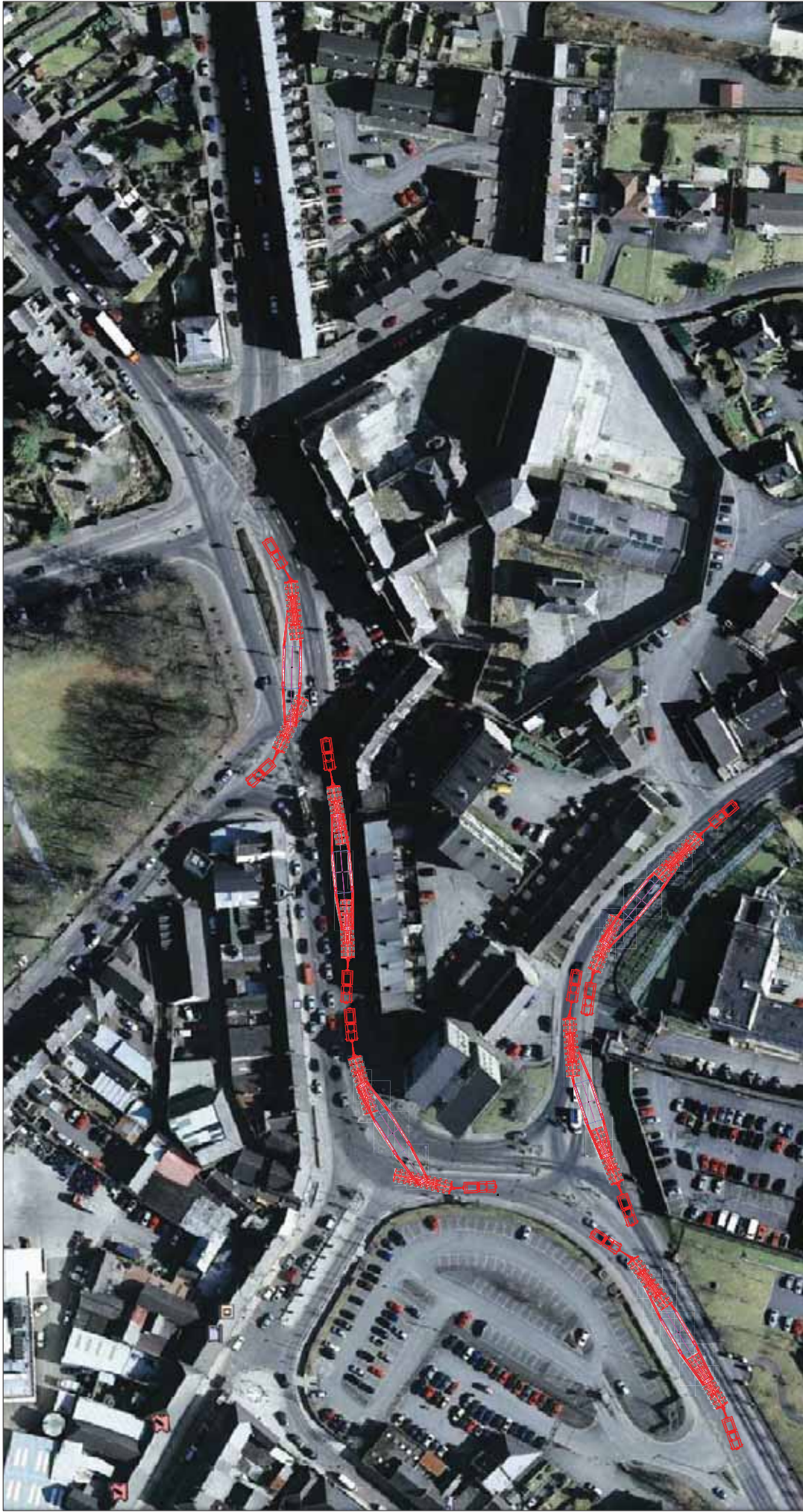
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- ORIENTATION TO BE CONFIRMED

TECHNICAL NOTES:

- KEY :-
- APPROX. TRANSPORT ROUTE SWEEP BY AL-100 20 AXLE TRAILER

DO NOT SCALE	IF IN DOUBT ASK	The content of this drawing is confidential and must not be disclosed without the written permission of ALE.	File Location: P:\Job Files\13000+13186 - NIE - North South Interconnector Survey\Engineering\Drawings\13186-002-0_Armagh Sweep_path.dwg		
<p>Client: AECOM / NIE</p> <p>Project Title: NORTH SOUTH INTERCONNECTOR SURVEY</p> <p>Drawing Title: ROUTE LAYOUT A28/A3 FRIARY ROAD AND BARRACK ST. ARMAGH</p> <p>Date: 16/05/14 Drawn: SH Checked: GRE Scale: (A1) Sheet: 1 of 2</p> <p>Project No.: 13186 Drawing No.: 13186-002 Rev.: 0</p>					
Rev.	Date	Drawn	Checked	DESCRIPTION	ISSUED FOR INFORMATION
0	16/05/14	SH	GRE	OF19 (Issue 5)	
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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.
- ORIENTATION TO BE CONFIRMED

TECHNICAL NOTES:

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File Location: P:\Job Files\13000\13186 - NE - North South Interconnector Survey\Engineering\Drawings\13186-002-0_Arnhem Sweep_path.dwg

Rev.	Date	Drawn	Check	Description	ISSUED FOR INFORMATION
0	15/05/14	SH	GRE		OFF19 (Issue 0)

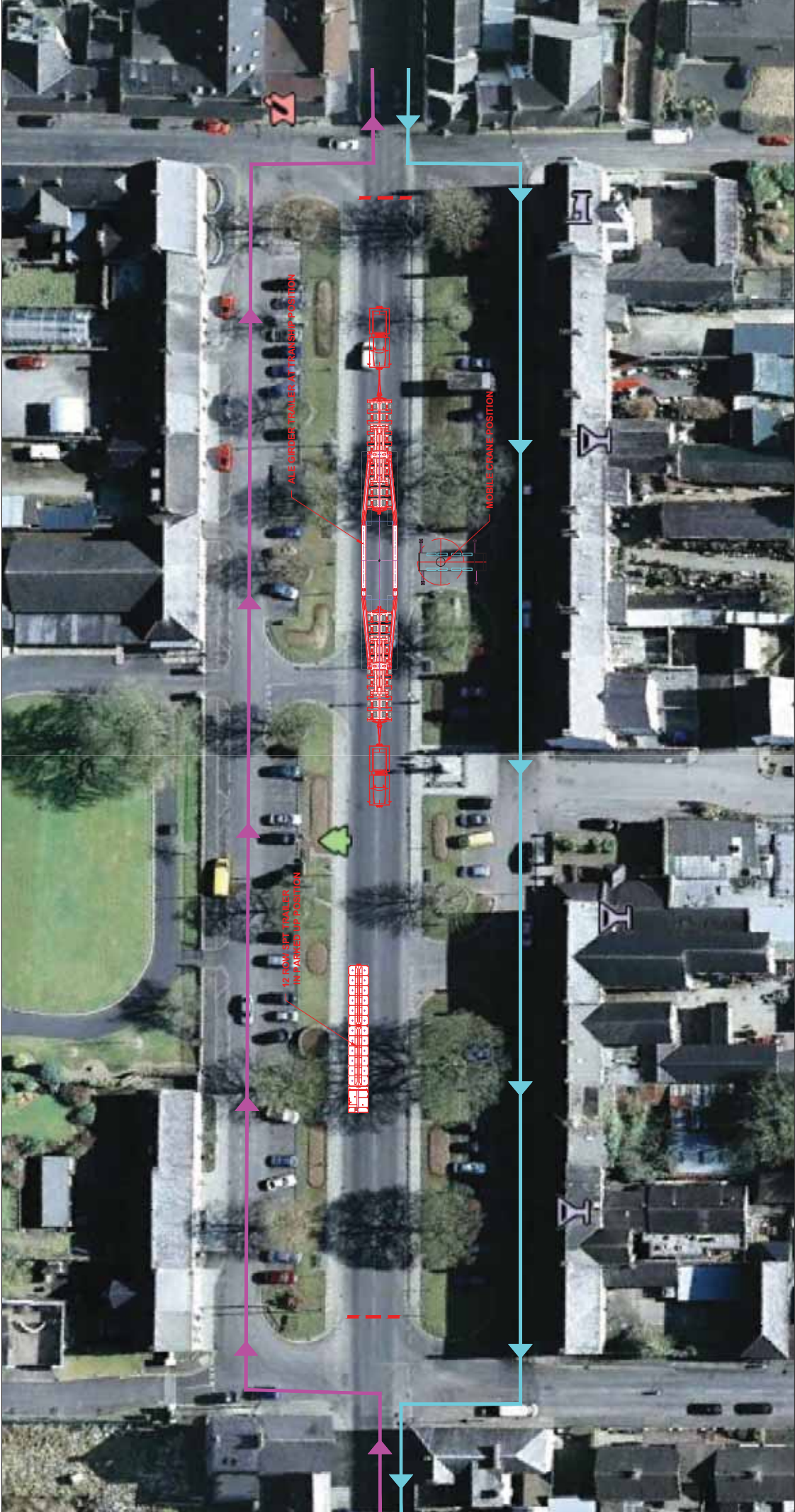

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Client: AECOM / NE

Project Title: NORTH SOUTH INTERCONNECTOR SURVEY

Drawing Title: SWEEP PATH LAYOUT
 A201/AS FERRY ROAD AND BARRACK ST, ARMACH

Drawn	15/05/14	Drawn	SH	Checked	GRE	Scale	1:1	Sheet	2 of 2
Project No.	13186	Drawing No.	13186-002	Rev.	0				



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- ORIENTATION TO BE CONFIRMED

TECHNICAL NOTES:

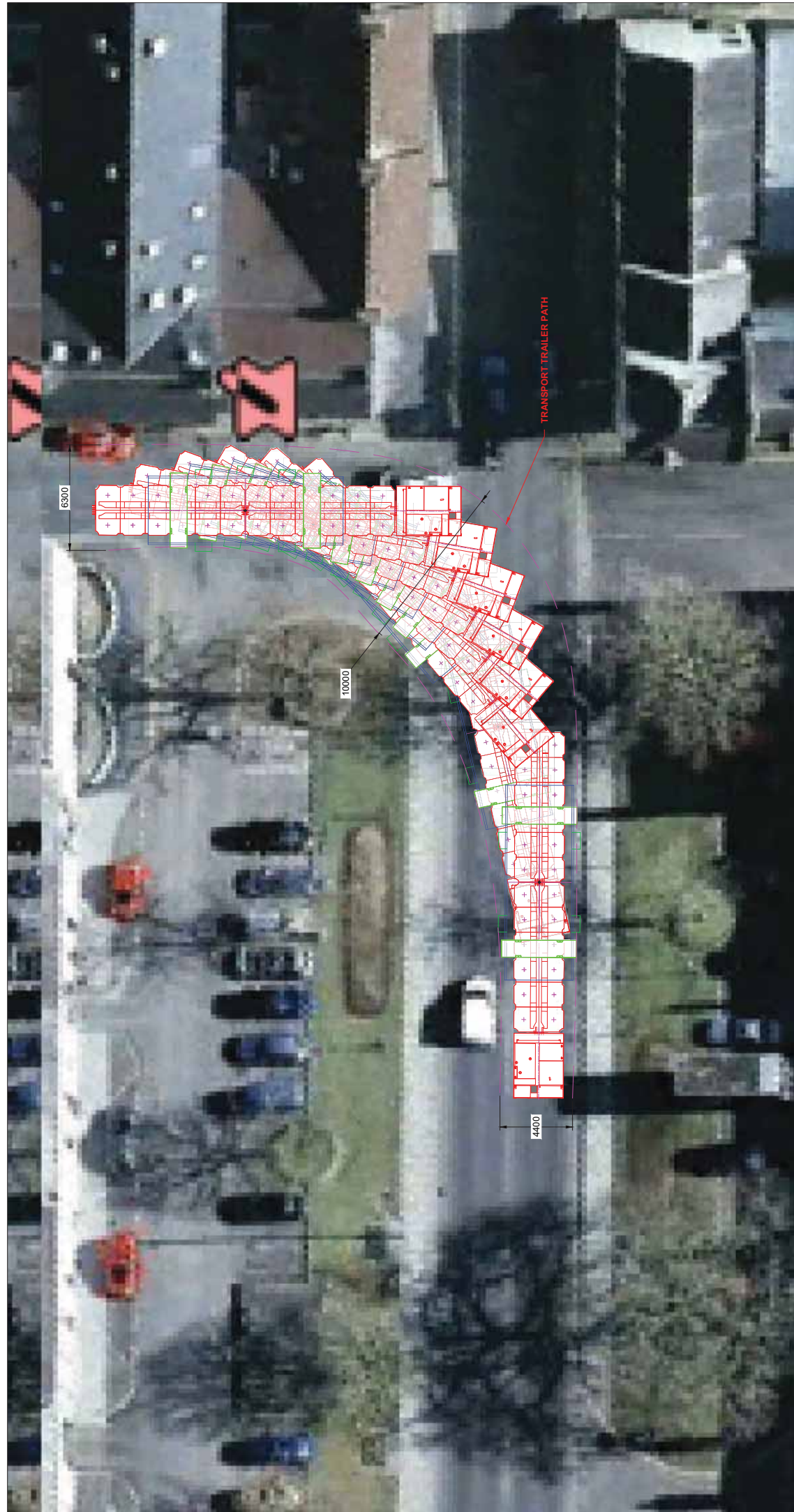
- KEY :-**
- DIVERSION ROUTE FOR EASTBOUND TRAFFIC
 - DIVERSION ROUTE FOR WESTBOUND TRAFFIC
 - ROAD CLOSURE EXTENTS

File Location: P:\Job Files\3000\13186 - NIE - North South Interconnector Survey\Engineering\Drawings\13186-003-0 Tranship.dwg

Rev.	Date	Drawn	Checked	SW	ISSUED FOR INFORMATION
0	15/05/14	GRE	Drawn	SW	QF19 (Issue 5)

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Client: AECOM / NIE
 Project Title: NORTH SOUTH INTERCONNECTOR SURVEY
 Drawing Title: A29 HILLVIEW TERRACE, MOY TRANSHIPMENT LAYOUT
 Date: 15/05/14
 Drawn: GRE
 Checked: SW
 Scale (A1): N.T.S.
 Sheet: 1 of 2
 Project No.: 13186
 Drawing No.: 13186-003
 Rev.: 0



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TECHNICAL NOTES:

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Rev.	Date	Drawn	Check	SW	ISSUED FOR INFORMATION	GF19 (Issue 9)
0	15/05/14	GRE				
<p>ALE AECOM / NIE</p> <p>Abnormal Load Engineering Ltd 10000 Tel: +44 (0) 1888 272 500 Fax: +44 (0) 1888 271 750 Web: www.ale-heavylift.com</p>						
Client: AECOM / NIE						
Project Title: NORTH SOUTH INTERCONNECTOR SURVEY						
Drawing Title: A29 HILLVIEW TERRACE MOY SWEPT PATH DRAWING						
Date:	15/05/14	Drawn:	GRE	Checked by:	GRE	Scale (A1):
Project No.:	13186	Drawing No.:	13186-003	Sheet:	2 of 2	Rev:
						0