Appendix 14B

Abnormal Loads Report

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Abnormal Load Review – Power Plant Area

Proposed Derrygreenagh Power Project

Bord na Mona

Project number: 60699676

January 2024

Delivering a better world

Quality information

Prepared by	Checked by	Verified by	Approved by
Philip Murray Senior Technician	Kim Burgess Senior Consultant	Simon Tomlinson Principal Engineer	Emma Greenlees Associate Director

Revision History

Revision	Revision date	Details	Authorized	Name	Position
0	19.10.2023	Internal Draft	EG	Emma Greenlees	Associate Director
1	25.10.2023	Final	EG	Emma Greenlees	Associate Director
2	12.01.2024	Final	EG	Emma Greenlees	Associate Director
3	17.01.2024	Final	EG	Emma Greenlees	Associate Director

Distribution List

# Hard Copies	PDF Required	Association / Company Name

Prepared for:

Bord na Mona

Prepared by:

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9th Floor, The Clarence West Building
2 Clarence Street West
Belfast BT2 7GP
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Table of Contents

1. Introduction

The site on which the Proposed Development will be located is in the townlands of Derrygreenagh, Derryarkin, Derryiron, Ballybeg, Barrysbrook, Togher and Coole. The Power Plant Area (not including all of the process water discharge pipeline) will be largely located on the site of existing Derrygreenagh Works east of the R400 road.

The proposal involves the development of a Combined Cycle Gas Turbine (CCGT) unit and an Open Cycle Gas Turbine (OCGT) unit, electricity grid connection including substations and associated buildings and infrastructure ('the Proposed Development') on predominantly Bord na Móna land in County Offaly.

To facilitate construction works it is proposed that abnormal loads will require delivery from a port to the development site. The abnormal load movements required for the Power Plant Area of the site will be associated with the delivery of the following:

- Gas Turbines Circa 350 tonnes;
- Generator 400 tonnes
- Steam turbine modules
- OCGT module
- Transformer Block; and
- HRSG modules.

Their transport routes will form the basis of the report.

2. Haulage Route for Abnormal Load

Based on the location of proposed development at Derrygreenagh, the proposed route for the delivery of any abnormal loads is to be via Dublin Port.

It is proposed that all abnormal loads will travel to the site via the M4/M6 and exit via Junction 3 before travelling south on R400 Regional road towards the site. All vehicles will then make a left turn into the site access.

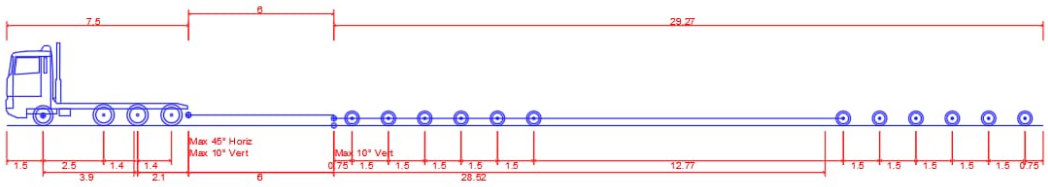
3. Assessment of Route

1.1 Vehicle Assessed

Several locations within the local network surrounding the development site have been identified for further analysis based upon the vector base mapping, aerial imagery and Topographical Surveys provided.

A model within the propriety software produced by AutoDESK was used to assess the swept path of the vehicle.

The tracking analysis is based upon the vehicle shown in the image below which has several standard axles and is designed to a specific weight identified for the required purpose.



Transformer	
Overall Length	42.770m
Overall Width	3.000m
Overall Body Height	3.398m
Min Body Ground Clearance	0.295m
Max Track Width	2.479m
Lock to lock time	6.00s
Kerb to Kerb Turning Radius	6.790m

1.2 Locations Assessed

The locations identified for analysis are listed below for the proposed route:

1. Exit M6 at Junction 3 Southbound on the R400
2. Power Plant Area Access located on the R400 – Existing Layout
3. Power Plant Area Access located on the R400 – Proposed Layout

It is reiterated that the contractor will assess the full route once appointed. This assessment only considers access to the site and the surrounding local road network.

All tracking is shown in **Appendix A.**

1.3 Summary of Outcomes

1. **M6, Junction 3 –** As shown in **Appendix A**, when exiting and travelling onto the M6, the vehicle can manoeuvre without issue on the current road network. Therefore, no road upgrades will be required.
2. **Existing Power Plant Area Access –** As shown in **Appendix A**, the vehicle overruns land on the southern side of R400 when turning in/ out of the site access. Street furniture, including the existing hedge/fence will therefore need to be moved to allow for vehicle movement.
3. **Proposed Power Plant Area Access –** As shown in **Appendix A**, there is minor overrun at the side of the site access.

It is reiterated that the contractor will assess the full route at a later date. All mitigation and traffic management measures will be fully detailed and agreed with the local authorities, prior to undertaking the abnormal load deliveries.

4. Traffic Management Plan

The Construction Traffic Management Plan (CTMP) submitted in support of this application will be updated by the appointed contractor in accordance with the requirements of OCC, WCC, local authorities and other relevant stakeholders if required for the delivery of abnormal loads. All relevant councils and local authorities are required to be notified ahead of any abnormal load movements.

The CTMP will contain details of the delivery of abnormal loads to the site including:

- Details of the haulage route including identification of any points along the access route that require engineering works e.g., the temporary removal and reinstatement of street furniture.
- Delivery timings - Sunday would be the preferable day for delivery subject to agreement with OCC/WCC and local authorities.
- Signage and escort requirements; and
- Any additional measures to minimise the impacts from traffic i.e., road sweeping and wheel cleaning/washing.

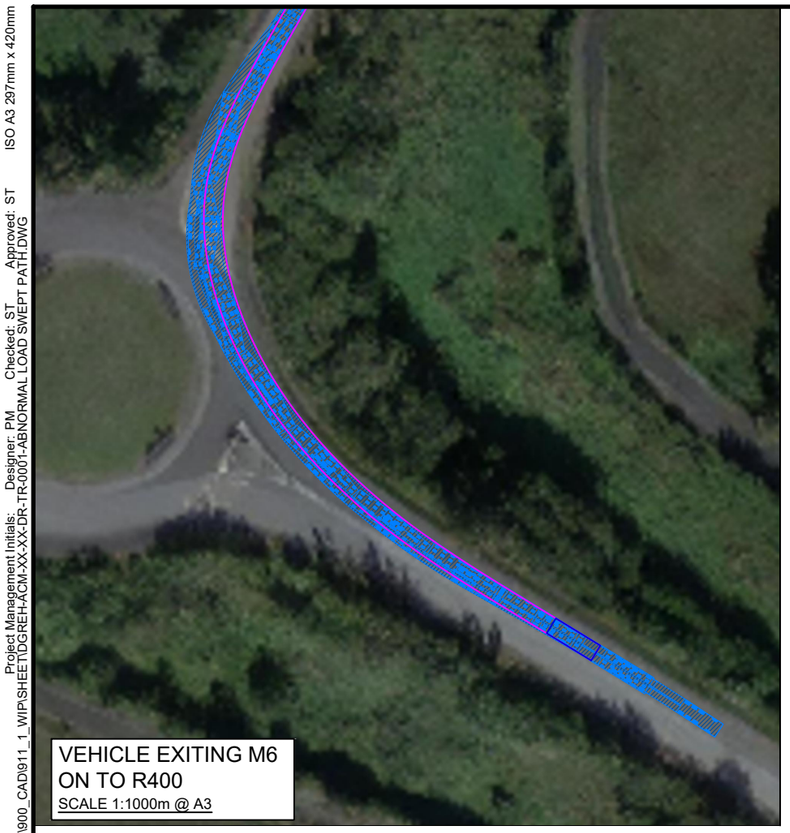
From the initial desktop and swept path on OS base review of the routes, it is not considered that any planning permission for works outside of the highway boundary will be required prior to commencing transportation.

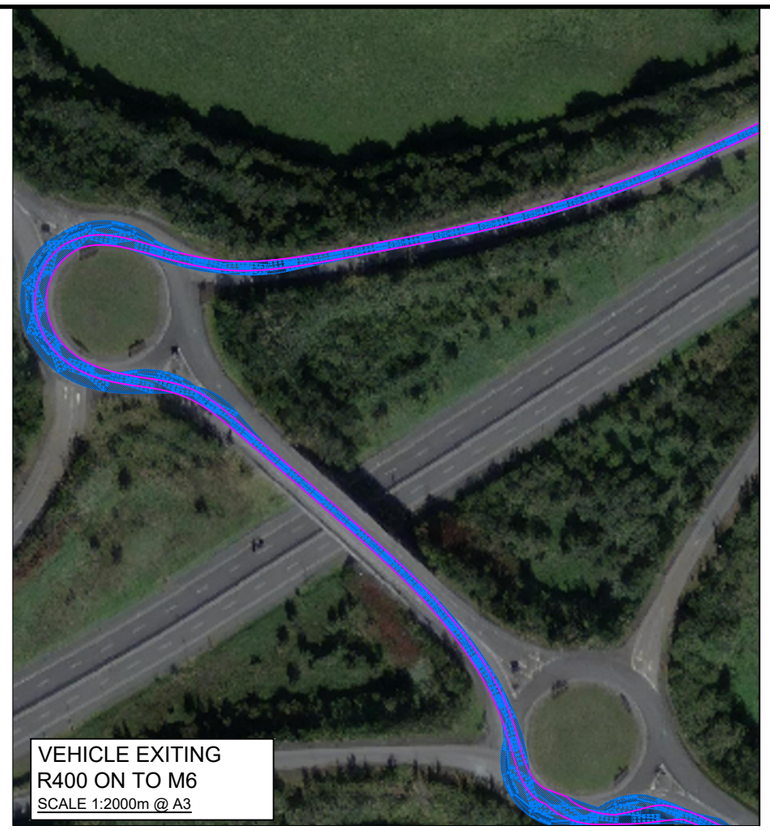
5. Conclusion

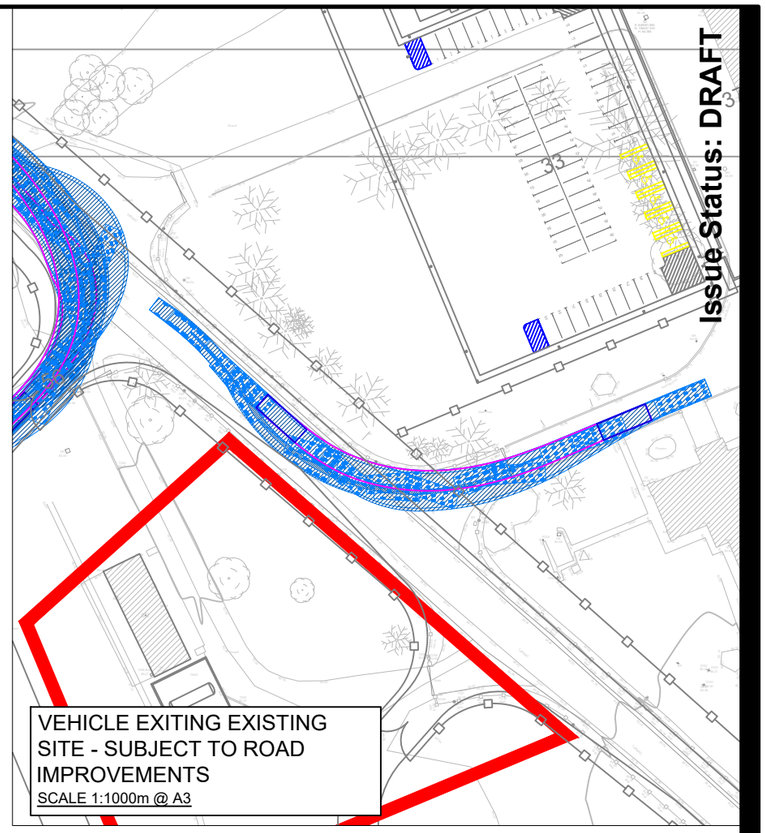
Based on this assessment, it was shown the abnormal load deliveries into the site result in slight overrun of the site access, both in its existing and proposed forms. Therefore, traffic management and possible street furniture/ fencing movement may be required. No issues are expected with regards to vehicle movement at M6, Junction 3.

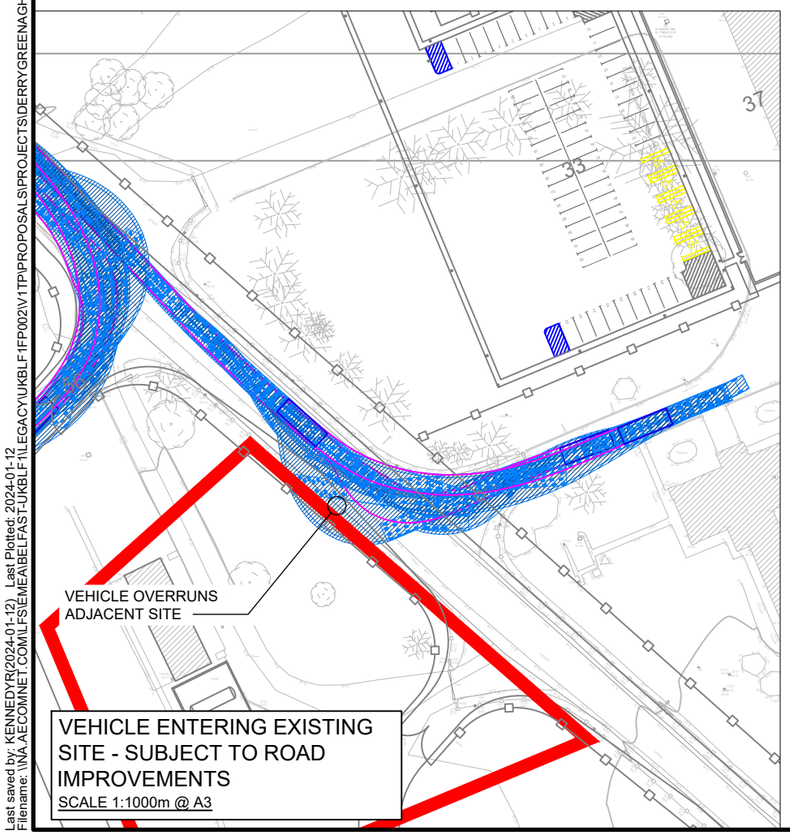
Upon approval of the scheme, this report along with relevant information would be supplied to the specialist transportation company employed to provide any additional information to gain the legal requirements from OCC/WCC and local authorities for transportation of these loads. The full route will also be assessed to the port.

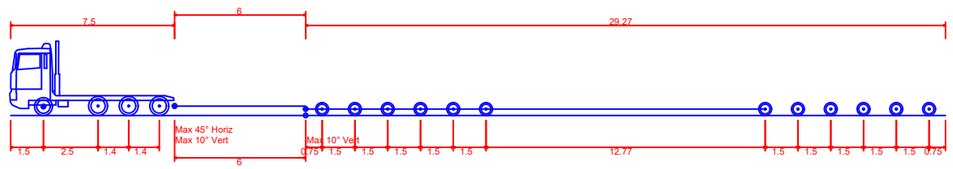
Appendix A – Tracking Drawings











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NOTE: SWEPT PATH ANALYSIS HAS BEEN CARRIED OUT ON A COMBINATION OF AERIAL MAPPING, VECTOR BASE MAPPING AND TOPOGRAPHICAL SURVEY

Issue Status: DRAFT

AECOM

Appendix: A

ABNORMAL LOAD SWEPT PATH ANALYSIS

DERRYGREENAGH POWER STATION

Bord na Mona
Project No.: 60699676 Date: 2024-01-10

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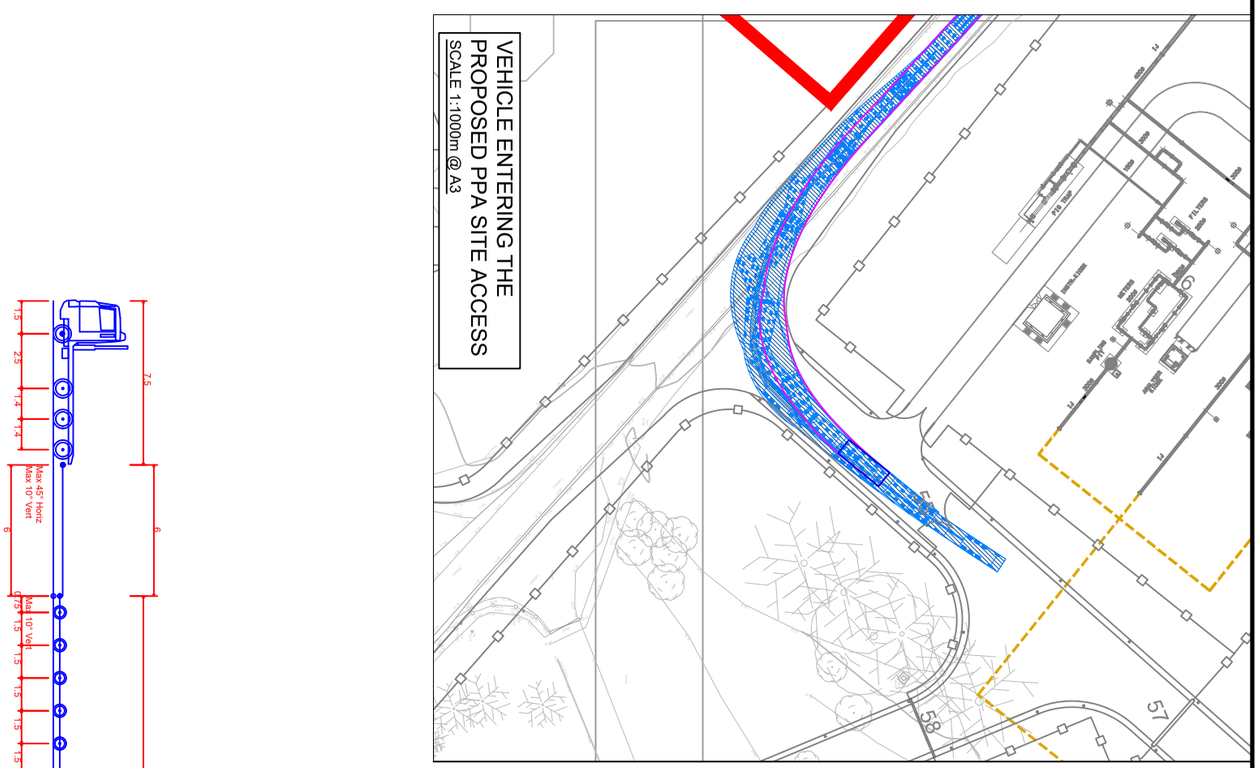

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Issue Status: DRAFT

DERRYGREENAGH POWER STATION

Bord na Mona
Project No.: 60699676 Date: 2024-01-10

ABNORMAL LOAD
SWEPT PATH ANALYSIS

AECOM

Appendix: A

Abnormal Load Review – Electric Grid Connection

Proposed Derrygreenagh Power Project

Bord na Mona

Project number: 60699676

January 2024

Delivering a better world

Quality information

Prepared by	Checked by	Verified by	Approved by
Philip Murray Senior Technician	Kim Burgess Senior Consultant	Simon Tomlinson Principal Engineer	Emma Greenlees Associate Director

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The proposals involve the development of a Combined Cycle Gas Turbine (CCGT) unit and an Open Cycle Gas Turbine (OCGT) unit, Electricity Grid Connection including substations and associated buildings and infrastructure ('the Proposed Development') predominantly on Bord na Móna lands in County Offaly.

To facilitate construction works it is proposed that abnormal loads will require delivery from a port to the development site. The abnormal load movements required for the Electricity Grid Connection of the site will be associated with the delivery of the following:

- 2 no. Transformers.

2. Haulage Route for Abnormal Load

Based on the location of Proposed Development at Derrygreenagh, the proposed route for the delivery of any abnormal loads is to be via Dublin Port.

It is proposed that all abnormal loads will travel to the site via the M4/M6 and exit via Junction 3 before travelling south on R400 Regional Road. The deliveries will travel to a number of different access points as follows:

- 220kV access – located on R400. All vehicles will turn right into this access.
- 400kV access – located south off L1010 Togher Road. Travel to this access will require turning right at the Coolcor roundabout towards Rhode village. A right turn will then be taken at the Rhode crossroads onto L1010 Togher Road. A further left turn will then be taken on to an unnamed road.
- Grid Connection access – travel to this access point will follow a similar path to the 400kV access, except a right turn will be made off L1010 Togher Road rather than a left turn.

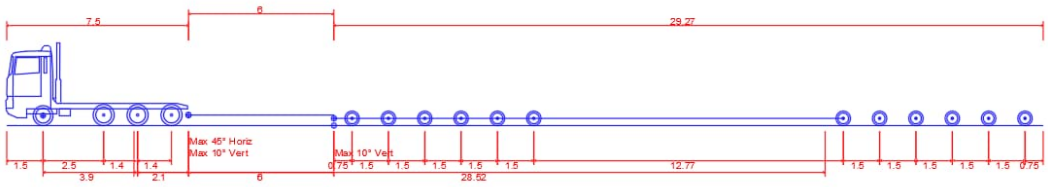
3. Assessment of Route

1.1 Vehicle Assessed

Several locations within the local network surrounding the development site have been identified for further analysis based upon the vector base mapping, aerial imagery and Topographical Surveys provided.

A model within the propriety software produced by AutoDESK was used to assess the swept path of the vehicle.

The tracking analysis is based upon the vehicle shown in the image below which has several standard axles and is designed to a specific weight identified for the required purpose.



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Min Body Ground Clearance	0.295m
Max Track Width	2.479m
Lock to lock time	6.00s
Kerb to Kerb Turning Radius	6.790m

1.2 Locations Assessed

The locations identified for analysis are listed below for the proposed route:

1. Exit M6 at Junction 3 southbound on the R400.
2. Existing 200kV access point.
3. Travel around Coolcor Roundabout
4. Travel through Rhode crossroads
5. Travel along L1010 Togher Road from Rhode to 400kV/Grid connection access points
6. Access into Grid Connection access point
7. Access into 400kV site.
8. Proposed 200kV access point.

All tracking is shown in **Appendix A,** with any over runs being identified on the drawings.

It is reminded that the contractor will assess the full route at a later date.

1.3 Summary of Outcomes

1. **M6, Junction 3 –** As shown in **Appendix A**, when exiting and travelling onto the M6, the vehicle can manoeuvre without issue on the current road network. Therefore, no road upgrades will be required.
2. **Existing 200kV Access –** As shown in **Appendix A**, the vehicle overruns land when turning into the site. Amendments will therefore be required at the site access to enable this movement.
3. **Coolcor Roundabout –** As shown in **Appendix A**, when the vehicle turns right around the roundabout (travel from R400 towards Rhode), there is major overrun of both the roundabout and footway. However, the vehicle can manoeuvre with significantly less overrun by travelling around the roundabout in an anticlockwise direction. Traffic management measures and potential temporary road closures would need to be in place to allow for this movement. The same minor overrun occurs on the return journey however the vehicle will be able to travel in a clockwise direction.

4. **Rhode Crossroads –** As shown in **Appendix A,** the vehicle overruns the footway when travelling to/from L1010 Togher Road. Traffic Management measures will therefore be required to allow for this movement and some street furniture may need moved.

5. Travel along L1010 Togher Road – As shown in **Appendix A**, the vehicle uses the full width of the road and therefore a road closure will be required for this movement.

6. **Grid Connection Access –** As shown in **Appendix A,** access in/out of this access results in slight overrun of the verge at the road edge.

7. **400kV Access –** As shown in **Appendix A**, the vehicle overruns neighbouring land on access/egress from the 400kV access road. This junction will therefore need assessed in further detail by the contractor and land ownership discussions undertaken.

8. **Proposed 200kV access–** As shown in **Appendix A,** this movement results in minor overrun on the R400 on arrival. There is also slight overrun of the gate/fence on departure. This gate/ fence will therefore need moved to allow for delivery.

It is reiterated that the contractor will assess the full route at a later date. All mitigation and traffic management measures will be fully detailed and agreed with the local authorities, prior to undertaking the abnormal load deliveries.

4. Traffic Management Plan

The Construction Traffic Management Plan (CTMP) submitted in support of this application will be updated by the appointed contractor in accordance with the requirements of OCC, WCC, local authorities and other relevant stakeholders if required for the delivery of abnormal loads. All relevant councils and local authorities are required to be notified ahead of any abnormal load movements.

The CTMP will contain details of the delivery of abnormal loads to the site including:

- Details of the haulage route including identification of any points along the access route that require engineering works e.g., the temporary removal and reinstatement of street furniture.
- Delivery timings - Sunday would be the preferable day for delivery subject to agreement with OCC/WCC and local authorities.
- Signage and escort requirements; and
- Any additional measures to minimise the impacts from traffic i.e., road sweeping and wheel cleaning/washing.

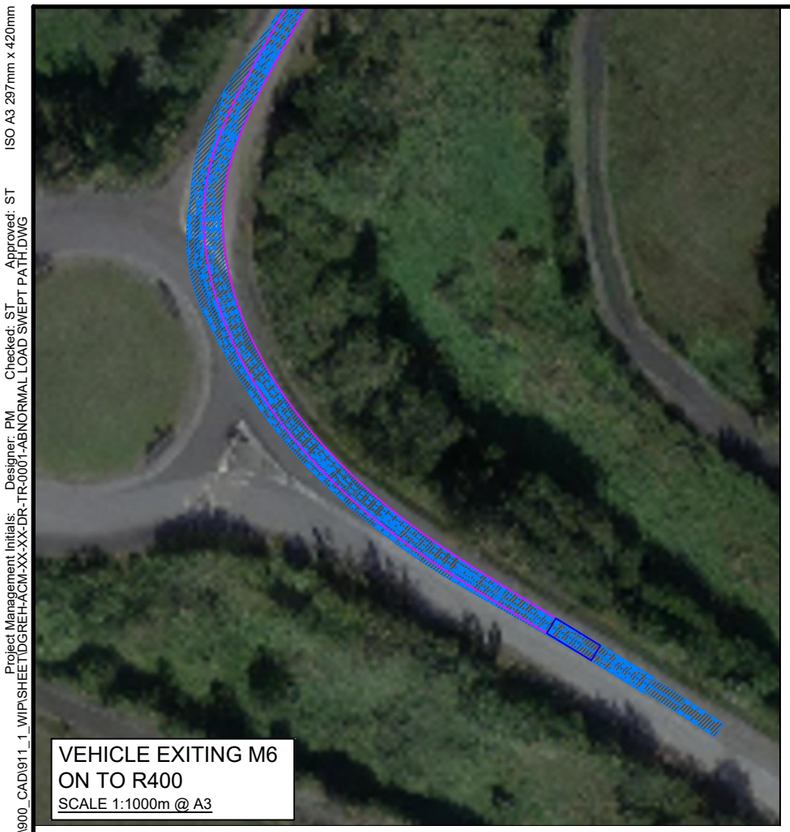
From the initial desktop and swept path on OS base review of the routes, it is not considered that any planning permission for works outside of the highway boundary will be required prior to commencing transportation.

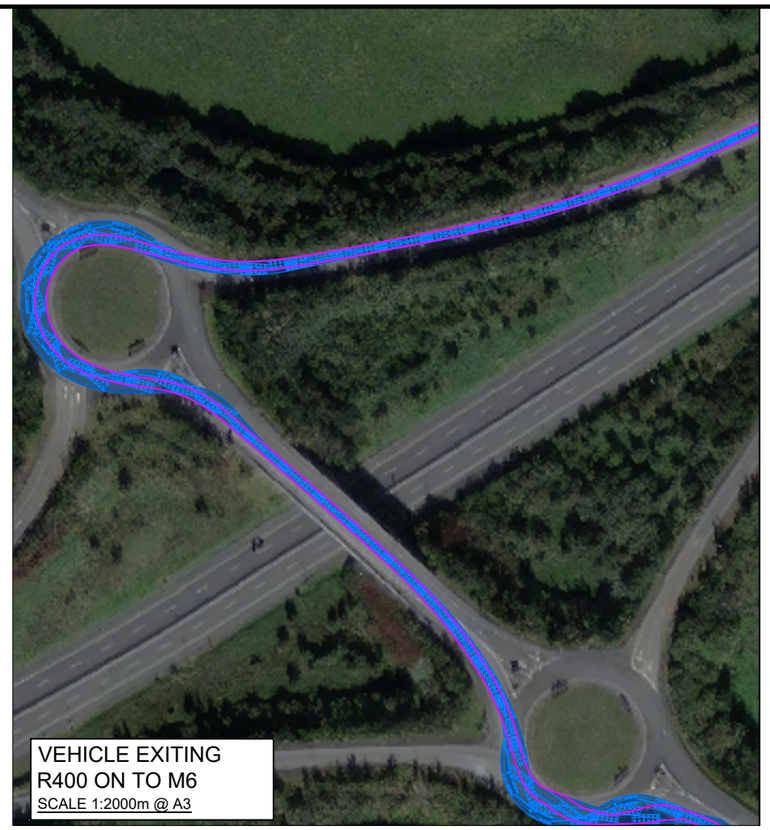
5. Conclusion

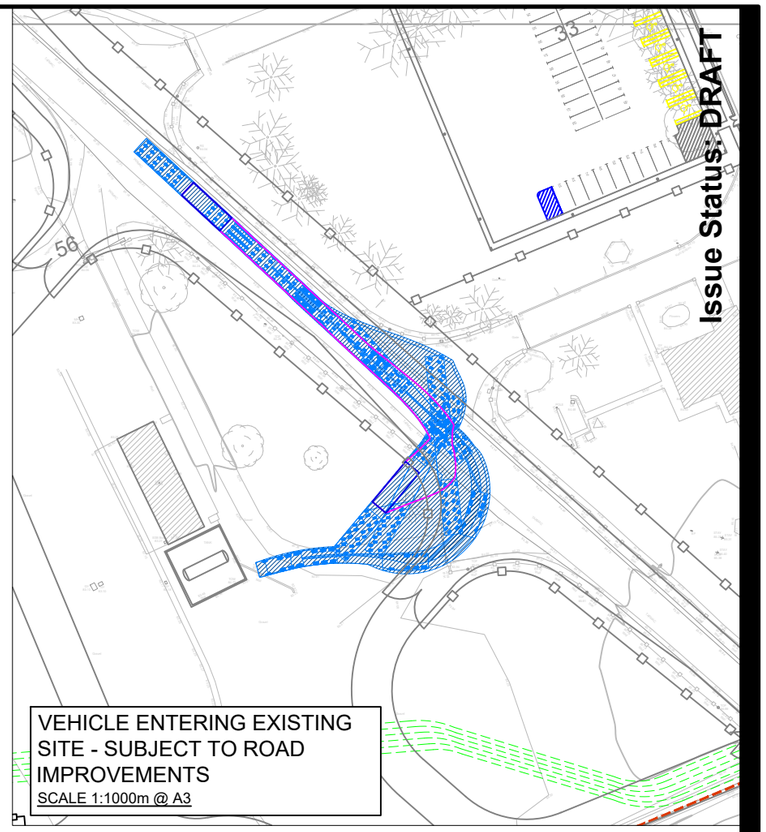
Based on this assessment, it is clear that transport of abnormal loads may result in overrun of other lanes of traffic, footways and private land.

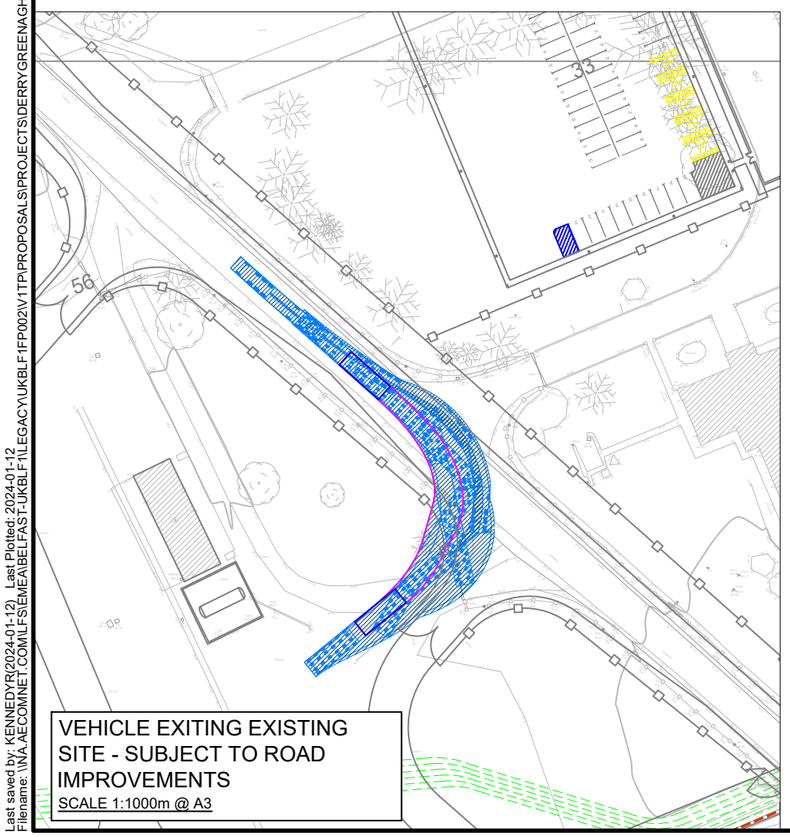
Upon approval of the scheme, this report along with relevant information would be supplied to the specialist transportation company employed to provide any additional information to gain the legal requirements from OCC/WCC and local authorities for transportation of these loads. The contractor will assess the route in full and examine these locations of overrun in further detail to put a plan in place.

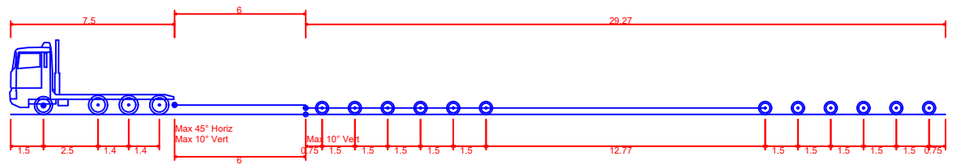
Appendix A - Tracking Drawings











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NOTE: SWEPT PATH ANALYSIS HAS BEEN CARRIED OUT ON A COMBINATION OF AERIAL MAPPING, VECTOR BASE MAPPING AND TOPOGRAPHICAL SURVEY

Issue Status: DRAFT

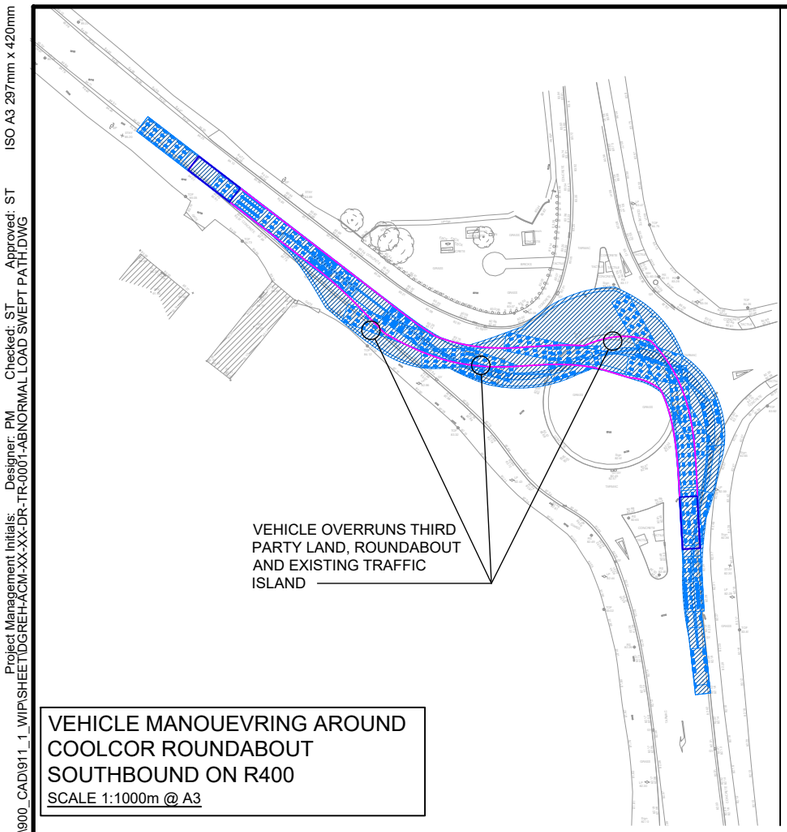
AECOM

Appendix: A

ABNORMAL LOAD SWEPT PATH ANALYSIS

DERRYGREENAGH POWER STATION

Bord na Mona
Project No.: 60699676 Date: 2024-01-10



VEHICLE MANOUEVRING AROUND COOLCOR ROUNDABOUT SOUTHBOUND ON R400
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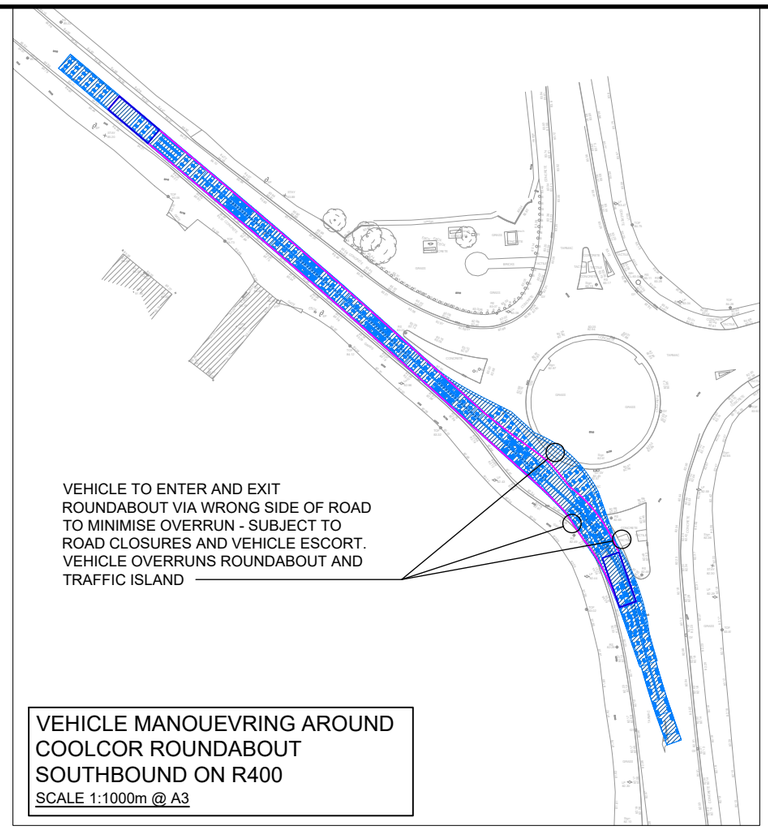

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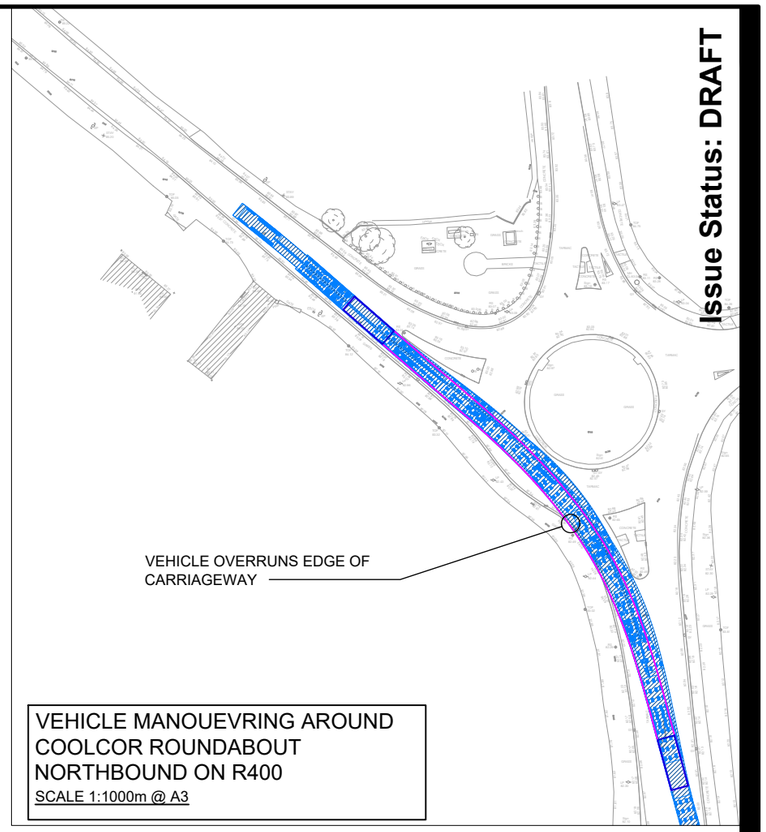

VEHICLE MANOUEVRING AROUND COOLCOR ROUNDABOUT NORTHBOUND ON R400
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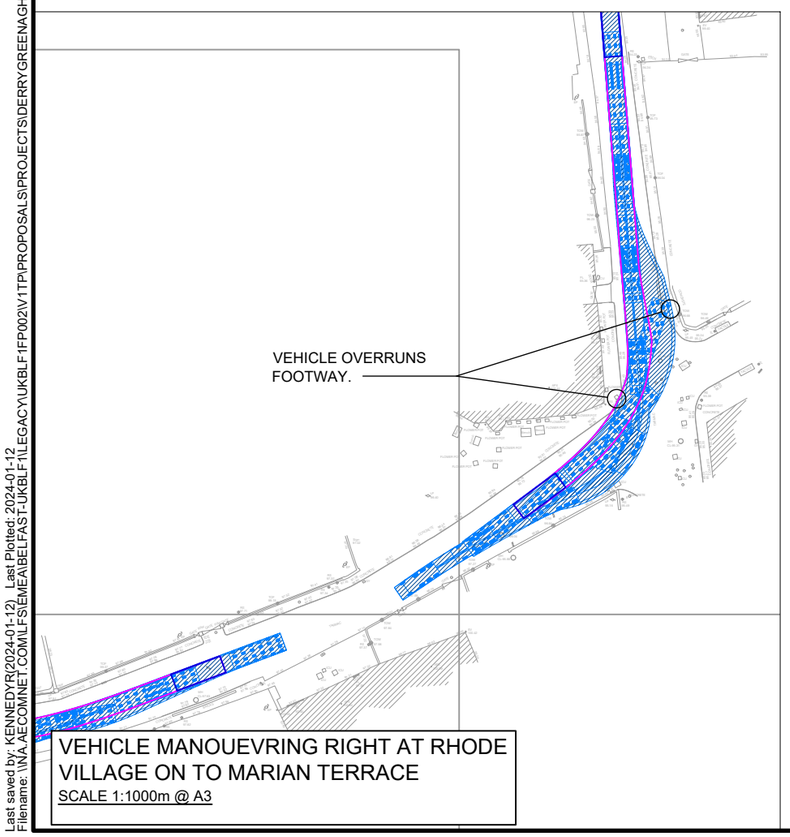

VEHICLE MANOUEVRING RIGHT AT RHODE VILLAGE ON TO MARIAN TERRACE
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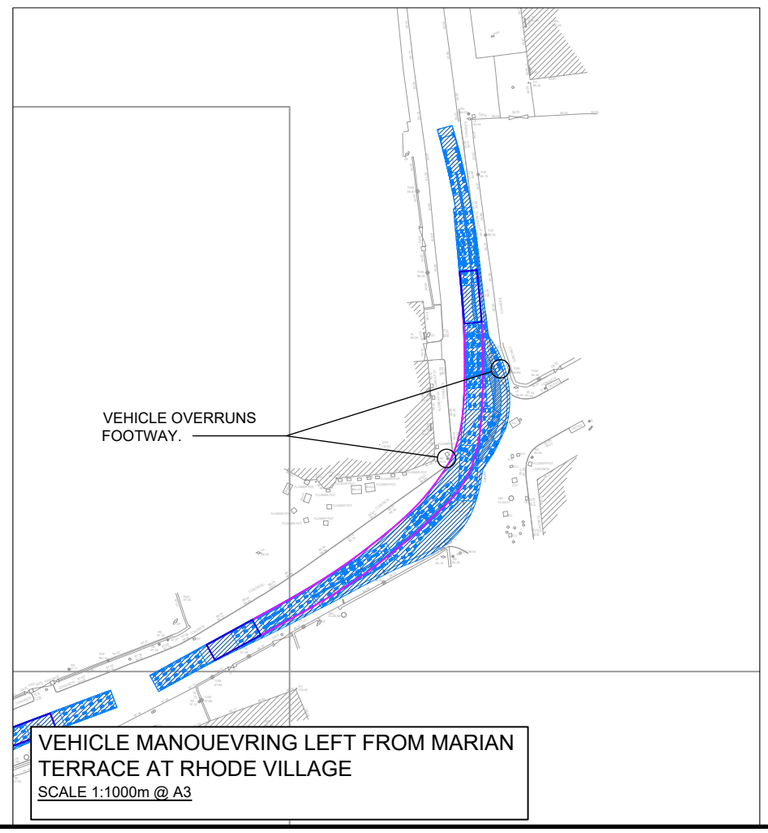

VEHICLE MANOUEVRING LEFT FROM MARIAN TERRACE AT RHODE VILLAGE
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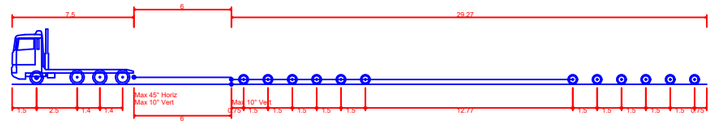

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Appendix: A

ABNORMAL LOAD
SWEPT PATH ANALYSIS

DERRYGREENAGH POWER STATION

Bord na Mona
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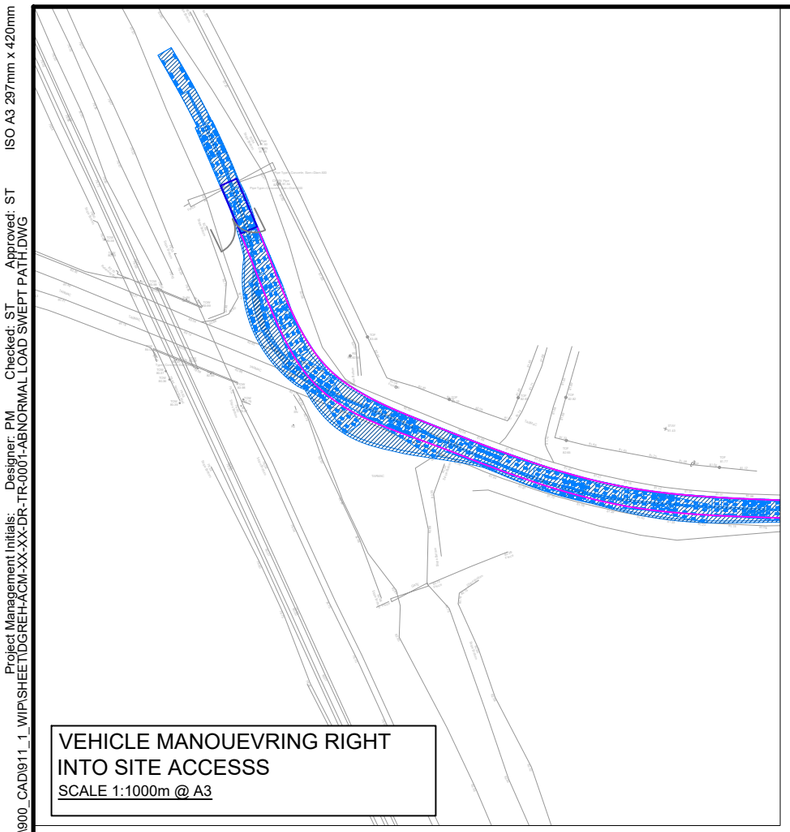

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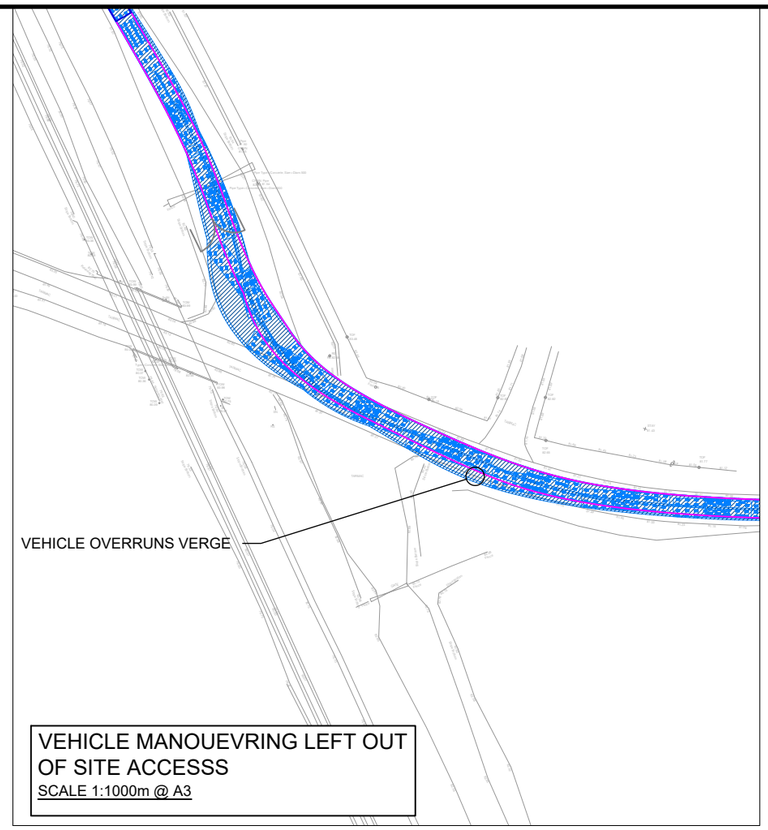

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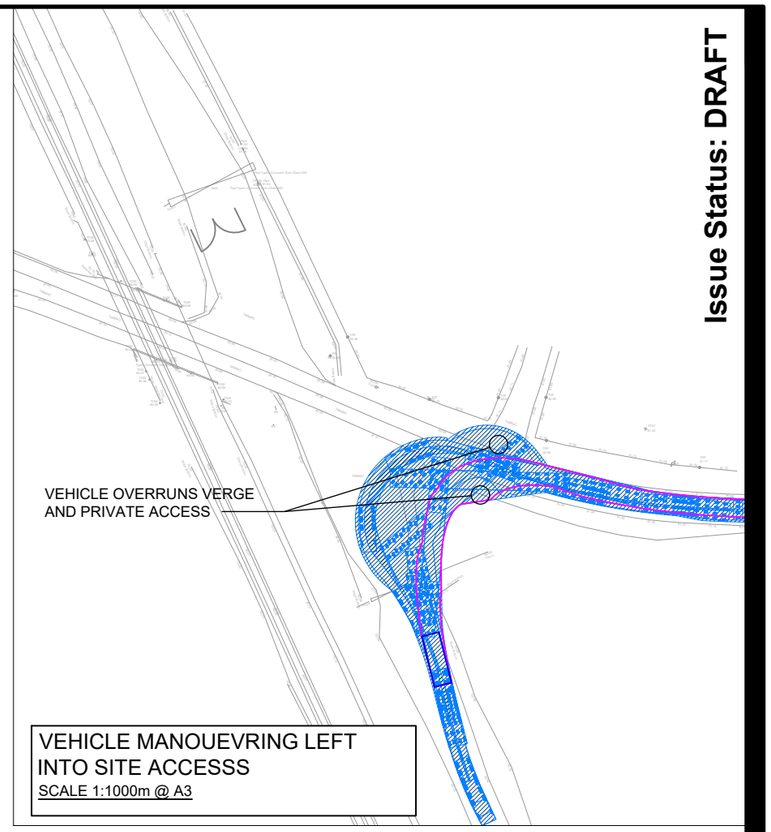

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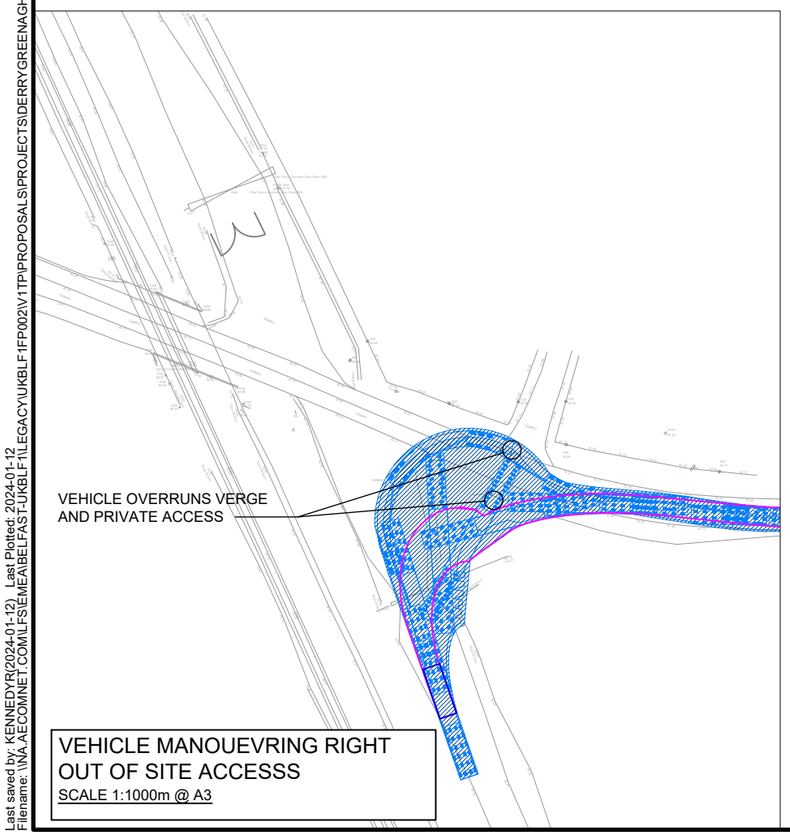

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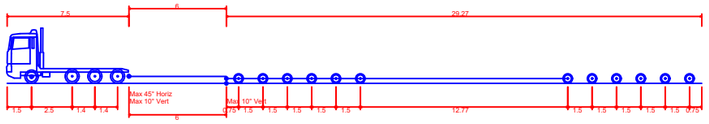

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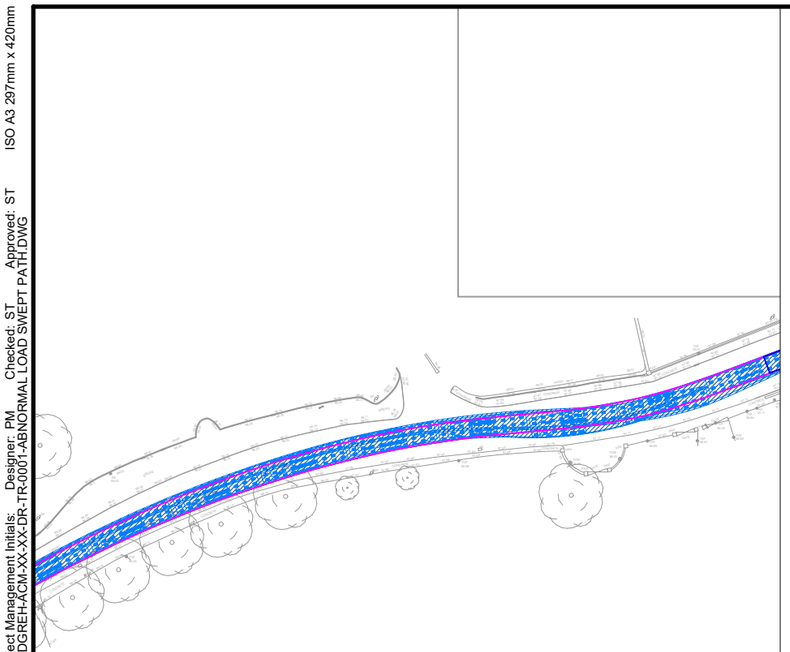
SWEPT PATH ANALYSIS

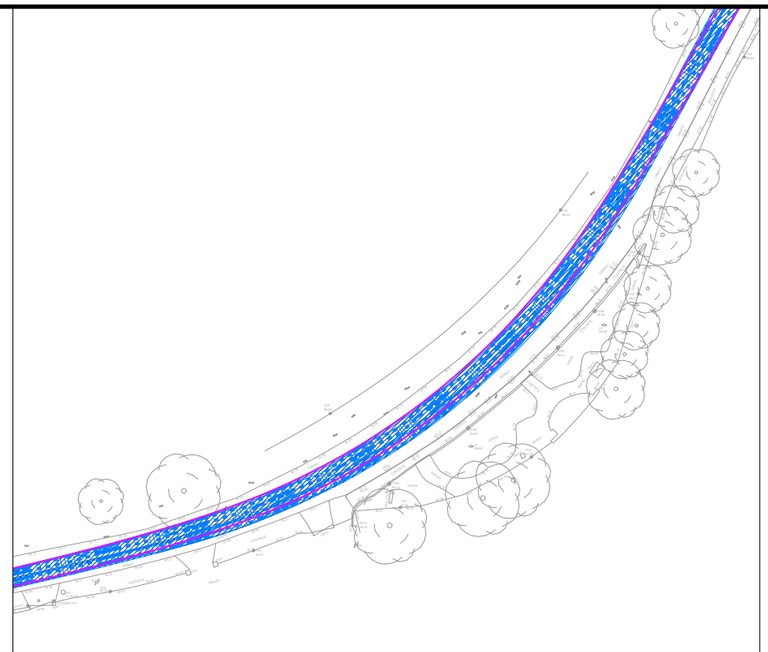
DERRYGREENAGH POWER STATION

Bord na Mona
Project No.: 60699676 Date: 2024-01-10

Project Management Initials: Designer: PM Checked: ST Approved: ST ISO A3 297mm x 420mm
Filename: \\NA.AECOMNET.COM\LFSIEMEA\BELFAST-UKBLF1\LEGACY\UKBLF1\FP002\V1\TP\PROPOSALS\PROJECTS\DERRYGREENAGH CCGT\900_CAD\911_1_WIP\SHEET\DGREH-ACM-XX-XX-DR-TR-0001-ABNORMAL LOAD SWEPT PATH.DWG
Last saved by: KENNEDYR(2024-01-12) Last Plotted: 2024-01-12



VEHICLE TRAVELLING ALONG L1010
SCALE 1:1000m @ A3



VEHICLE TRAVELLING ALONG L1010
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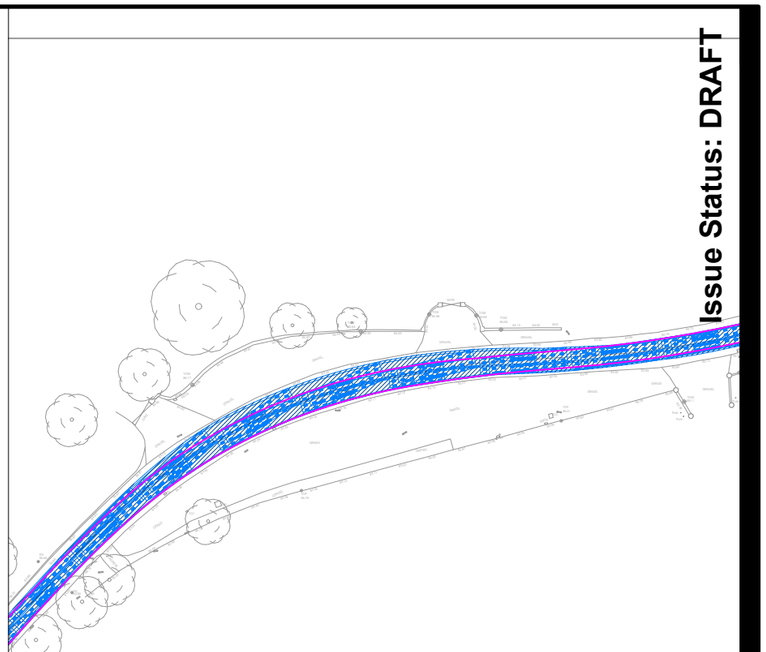

VEHICLE TRAVELLING ALONG L1010
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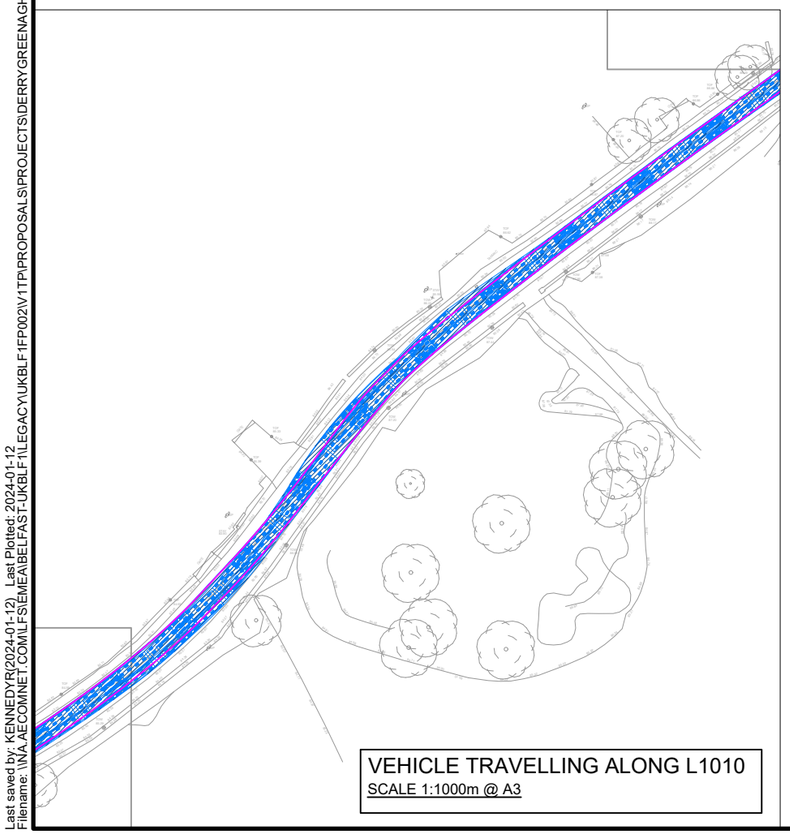

VEHICLE TRAVELLING ALONG L1010
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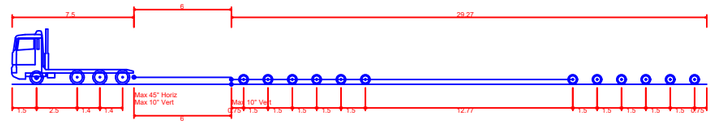

Transformer	
Overall Length	42.770m
Overall Width	3.000m
Overall Body Height	3.398m
Min Body Ground Clearance	0.295m
Max Track Width	2.479m
Lock to lock time	6.00s
Kerb to Kerb Turning Radius	6.790m

NOTE: SWEPT PATH ANALYSIS HAS BEEN CARRIED OUT ON A COMBINATION OF AERIAL MAPPING, VECTOR BASE MAPPING AND TOPOGRAPHICAL SURVEY

Issue Status: DRAFT

AECOM

Appendix: A

ABNORMAL LOAD
SWEPT PATH ANALYSIS

DERRYGREENAGH POWER STATION

Bord na Mona
Project No.: 60699676 Date: 2024-01-10

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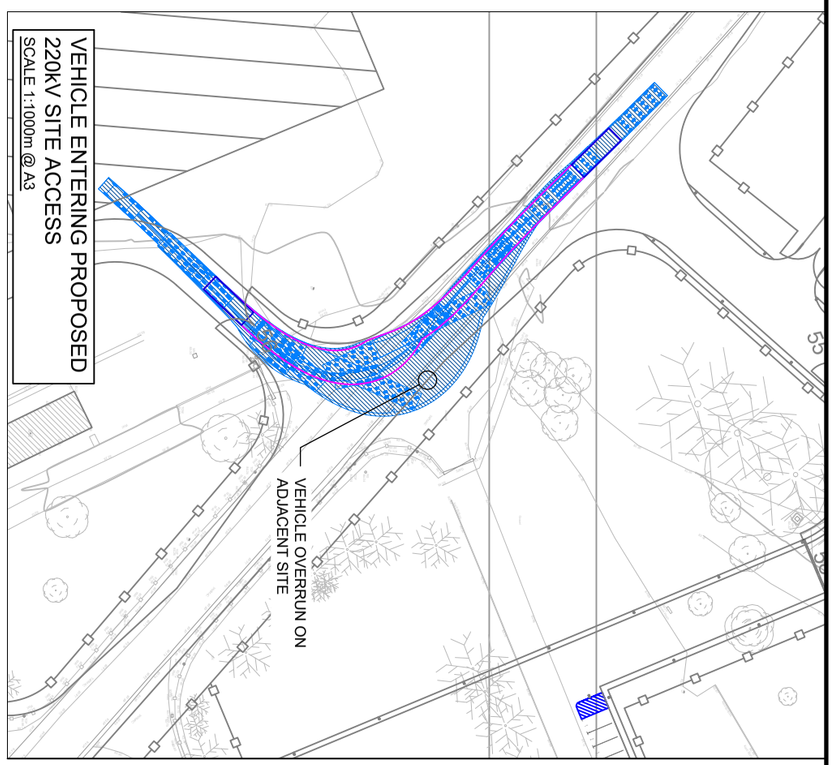

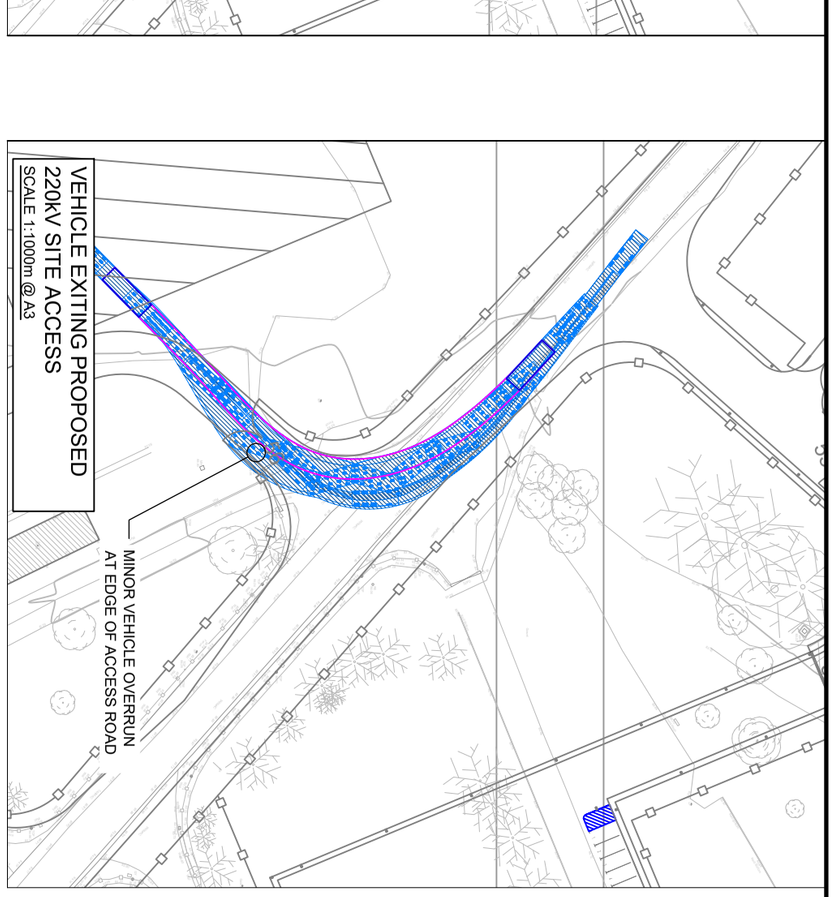

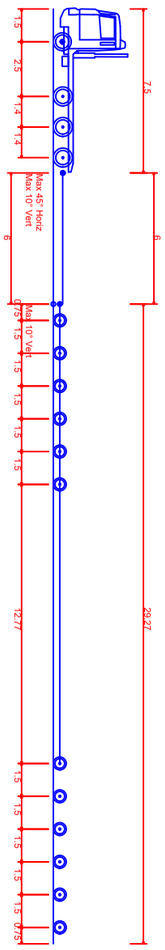

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