MACHAIRE BESS

Transport Statement

794-NI-P&E-02940

27 February 2025

rpsgroup.com

Document status

Version	Purpose of document	Authored by	Reviewed by	Approved by	Review date
V01	For Review	T McCammon	S Houlihan	C O'Hara	Feb 2024
V02	Planning Submission	T McCammon	S Houlihan	C O'Hara	Feb 2024

Approval for issue

S Houlihan		27/02/2025

Prepared by:

RPS

Tim McCammon
Graduate Transport Planner

Elmwood House
74 Boucher Road, Belfast
Co. Antrim BT12 6RZ

T +44 2890 667 914
E timothy.mccammon@tetratech.com

Prepared for:

RES

T
E

Contents

Tables

Figures

Appendices

1 INTRODUCTION

1.1 Purpose and Site Context

RPS was commissioned by RES to prepare a **Transport Statement (TS)** as part of a planning application pack which seeks permission for the following:

> "*Installation and operation of a Battery Energy Storage System (BESS) with associated infrastructure including fencing, pole-mounted security cameras, landscaping and site access.*"

Figure 1.1 illustrates the site location in the context of the surrounding road network, with the proposed development layout presented in **Appendix A.**

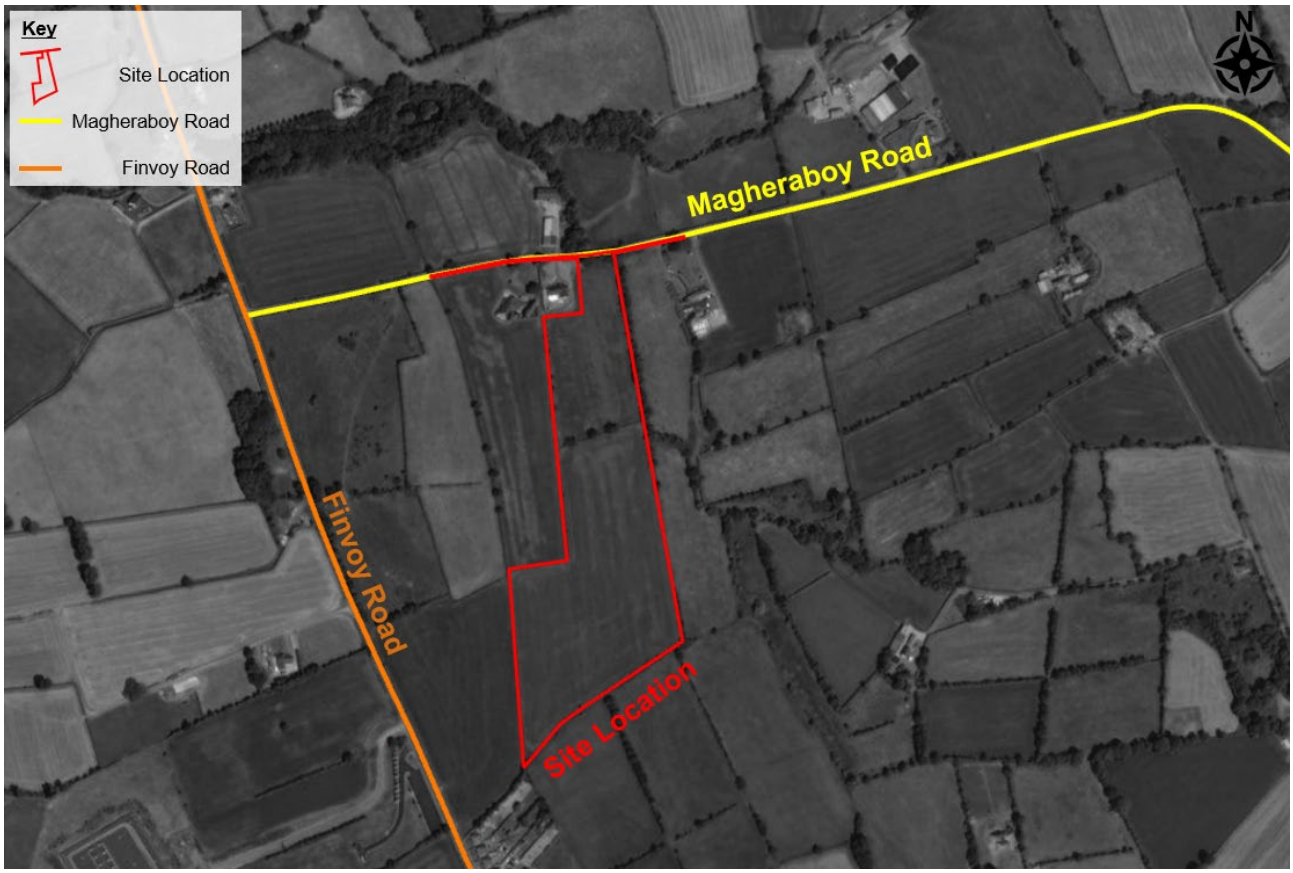


Figure 1.1 - Site Location

The site is located within a rural setting, situated approximately 2km to the north of Rasharkin. The surrounding land uses consists of rural residential dwellings and agriculture.

The proposed development comprises of a construction, operational and decommissioning phase, with the most onerous phase for vehicular movements associated with the construction phase. During the operational phase the facility will be unmanned and vehicle movements will be associated with routine maintenance and inspection only, anticipated to comprise typically of one vehicle (Transit Van or similar) trip per week. Therefore the traffic impacts associated with the operational phase are not considered further within this TS.

The purpose of this TS is to quantify the demand for travel associated with the construction element of the development and establish whether the local road network can accommodate this increased demand. Measures to minimise or mitigate the impact of vehicle movements, if necessary, will be outlined in this report.

The TS was prepared in accordance with the **Transport Assessment (TA)** guidelines document (July 2006) published by the Department for Infrastructure (DfI).

2 POLICY AND GUIDELINES

In undertaking the assessment of the potential traffic and transport impacts associated with the proposed development, all relevant local and national policy and guidance was considered, including:

- Guidelines for the Environmental Assessment of Road Traffic (IEMA Guidelines, 2023)
- Transport Assessment Guidelines (DfI, 2006)
- Development Control Advice Note (DCAN) 15
- Design Manual for Roads and Bridges (DMRB)
- Causeway Coast and Glens Local Development Plan 2030; and
- Causeway Coast and Glens Borough Council Local Transport Study.

The main transport constraints relating to the proposed development relate to the transportation of construction material and the impact of general and abnormal loads construction traffic. In order to quantify the significance of any changes in traffic flows, the following criteria is used (from IEMA Guidelines):

- "Include highway links where traffic flows will increase by more than 30% (or the number of Heavy Goods Vehicles will increase by more than 30%)"; and
- "Include any other specifically sensitive areas where traffic flows will increase by 10% or more."

Where observations of existing traffic levels are recorded as being exceptionally low, any increase in traffic flow is likely to result in a predicted increase in traffic levels which could in normal circumstances be considered a major impact. Where this situation is identified, it is important to consider any increase both in terms of its relative increase in respect of existing traffic flows, as well as the overall total flow in respect of the available capacity of the section of road being considered.

The DfI TA guidance provides information relevant to the preparation of a TA and TSs for developments in Northern Ireland. The guidance ensures that mechanisms are in place to specify, assess, revise, implement, monitor and review the impacts that developments will have on the wider transport system. The guidance establishes thresholds when a TA or TS is required, and states the following:

- A TA is required for most large developments where there is a potential for a major traffic impact on the surrounding transport network. These developments include the following:
  - Food / non-food retail with Gross Floor Area (GFA) over 1,000m^2
  - Hotels with more than 50 beds; or
  - Residential developments with 100 dwellings or more.
- Transport Statements are slimmed down versions of a full TA when the traffic impacts are not considered to be significant on the surrounding highway network, but still need to be considered.

3 BASELINE CONDITIONS

3.1 Existing Road Network

It is proposed that the development will include a new site access on Magheraboy Road, the location is indicated in **Figure 3.1.**

Magheraboy Road is a rural road that connects Mullan Road to Finvoy Road. Finvoy Road is also a rural road that connects Rasharkin to Ballymoney via the B66 distributer road. Finvoy Road is a single carriageway two-way road with a posted national speed limit in the vicinity of Magheraboy Road.

3.2 Traffic Survey

In order to determine existing traffic flows on Magheraboy Road in the vicinity of the site, Automatic Traffic Counts (ATCs) were undertaken by MHC Traffic Data Ltd, which commenced at Tuesday 15th October 2024 and finished on Monday 21st October 2024. The ATC survey location is illustrated in **Figure 3.1**.

Figure 3.1 - ATC Survey Location

The total daily traffic flows for each day surveyed is presented in **Table 3.1**

Table 3.1 - Total Daily Vehicle Flows with % HGV on Magheraboy Road

Survey Day	Magheraboy Road ATC Daily Two-way Vehicle Flows				
	Eastbound Vehicles	Westbound Vehicles	Total Vehicle (Two-way)	Total HGVs (Two-way)	HGV Percentage
Tuesday 15th October 2024	69	76	145	12	8%
Wednesday 16th October 2024	56	60	116	7	6%
Thursday 17th October 2024	62	56	118	4	3%
Friday 18th October 2024	66	69	135	8	6%
Saturday 19th October 2024	45	50	95	7	7%
Sunday 20th October 2024	24	27	51	0	0%
Monday 21st October 2024	**61**	**52**	**113**	13	12%
5 Day Average	**63**	**63**	**125**	**9**	**7%**
7 Day Average	**55**	**56**	**110**	**7**	**6%**

As illustrated in **Table 3.1**, traffic flows along Magheraboy Road are low, however noting that Magheraboy Road does currently accommodate HGV traffic. Although traffic levels were consistent throughout the week, Friday 18th October 2024 resulted in the highest level of daily traffic flows and HGVs at the survey site. Vehicle speeds were also recorded in the vicinity of the proposed access, with these daily vehicle speeds presented in **Table 3.2** and which demonstrate vehicle mean and 85%ile speeds, per direction and two-way.

Table 3.2 - Daily Vehicle Speeds on Magheraboy Road

Survey Day	Magheraboy Road Daily Vehicle Speeds					
	Eastbound		Westbound		Two-Way	
	85th Percentile (mph)	Mean Speed (mph)	85th Percentile (mph)	Mean Speed (mph)	85th Percentile (mph)	Mean Speed (mph)
Tuesday 15th October 2024	43	35	43	34	43	34
Wednesday 16th October 2024	43	36	43	36	43	36
Thursday 17th October 2024	42	34	43	33	42	34
Friday 18th October 2024	42	34	45	34	43	34
Saturday 19th October 2024	45	36	45	36	45	36
Sunday 20th October 2024	44	37	47	37	45	37
Monday 21st October 2024	44	35	44	34	44	35
5 Day Average	**43**	**35**	**43**	**34**	**43**	**35**
7 Day Average	**43**	**35**	**44**	**35**	**44**	**35**

As seen in **Table 3.2,** the mean and 85th percentile speed remains constant across the week with an average 85%ile speed of 44mph recorded.

3.3 Road Safety

The Northern Ireland Statistics & Research Agency (NISRA) was interrogated to determine the number of road traffic collisions (RTCs) which have occurred over the most recent five years of data that is currently available (2019-2023), with this information is presented in **Figure 3.3**.

Figure 3.2 - Collision Data from 2019-2023 in the vicinity of the site access (source: NISRA)

As indicated in **Figure 3.3**, there were no collisions recorded in the vicinity of the site access.

3.4 Pedestrian and Cycle Network

There is no existing dedicated pedestrian or cycling facilities in the vicinity of the site on Magheraboy Road, however given the rural location and nature of the proposed development, and minimal anticipated operational trips for maintenance works purposes only, there will be no walking or cycling trips associated with the proposed development once operational.

4 DEVELOPMENT PROPOSAL

Given the nature of the proposed development, it is anticipated that the onerous trip attracting time period will be associated with the construction phase.

4.1 Construction Phase Traffic Generation

ATC surveys were undertaken to determine the existing baseline traffic flows and traffic speeds recorded along the proposed construction traffic route as identified in **Chapter 3** of this TS. This data was used to inform how the site's expected daily trip arrivals and departures might impact the surrounding road network during the construction phase.

Based on Applicant project experience, it is anticipated that the construction phase will occur over a period of 18 months. Overall, the delivery of materials to site will generally occur uniformly over the project's construction period, it is projected that there will be 11 HGV two-way trips to the site per day. Deliveries are expected to occur regularly and will be scheduled to prevent conflict between vehicle arrivals and departures, including queueing and delays within the road network.

The proposed development also requires an estimated total of 10-40 staff to be on site at any one time during the scheme construction. Construction staff will typically arrive in teams of 3-5 persons in working vans. Whilst the number of construction staff will vary across the construction phase, in accordance with a worst-case scenario approach, this assessment considers the maximum workers on site to be 40 During these months there will be up to 40 construction staff arriving on site per day with an area of the site's temporary construction compound to be used to park vehicles. Allowing for 13 staff vehicles arriving in teams of 3 staff, and one staff member arriving in a single occupancy vehicle, this equates to 14 staff vehicles arriving at the site and 28 two-way staff vehicle trips per day.

These construction staff and HGV traffic movements will all be scheduled to occur outside of the traditional commuter peak periods of 08:00 - 09:00 and 17:00 - 18:00. Workers are predicted to arrive between 07:00 and 08:00, leaving site before 17:00 or after 18:00 in the evening. HGV deliveries will arrive/depart during the working day (out with the AM/PM commuter peaks) and in accordance with the Construction Traffic Management Plan (CTMP - see Chapter 5). It should also be noted that the construction phase impact upon the surrounding road network will be temporary.

Construction staff arrivals and departures, along with travel trends will be presented within the contractor's CTMP. It is anticipated that the requirement to provide and agree a CTMP with the planning authority prior to the commencement of development, will be applied as a planning condition to any emerging consent for the Proposed Development. This approach has emerged as standard practice applied to applications of this type within Northern Ireland and elsewhere.

4.2 Proposed Site Layout and Access

It is proposed that a new access on Magheraboy Road will be constructed to serve the Proposed Development. The proposed layout including the location and layout of the access point is shown in **Appendix A.** The ATC surveys presented in **Table 3.2** demonstrate that the 7-day 85%ile speed on Magheraboy Road in the vicinity of the proposed access is 44mph; therefore visibility splays of 2.4m x 90m is considered acceptable, with the visibility splay drawing presented in **Appendix B**.

4.3 Abnormal Loads

During the construction phase, two abnormal loads are likely to be required; one being a mobile crane and one flatbed vehicle used to transport the grid transformer, totalling two movements each. At this time, it is not expected that further abnormal loads will be required, however, once final supplier confirmations and technical specifications have been completed following detailed design, a comprehensive route assessment will be conducted as part of the CTMP. This assessment will identify if any necessary mitigation measures are required, such as the use of escort vehicles, in compliance with legal requirements. Should any additional abnormal loads be identified during the detailed design phase, further assessments will be undertaken to ensure full compliance with all relevant legislation and guidance. A typical mobile crane of this type, illustrated in **Figure 4.1,** measures 3.1 meters in width, ~20m meters in length, and has a gross weight of 96 tonnes. DfI

and the Police Service Northern Ireland (PSNI) shall be notified at least five working days in advance of the abnormal loads accessing the site as required.

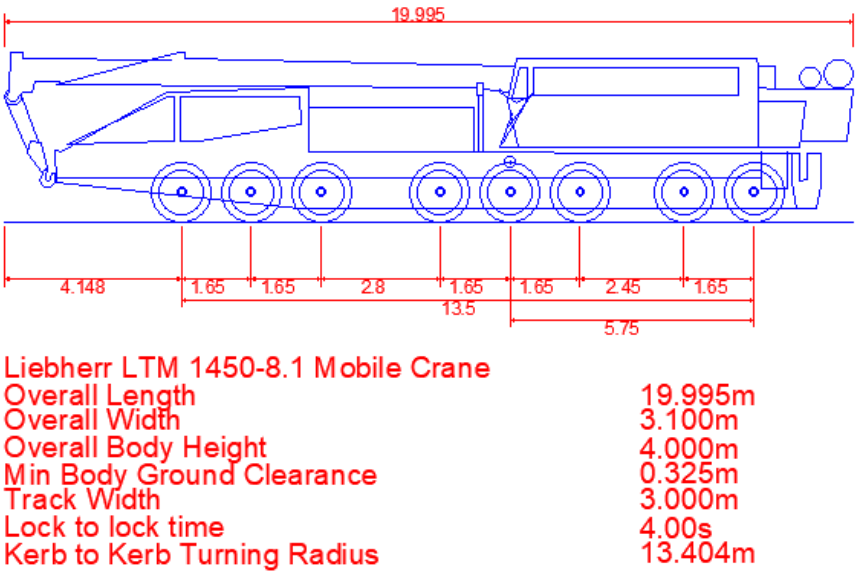


Figure 4.1 - Mobile Crane Dimensions

4.3.1 Swept Path Analysis

A swept path analysis was undertaken for the abnormal load vehicles accessing the site and which is illustrated in **Appendix C**.

5 TRAFFIC MANAGEMENT MEASURES

The primary means of controlling construction vehicular traffic will be through an approved Construction Traffic Management Plan (CTMP), which will inter alia present the routes that should be avoided during construction activities. This CTMP will form part of the contractor agreements, offering a means of enforcement by the Site Manager. As per standard practice, it is expected that the requirement to provide a CTMP for approval will be a conditioned requirement of any planning consent. Typical measures that may be included within the CTMP are set out below.

5.1 Temporary Construction Measures

Within the site itself, construction compound areas will be provided for loading and unloading of vehicles and will provide a turning area to allow vehicles to exit the site in forward gear. All delivery drivers and construction workers will be advised of the construction route prior to making their delivery or commencing work.

It is also proposed that temporary signage will be located in the vicinity of the site access during the construction period to warn drivers of the site entrance, as indicated in **Figure 5.1**.

Figure 5.1 – Temporary Signage in Vicinity of Site Access

There may also be a requirement to identify temporary advance signage, however, if required this will be set out in the final CTMP agreed with DfI. The Applicant will appoint a Site Manager for the project and the details will be provided to DfI once confirmed. The Site Manager for the project will undertake the transport co-ordination role for the proposed development site and their main responsibilities will include:

- Managing implementation of the CTMP
- Vehicle scheduling
- Checking for scheduled road works that could disrupt arrivals
- Handling any complaints; and
- Acting as a point of contact for employees, contractors and the general public.

The Site Manager will ensure that there is adequate liaison between the following key stakeholders throughout the construction period:

- The Contractor
- The Applicant

6 CONCLUSIONS

RPS was commissioned by RES to prepare a **Transport Statement** as part of a planning application pack which seeks permission for the:

> *"Installation and operation of a Battery Energy Storage System (BESS) with associated infrastructure including fencing, pole-mounted security cameras, landscaping and site access."*

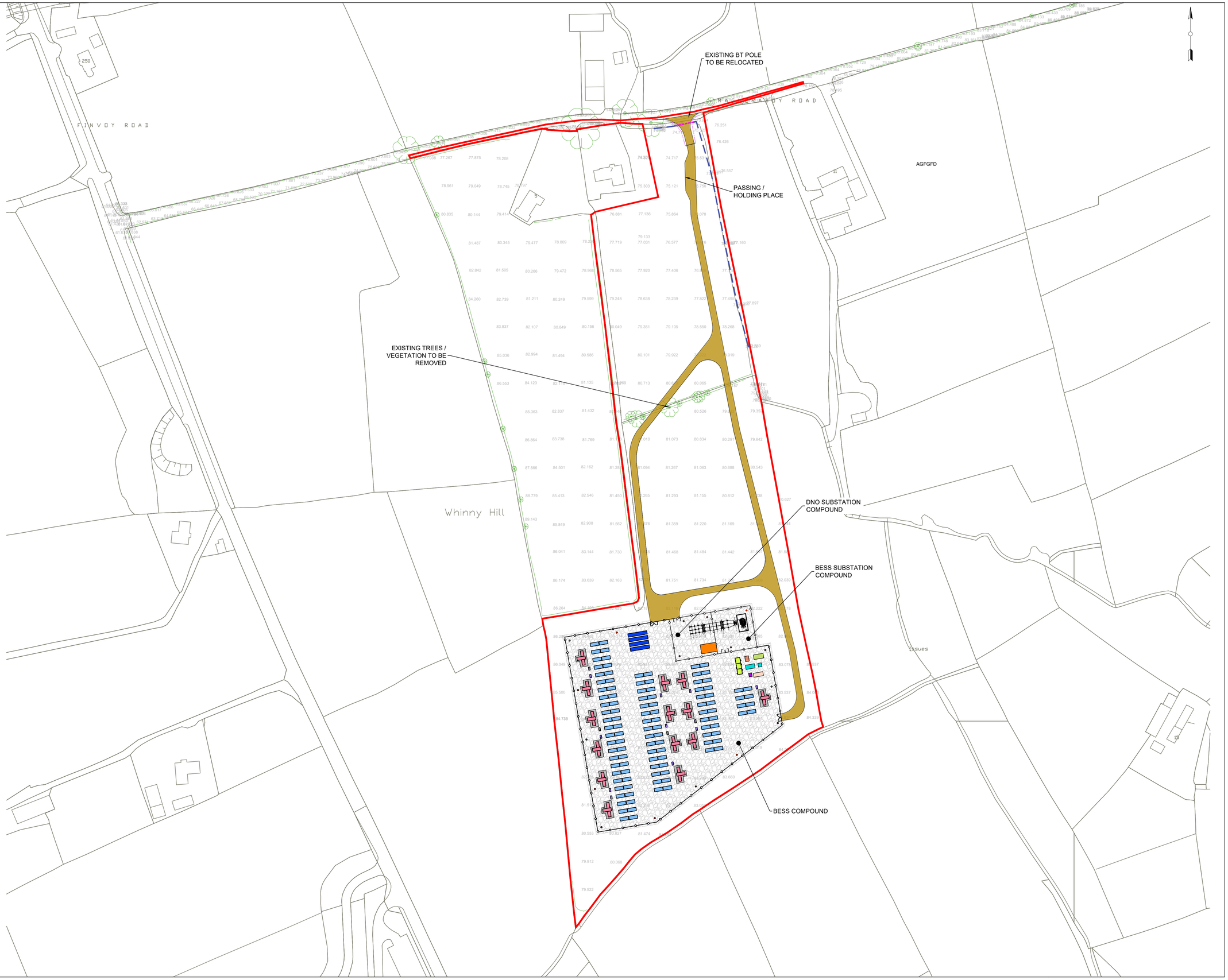
This Transport Statement was prepared in accordance with the Transport Assessment Guidance (2006) document published by Department for Infrastructure and has also taken account of other relevant national, regional and local policies.

The assessment has considered the traffic generation associated with the most onerous month of the 18-month construction phase and concludes that the construction phase will not have a significant impact upon the surrounding highway network. The decommissioning phase will have a less onerous programme and impact than the construction phase.

The assessment has considered the traffic generation associated with the operational phase of the development and concluded that the operational phase will not have a significant impact upon the surrounding road network, with the operational phase anticipated to generate only one vehicle trip per week for general maintenance.

Therefore, based on the information presented above this proposal should be recommended for planning approval.

Appendix A Site Layout



KEY:

- DEVELOPMENT BOUNDARY (OUTSIDE OF LINE DENOTES BOUNDARY)
- PALISADE WELDMESH OR ACOUSTIC FENCE
- BATTERY STORAGE ENCLOSURE (BSE)
- 2 No. POWER CONVERSION SYSTEMS (PCS) WITH TWIN MV SKID AND APRON SLAB
- DNO SUBSTATION BUILDING
- DNO SUBSTATION BUILDING
- BESS SUBSTATION BUILDING
- AUXILIARY TRANSFORMER
- LV SWITCHGEAR ROOM
- AGGREGATION PANEL WITH LV PILLAR
- PRE-INSERTION RESISTOR
- CAPACITOR BANK
- HARMONIC FILTER AND RESISTOR
- SPARES CONTAINER
- LIGHTING / CCTV COLUMN
- ACCESS TRACK
- SURFACE FINISH TYPICALLY COMPRISING STONE OR ASPHALT
- EXISTING TREES AND VEGETATION
- GATE
- EXISTING FENCE MODIFIED
- EXISTING DRAINAGE INFRASTRUCTURE
- WATER CHANNEL CROSSING / CULVERT

NOTES:

1. EQUIPMENT DETAILS AND CONFIGURATION WITHIN THE ENERGY STORAGE COMPOUND ARE INDICATIVE AND SUBJECT TO DETAILED DESIGN.

ISSUE	DRAWN	CHKD	APPD	DATE	REVISION NOTES
2	BM	AP	PH	2025-02-19	DESIGN EVOLUTION
1	BM	AP	PH	2024-10-09	FIRST ISSUE

PURPOSE: PLANNING	COORDINATES: TM65 IRISH GRID
SCALE: 1:1,250 @ A1	DATUM: N/A
LAYOUT DWG: N/A	T-LAYOUT NO.: N/A

PROJECT TITLE: MACHAIRE ENERGY STORAGE

DRAWING TITLE: INFRASTRUCTURE LAYOUT

RES DRAWING NUMBER: 05511-RES-LAY-DR-PT-001 | REV: 2

BEAUFORT COURT,
EGG FARM LANE,
KINGS LANGLEY,
HERTS WD4 8LR. UK
TEL +44 (0) 1923 299200
WWW.RES-GROUP.COM

Appendix B Proposed Site Access Visibility Splay

NOTES

1. Verifying Dimensions.
   The contractor shall verify dimensions against such other drawings or site conditions as pertain to this part of the work.

2. Existing Services.
   Any information concerning the location of existing services indicated on this drawing is intended for general guidance only. It shall be the responsibility of the contractor to determine and verify the exact horizontal and vertical alignment of all cables, pipes, etc. (both underground and overhead) before work commences.

3. Issue of Drawings.
   Hard copies, dwf and pdf will form a controlled issue of the drawing. All other formats (dwg, dxf etc.) are deemed to be an uncontrolled issue and any work carried out based on these files is at the recipients own risk. RPS will not accept any responsibility for any errors arising from the use of these files, either by human error by the recipient, listing of un-dimensioned measurements, compatibility issues with the recipient's software, and any errors arising when these files are used to aid the recipients drawing production, or setting out on site.

4. Datum.

Key

Topography

Proposed Visibility

Proposed Site Access Track

rev	amendments	check	date

Elmwood House
74 Boucher Road
Belfast
BT12 6RZ

T +44 (0) 28 90 667914
F +44 (0) 28 90 668286
W www.rpsgroup.com/ireland
E ireland@rpsgroup.com

Client
RES

Project
Machaire

Title
Magheraboy Road / Site Access
44mph (90m) Visibility Splay
Sheet 1 of 1

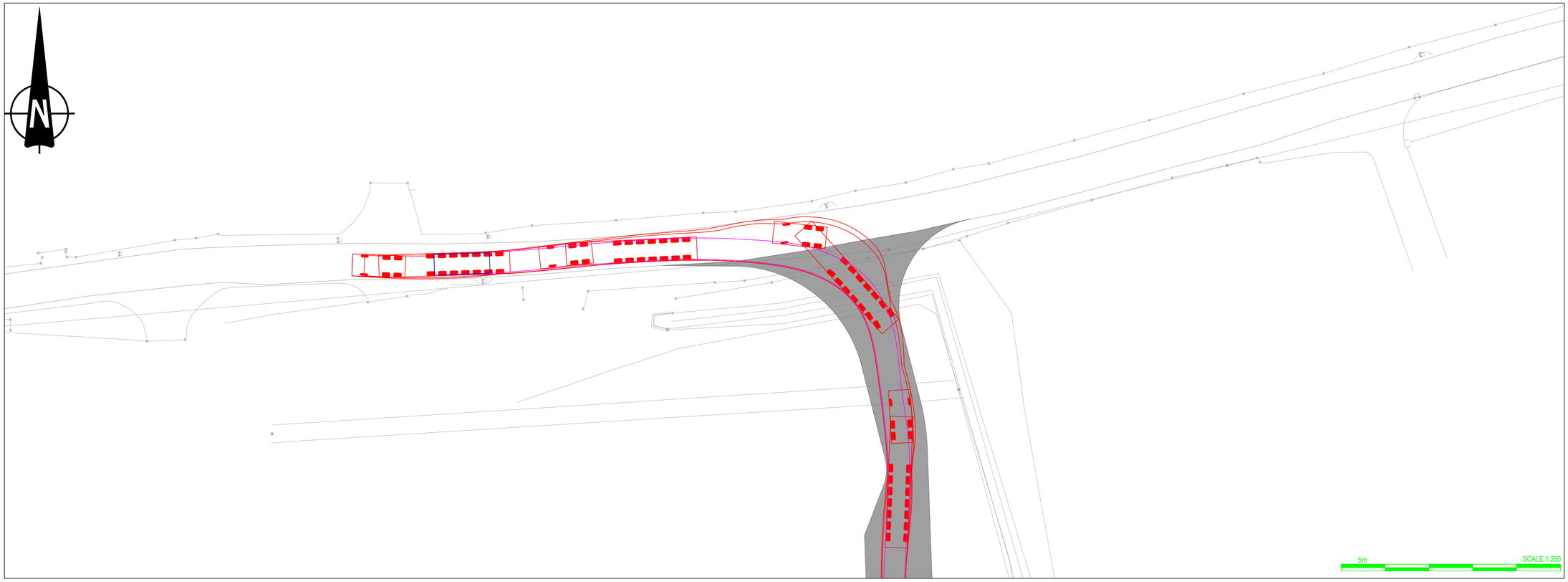
Project Number	Sheet Size	Drawing Scale
794-NI-P&E-02940	A1	1:500

Drawing Number
SK001

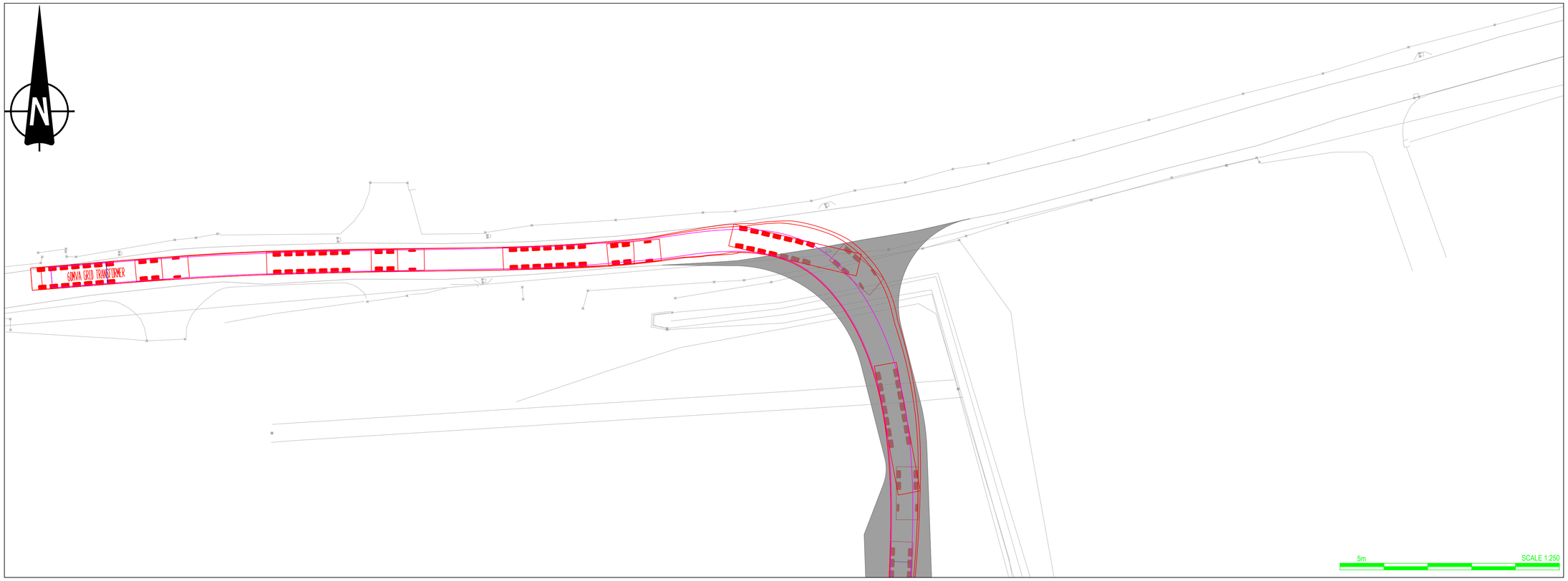
Drawn By	Status	Revision
TM	Preliminary	-

Checked By	Approved By	Date
MMcG	SH	06/02/2025

Appendix C Swept Path Analysis



Viewport 1 - Magheraboy Road / Site Access
Grid Transformer - Left Out



Viewport 2 - Magheraboy Road / Site Access
Grid Transformer - Right In

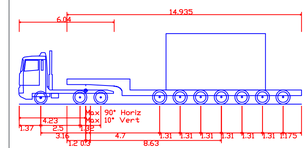
NOTES

1. Verifying Dimensions.
   The contractor shall verify dimensions against such other drawings or site conditions as pertain to this part of the work.
2. Existing Services.
   Any information concerning the location of existing services indicated on this drawing is intended for general guidance only. It shall be the responsibility of the contractor to determine and verify the exact horizontal and vertical alignment of all cables, pipes, etc. (both underground and overhead) before work commences.
3. Issue of Drawings.
   Hard copies, dwf and pdf will form a controlled issue of the drawing. All other formats (dwg, dxf etc.) are deemed to be an uncontrolled issue and any work carried out based on these files is at the recipients own risk. RPS will not accept any responsibility for any errors arising from the use of these files, either by human error by the recipient, listing of un-dimensioned measurements, compatibility issues with the recipient's software, and any errors arising when these files are used to aid the recipients drawing production, or setting out on site.
4. Datum.

Key

Topography

Proposed Site Access Track



60MVA GRID TRANSFORMER

Overall Length	17.965m
Overall Width	2.550m
Overall Body Height	4.496m
Min Body Ground Clearance	0.318m
Max Track Width	2.550m
Lock to lock time	6.00s
Kerb to Kerb Turning Radius	6.990m

rev	amendments	check	date

RPS
Elmwood House
74 Boucher Road
Belfast
BT12 6RZ
T +44 (0) 28 90 667914
F +44 (0) 28 90 668286
W www.rpsgroup.com/ireland
E ireland@rpsgroup.com

Client
RES

Project
Machaire

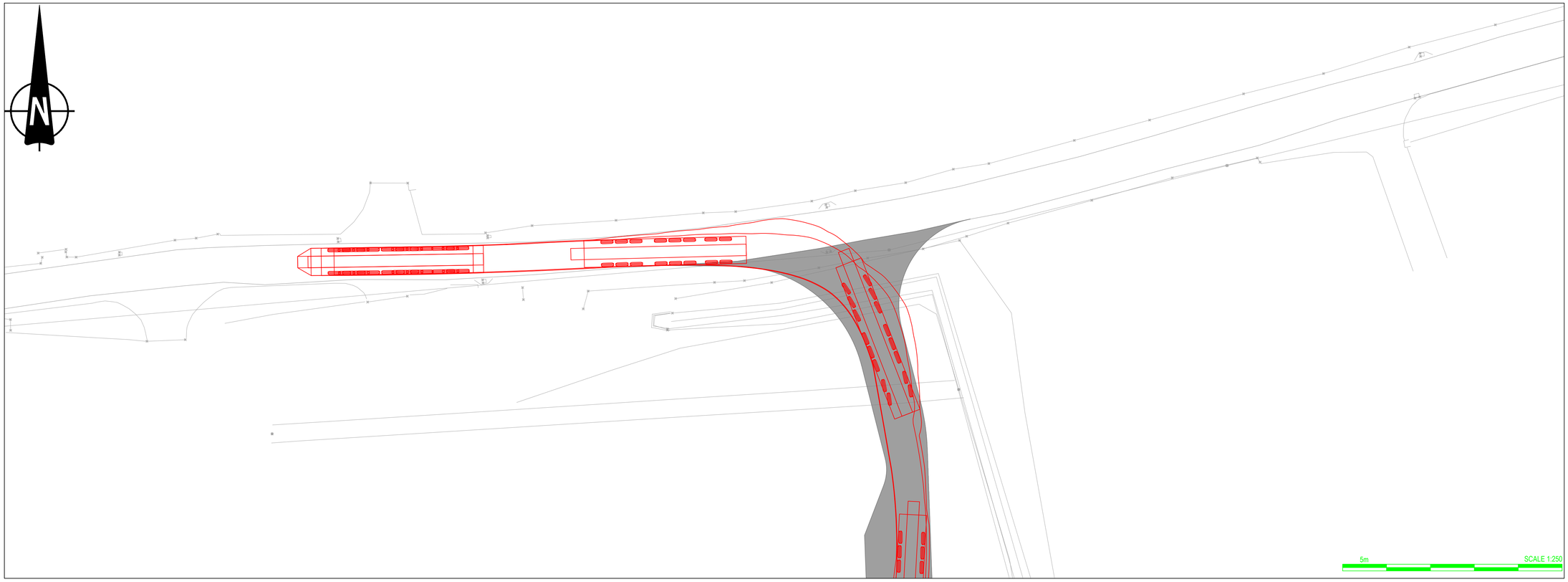
Title
Magheraboy Road / Site Access
- Low Loader Swept Path
Sheet 1 of 1

Project Number	Sheet Size	Drawing Scale
794-NI-P&E-02940	A1	1:250

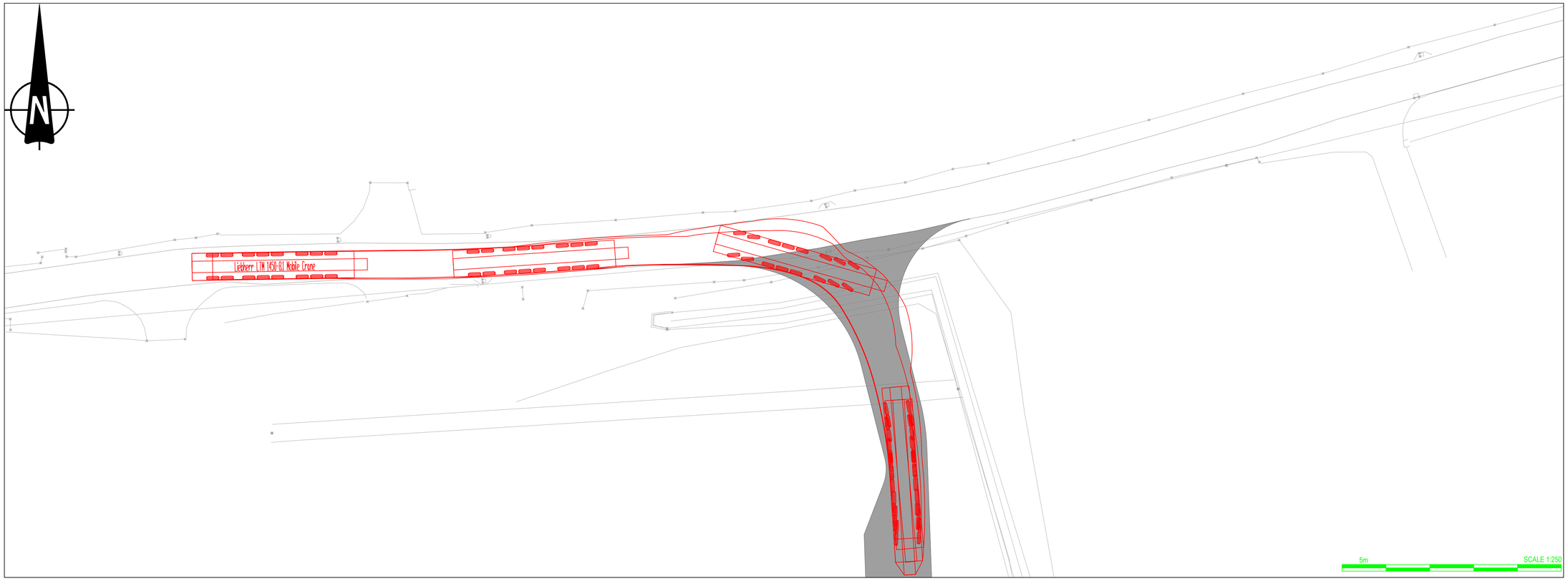
Drawing Number
SK003

Drawn By	Status	Revision
TM	Preliminary	-

Checked By	Approved By	Date
MMcG	SH	06/02/2025



Viewport 1 - Magheraboy Road / Site Access
Crane - Left Out



Viewport 2 - Magheraboy Road / Site Access
Crane - Right In

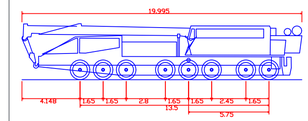
NOTES

1. Verifying Dimensions.
   The contractor shall verify dimensions against such other drawings or site conditions as pertain to this part of the work.
2. Existing Services.
   Any information concerning the location of existing services indicated on this drawing is intended for general guidance only. It shall be the responsibility of the contractor to determine and verify the exact horizontal and vertical alignment of all cables, pipes, etc. (both underground and overhead) before work commences.
3. Issue of Drawings.
   Hard copies, dwf and pdf will form a controlled issue of the drawing. All other formats (dwg, dxf etc.) are deemed to be an uncontrolled issue and any work carried out based on these files is at the recipients own risk. RPS will not accept any responsibility for any errors arising from the use of these files, either by human error by the recipient, listing of un-dimensioned measurements, compatibility issues with the recipient's software, and any errors arising when these files are used to aid the recipients drawing production, or setting out on site.
4. Datum.

Key

Topography

Proposed Site Access Track



Liebherr LTM 1450-8.1 Mobile Crane

Overall Length	19.995m
Overall Width	3.100m
Overall Body Height	4.000m
Min Body Ground Clearance	0.325m
Track Width	3.000m
Lock to lock time	4.00s
Kerb to Kerb Turning Radius	13.404m

rev	amendments	check	date

RPS
Elmwood House
74 Boucher Road
Belfast
BT12 6RZ
T +44 (0) 28 90 667914
F +44 (0) 28 90 668286
W www.rpsgroup.com/ireland
E ireland@rpsgroup.com

Client
RES

Project
Machaire

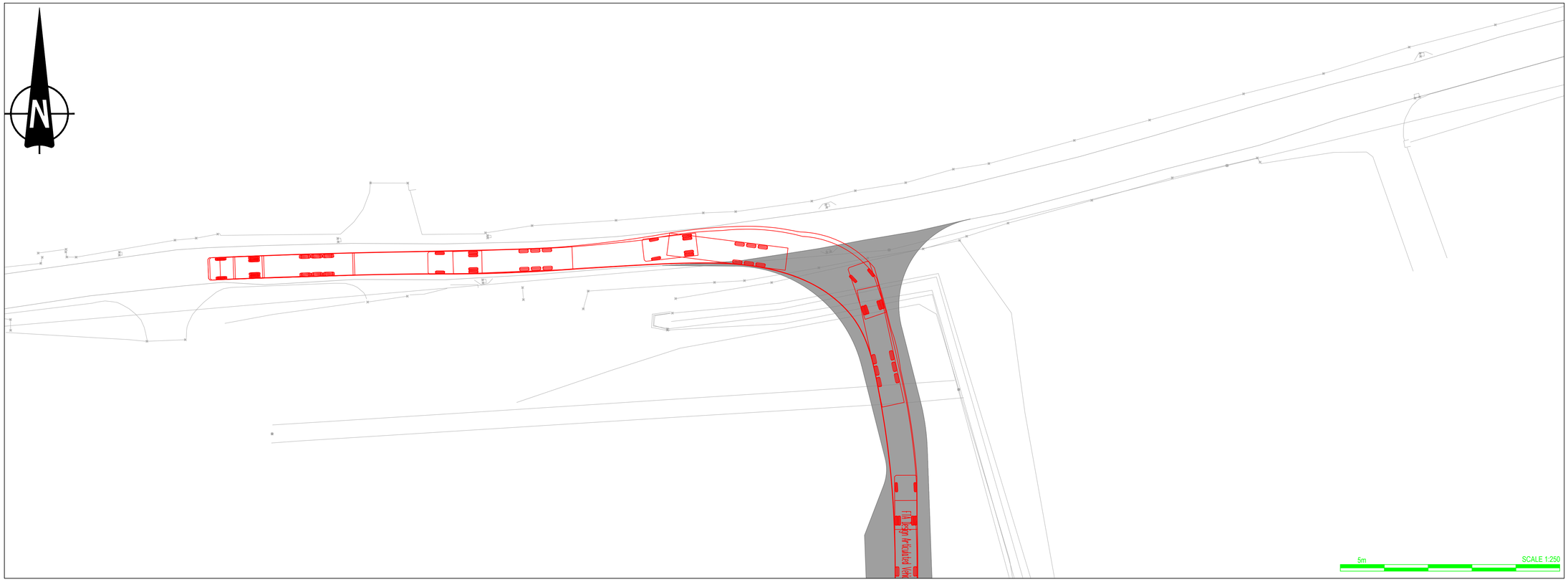
Title
Magheraboy Road / Site Access
- Crane Swept Path
Sheet 1 of 1

Project Number	Sheet Size	Drawing Scale
794-NI-P&E-02940	A1	1:250

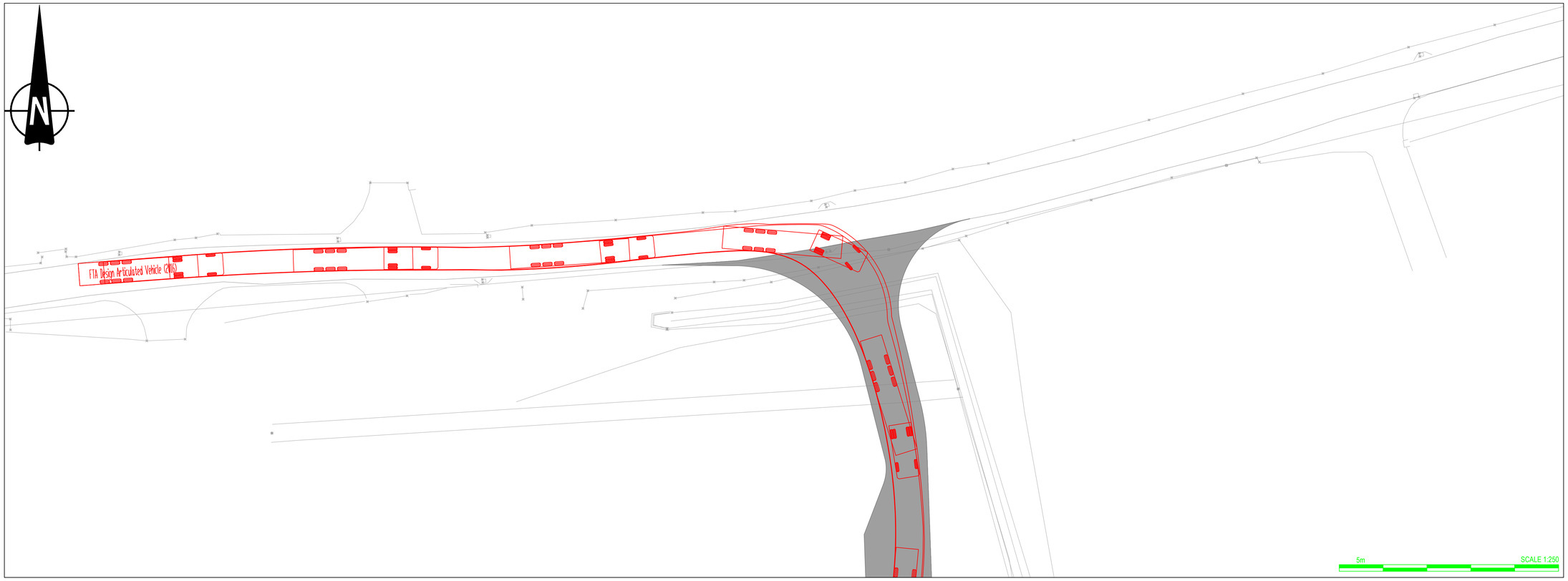
Drawing Number
SK004

Drawn By	Status	Revision
TM	Preliminary	-

Checked By	Approved By	Date
MMcG	SH	06/02/2025



Viewport 1 - Magheraboy Road / Site Access
HGV - Left Out



Viewport 2 - Magheraboy Road / Site Access
HGV - Right In

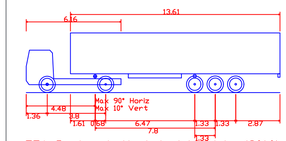
NOTES

1. Verifying Dimensions.
   The contractor shall verify dimensions against such other drawings or site conditions as pertain to this part of the work.
2. Existing Services.
   Any information concerning the location of existing services indicated on this drawing is intended for general guidance only. It shall be the responsibility of the contractor to determine and verify the exact horizontal and vertical alignment of all cables, pipes, etc. (both underground and overhead) before work commences.
3. Issue of Drawings.
   Hard copies, dwf and pdf will form a controlled issue of the drawing. All other formats (dwg, dxf etc.) are deemed to be an uncontrolled issue and any work carried out based on these files is at the recipients own risk. RPS will not accept any responsibility for any errors arising from the use of these files, either by human error by the recipient, listing of un-dimensioned measurements, compatibility issues with the recipient's software, and any errors arising when these files are used to aid the recipients drawing production, or setting out on site.
4. Datum.

Key

Topography

Proposed Site Access Track



FTA Design Articulated Vehicle (2016)

Overall Length	16.480m
Overall Width	2.550m
Overall Body Height	3.870m
Min Body Ground Clearance	0.515m
Max Track Width	2.470m
Lock to lock time	3.00s
Kerb to Kerb Turning Radius	6.600m

rev	amendments	check	date

Elmwood House
74 Boucher Road
Belfast
BT12 6RZ

T +44 (0) 28 90 667914
F +44 (0) 28 90 668286
W www.rpsgroup.com/ireland
E ireland@rpsgroup.com

Client
RES

Project
Machaire

Title
Magheraboy Road / Site Access
- HGV Swept Path
Sheet 1 of 1

Project Number	Sheet Size	Drawing Scale
794-NI-P&E-02940	A1	1:250

Drawing Number
SK005

Drawn By	Status	Revision
TM	Preliminary	-

Checked By	Approved By	Date
MMcG	SH	06/02/2025