

consulting
engineers

NRB

**Stage 1
Road Safety Audit**

For

Neo Environmental Limited

At

**Drybridge Solar Farm
and BESS**

SUBMISSION ISSUE

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1.0 INTRODUCTION

- 1.1 NRB has been commissioned by Neo Environmental Limited on behalf of Elgin Energy ESI Limited to undertake a Stage 1 Road Safety Audit (RSA) of a proposed Solar Farm and BESS (Battery Energy Storage System), located in a rural setting approximately 4.83km northwest of the nearest town of Drogheda, County Louth.
- 1.2 This Stage 1 Road Safety Audit has been carried out in accordance with the requirements of TII Publication Number GE-STY-01024, dated May 2025. The team has examined and reported only on the road safety implications of the scheme as presented and they have not examined or verified the compliance of the design to any other criteria.
- 1.3 The Road Safety Audit Team comprised;
- Team Leader: Norman Bruton, BE CEng FIEI, Cert Comp RSA.
TII Auditor Approval no. NB 168446
- Team Member: Brian McMahon, BE MSc CEng, Cert Comp RSA.
TII Auditor Approval no. BM142319
- 1.4 The Safety Audit Report indicates each of the problems identified, provides outline recommendations for solving the problems, presents the Audit Team Statement, and describes a schedule of documents reviewed.
- 1.5 The Road Safety Audit included daytime site visit on the 4th February 2026. The weather at the time of the daytime site visit was overcast with occasional rain.
- 1.6 The response of the Design Team to the Safety Audit should be prepared in the form of a Safety Audit Feedback Form, accepting the changes proposed by the Audit Team or providing an alternative solution to the problem. The Feedback Form is then returned to the Audit Team for review and verification.
- 1.7 If any of the recommendations within this safety audit report are not accepted, a written response is required, stating reasons for non-acceptance. Comments made within the report under the heading of Observation are intended to be for information only. Written responses to Observations are not required.

- 1.8 The information supplied to the Audit Team is listed in **Appendix A**. The feedback form is contained in **Appendix B**, and the problem locations are shown in **Appendix C**.
- 1.9 No departures from standards have been notified to the audit team.

2.0 BACKGROUND

2.1 NRB has been commissioned by Neo Environmental Limited on behalf of Elgin Energy ESI Limited to undertake a Stage 1 Road Safety Audit (RSA) of a proposed Solar Farm and BESS (Battery Energy Storage System), located in a rural setting approximately 4.83km northwest of the nearest town of Drogheda, County Louth.

2.2 The Stage 1 RSA is submitted in response to a request for Further Information from An Coimisiún Pleanála which states.

'The applicant is requested to submit a Stage 1 Road Safety Audit of the proposed development to include all proposed site accesses and the haul routes'

2.3 The proposed Solar Farm development will comprise photovoltaic (PV) panels mounted on steel support frames, together with associated inverter units and battery energy storage infrastructure, including BESS containers, Power Conversion System (PCS) units, storage and maintenance facilities. The development will also include new internal access tracks, underground cabling, perimeter security fencing with CCTV cameras and access gates, temporary construction compounds, and all ancillary grid connection infrastructure and related site works.

2.4 The Proposed Development Area is located in a rural setting approximately 4.83km north-west of Drogheda. The wider area is characterised by a moderate level of ribbon development along the local road network, including Kearney's Lane located approximately 0.68km to the south-east of the site.

2.5 The proposed development site extends to approximately 92.3 hectares. The site comprises 22 agricultural fields, currently used predominantly for cattle grazing, with the remaining lands in arable agricultural use. Overhead electrical lines traverse the central eastern portion of the site. Field boundaries generally consist of mature hedgerows, trees, and post-and-wire fencing.

2.6 Access to the Proposed Development will be provided at the north-eastern section of the site via the existing farm access track extending south-westwards from the R132. Access to the south-western section will be obtained from an existing track extending north-westwards from an unnamed local road. The M1 Motorway bisects the site, separating the western and eastern land parcels, which will be connected via HDD.

- 2.7 The proposed haul route is anticipated to utilise the M1 Motorway, located to the south of the Proposed Development.
- 2.8 For Site Access 1, construction traffic will exit the M1 at Junction 10 (Drogheda North) and proceed eastbound onto the N51/R166 for approximately 1.5km. At Rosehall roundabout, vehicles will take the first exit onto the R132 and continue northbound for approximately 4km before turning left into Site Access 1. On exit from Site Access 1, vehicles will turn left and travel in a northern direction onto the M1 at Junction 11 (Monasterboice). This will result in no construction vehicles having to cross the oncoming lane of traffic on entrance and exit from Site Access 1, as shown in **Figure 2.1**.
- 2.9 For Site Access 2, vehicles will exit the M1 at Junction 10 (Drogheda North) and proceed eastbound onto the N51/R166 for approximately 0.6km. At the roundabout, vehicles will take the first exit onto the L6322 and continue for approximately 3.2km before turning right onto the LT6322. Traffic will then proceed eastbound for approximately 0.3km before turning left onto the LT63121-1, continuing for approximately 0.8km prior to turning left into Site Access 2, as shown in **Figure 2.1**.

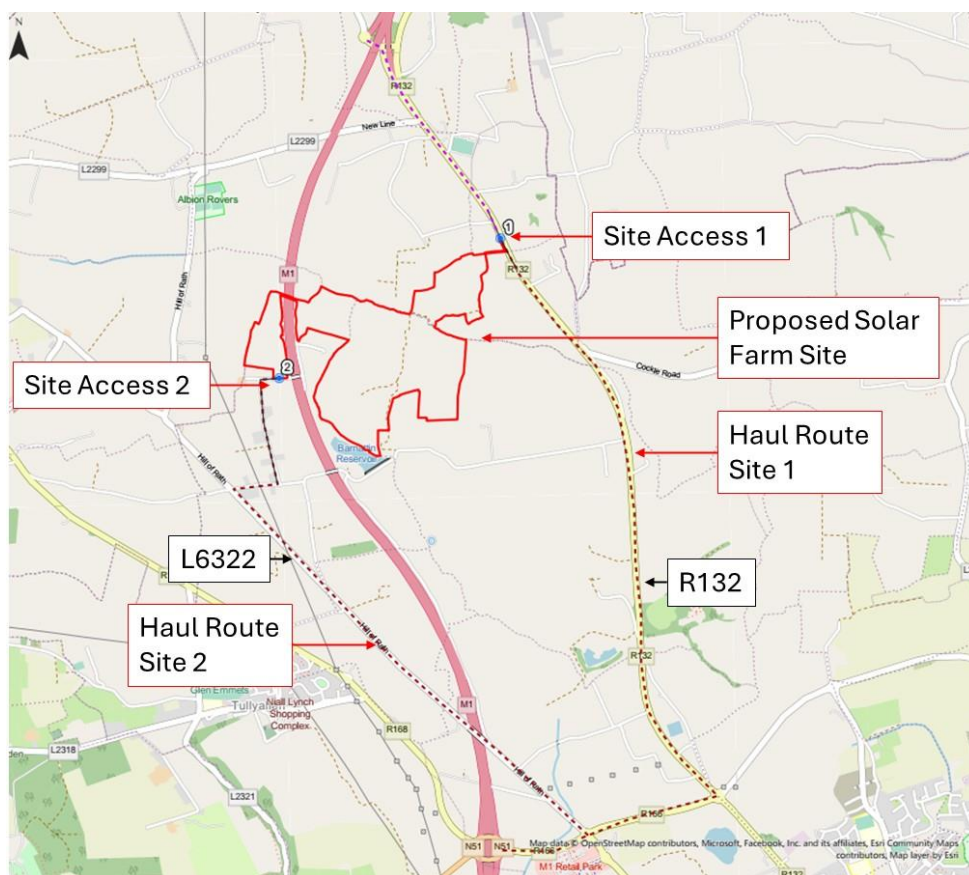


Figure 2.1: Site and Haul Route Locations

- 2.10 The R132 at Site Access 1 is subject to a 100km/h speed limit, while the L6322 is subject to a 60km/h limit.

2.11 In the CTMP, it is noted that in some areas along the route, the L6322, LT6322 and LT63121-1 narrow in width to below 5.5m. Therefore, nine passing bays have been proposed, with 3no. located on the L6322, and 6no. on the LT6322 and LT63121-1. The location of the passing bays are shown in **Figure 2.2**.

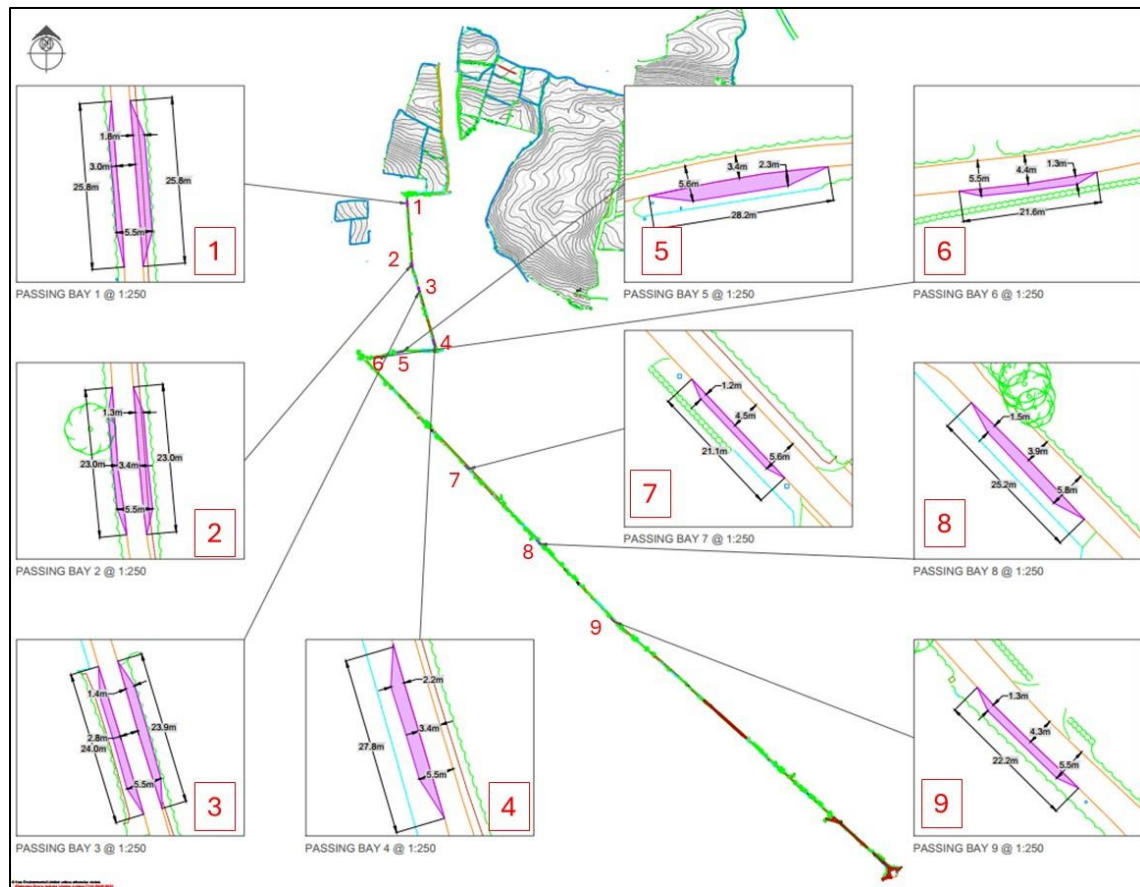


Figure 2.2: Passing Bay Locations

2.12 Neo Environmental Limited have provided the following drawings and reports;

- Figure 5: Indicative Infrastructure Layout (Overall)
- Figure 5.1: Proposed Haul Route
- Figure 5.2: Swept Path Analysis 1
- Figure 5.3: Swept Path Analysis 2
- Figure 5.4: Visibility Splay 1
- Figure 5.5: Visibility Splay 2
- Figure 5.6: Passing Bay Assessment
- Figure 5.7: Passing Bay Detail
- Outline Construction Traffic Management Plan

2.13 No departure from standards have been highlighted by the Design Team. The Design Team also confirmed that all the road works, including the passing bays, are considered permanent rather than temporary works. However, the audit has considered the haul routes during the construction stage, as outlined in the RFI from An Coimisiún Pleanála.

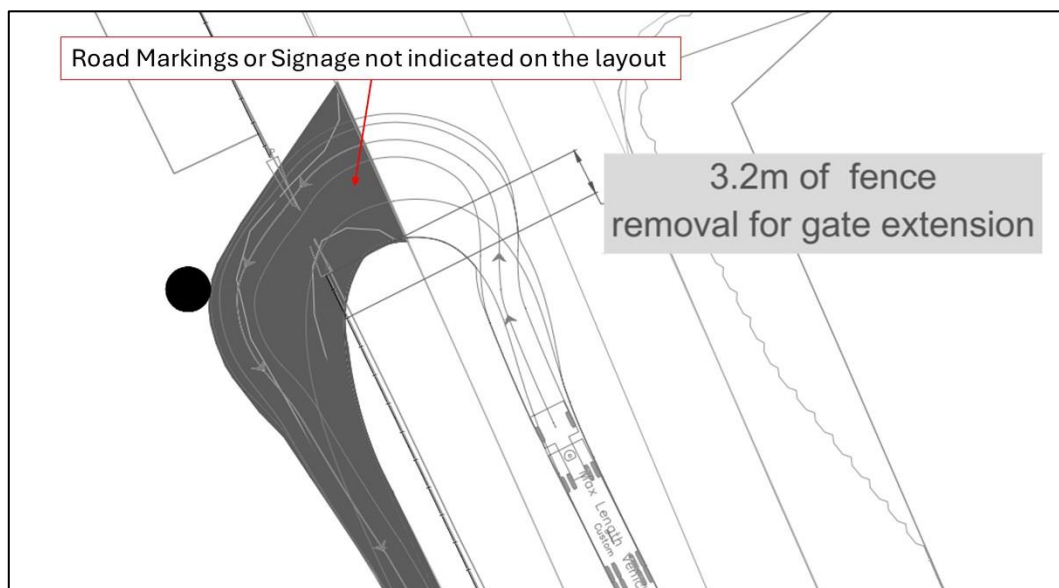
3.0 ITEMS RAISED IN THIS STAGE 1 ROAD SAFETY AUDIT

3.1 Lack of Permanent Access Arrangements

Problem

The proposed junction layouts for the permanent access arrangements, at both Site Access 1 and Site Access 2 have not been submitted. The drawing provided does not include the full access design details typically associated with a standard Roads Layout drawing, including road markings, signage, and other permanent traffic control measures.

In the absence of appropriate road signage and markings, there is potential for driver uncertainty in relation to permitted access and egress manoeuvres, which could result in vehicle conflict and collision.



No Road Markings or Signage Provided
(Drawing No. NEO01191_054I_A Figure 5.2)

Recommendation

Detailed permanent access junction layouts (at both Site Access 1 and Site Access 2) should be provided for the operational stage of the development, when maintenance personnel will require regular access to the site.

3.2 Lack of Temporary Traffic Management Measures

Problem

Construction of the proposed development is anticipated to take place over six months. However, no Temporary Traffic Management (TTM) measures have been outlined. Road users will need to be adequately informed of the location of site access points and the likelihood of increased HGV activity along the route. In the absence of appropriate temporary traffic management arrangements and advance warning signage, there is a risk of collision, particularly at the site access locations.

Recommendation

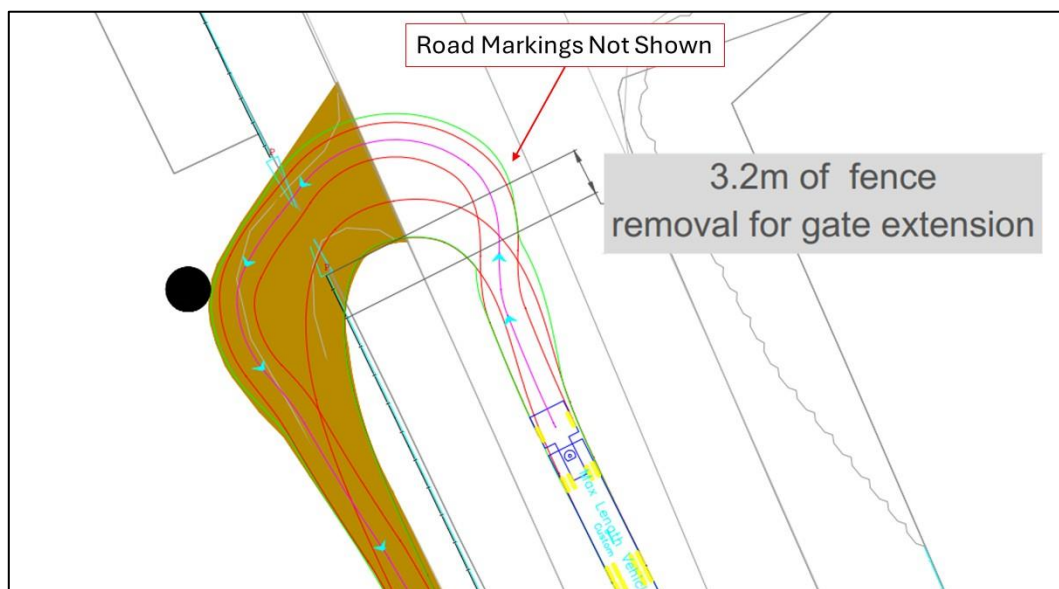
Temporary traffic management measures and associated signage should be developed and implemented for the duration of the construction phase, in accordance with Part 8 of the Traffic Signs Manual (TSM).

3.3 Autotracking at Site Access 1

Problem

It is proposed that HGVs will enter Site Access 1 via a left-turn manoeuvre. To facilitate this movement, approximately 3.2m of existing boundary fencing will be removed.

However, HGVs are subsequently required to undertake a 180-degree turning manoeuvre within the site using the internal road layout. Autotrack analysis indicates that, in order to complete this manoeuvre, an HGV may need to overrun lane markings, encroach onto the hatched area, or potentially track into the opposing southbound traffic lane. This interaction could give rise to a risk of vehicle conflict and potential collision.



Autotracking of Site 1 (Drawing No. NEO01191_054I_A Figure 5.2)

Recommendation

The access should be designed to ensure that all HGV movements can be accommodated without overrunning lane markings or encroaching into opposing traffic lanes.

3.4 Exit Visibility at Site Access 1

Problem

Exit visibility to the left may be obscured by the existing earth bund. Although it is noted in the CTMP that *“on exit from Site Access 1, vehicles will turn left and travel in a northern direction onto the M1 at Junction 11”*, exit visibility to the left should be provided, particularly given that service and maintenance vehicles will use this access during the operational phase. A reduced exit visibility could result in a vehicle turning from a side road, onto the major road carriageway when it is unsafe to do so, resulting in a collision.



Exit Visibility to the Left at Site Access 1

Recommendation

Exit visibility to the left should be reviewed and verified to ensure that adequate sightlines are achieved in accordance with the relevant design standards for a 100km/hr design speed.

3.5 Banning Right Turn Movements at Site Access 1

Problem

It is proposed that HGVs will egress from Site Access 1 via a left-turn manoeuvre only. However, no details have been provided to demonstrate how the prohibition of right-turn movements will be effectively enforced. Given the presence of an extensive solid hatched median along much of the R132, motorists would not reasonably anticipate right-turning movements emerging from a side road, with the risk of a collision.



Existing R132 Road Carriageway including a Solid Hatched Median (Google Image)

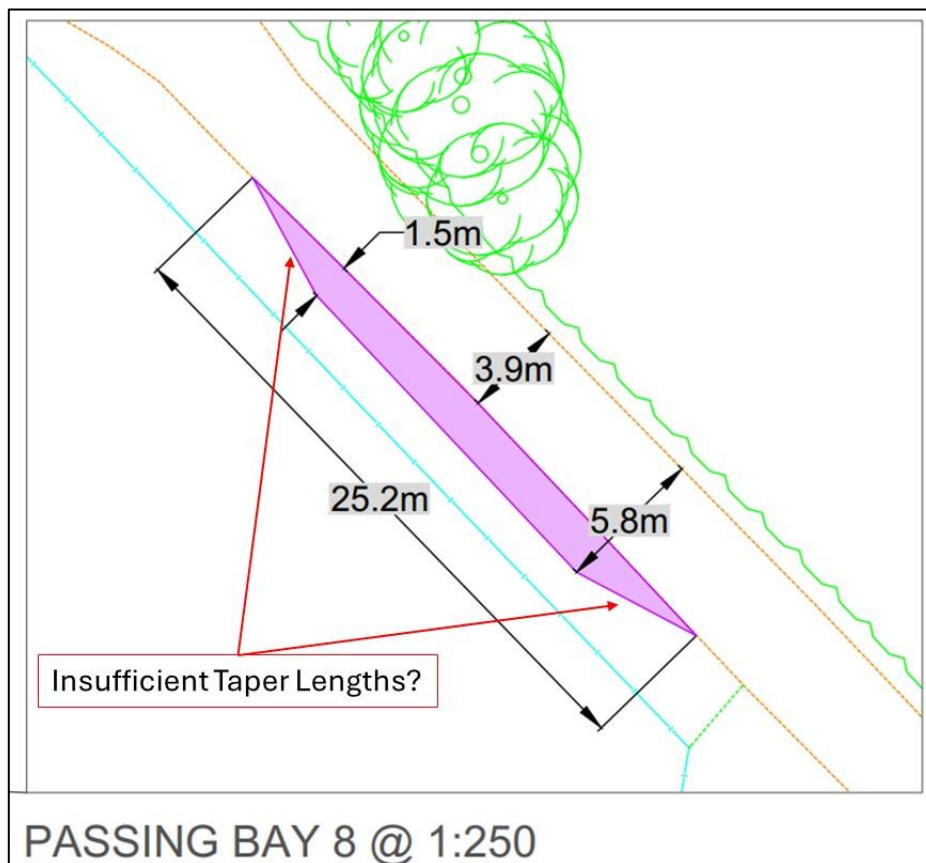
Recommendation

Measures to prohibit HGVs from undertaking right-turn movements upon exit from the site should be clearly set out and detailed.

3.6 Passing Bays

Problem

The proposed entry and exit transitional taper lengths to the passing bay appear to be insufficient. Inadequate taper provision may result in abrupt lateral vehicle movements when entering and exiting the passing bay, leading to sharp weaving manoeuvres. This could increase the likelihood of vehicles encroaching into the opposing carriageway, particularly on exit from the passing bay, thereby resulting in a side-swipe or head-on collision.



Passing Bay Taper Lengths (Drawing No. NEO01191_071I_B Figure 5.6)

Recommendation

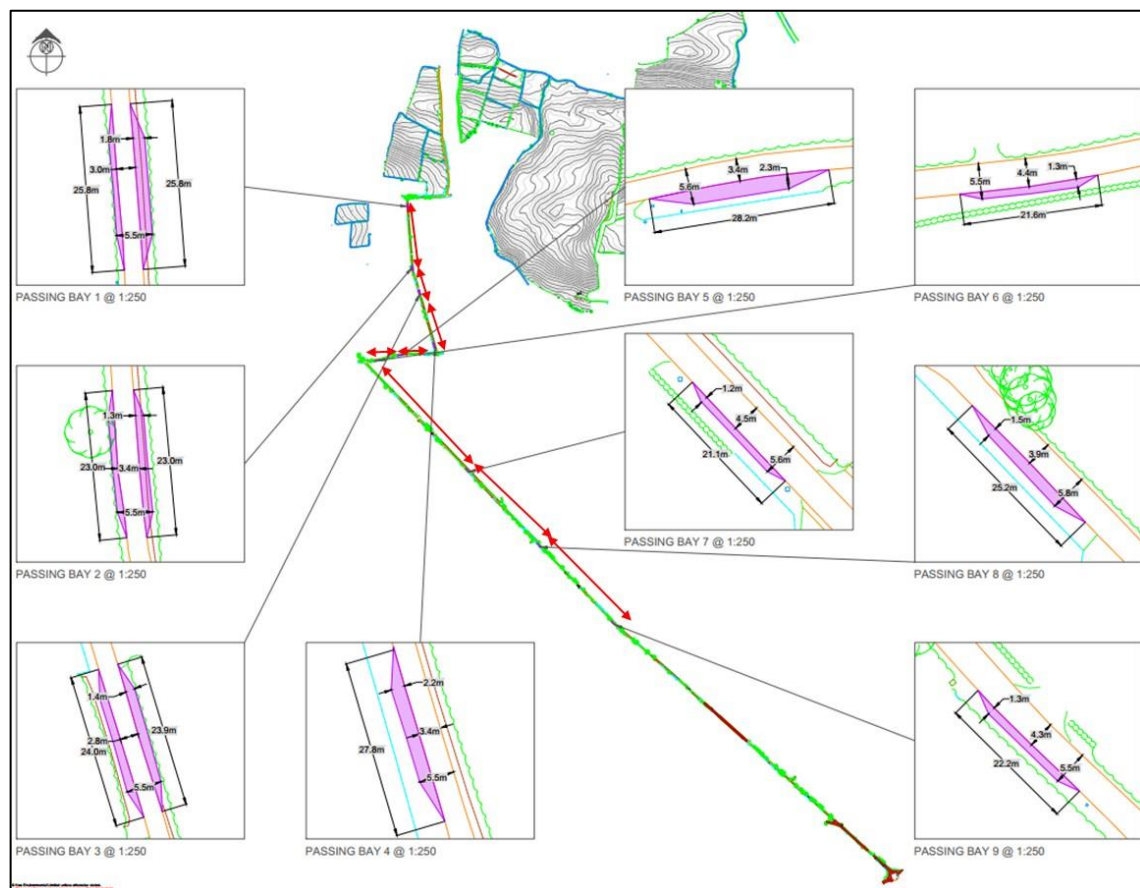
Appropriate Taper Lengths should be provided at the Passing Bays.

3.7 Passing Bay Locations

Problem

The location of passing bays should be arranged so that at least one passing bay is visible from any point along the road, and that adjacent passing bays are inter-visible. Where passing bays are not appropriately located to achieve this level of visibility, there is a risk during the construction phase that two large HGVs may meet without adequate manoeuvring space, potentially resulting in collision or vehicles being forced into the adjoining verge or drainage ditch.

Furthermore, appropriately located passing bays are necessary to ensure that, during the construction phase, HGVs do not use private accesses to facilitate passing manoeuvres.



Passing Bay Locations

Recommendation

An assessment should be undertaken of the proposed passing bay locations to ensure that, where the carriageway width narrows to less than 5.3 m, at least one passing bay is visible from any point along the route. In addition, areas not intended for passing, such as private accesses and grassed verges, should be clearly delineated with hazard marker posts, subject to agreement with the relevant landowners.

3.8 Passing Bays at Open Drains

Problem

The CTMP acknowledges that certain passing bays will require the piping of roadside ditches to facilitate their construction, with detailed culvert design to be developed post-consent. However, these works are not illustrated on the submitted scheme drawings. In the absence of defined design details, there is a risk that the proposed culverts may be inadequately sized or insufficiently designed, which could result in edge instability and increase the potential for a vehicle to leave the carriageway and enter the ditch, leading to a single-vehicle collision.



Existing Open Drain and Ditch at Passing Bay Location 1

Recommendation

The proposed culvert design should be such that new hazards are not provided for road users.

3.9 L6322 / LT6322 Priority Junction

Problem

There is a very sharp turn at the junction of the L6322 and LT6322, with a slight skew in the angle at which it meets the L6322 mainline. The tracking drawings show a 16.5m articulated vehicle accessing the development. It is not clear if such a vehicle would be able to turn into and from this junction without significantly overrunning the opposing lane or into the verge, which could result in a collision.



L6322 / LT6322 Priority Junction (Google Image)

Recommendation

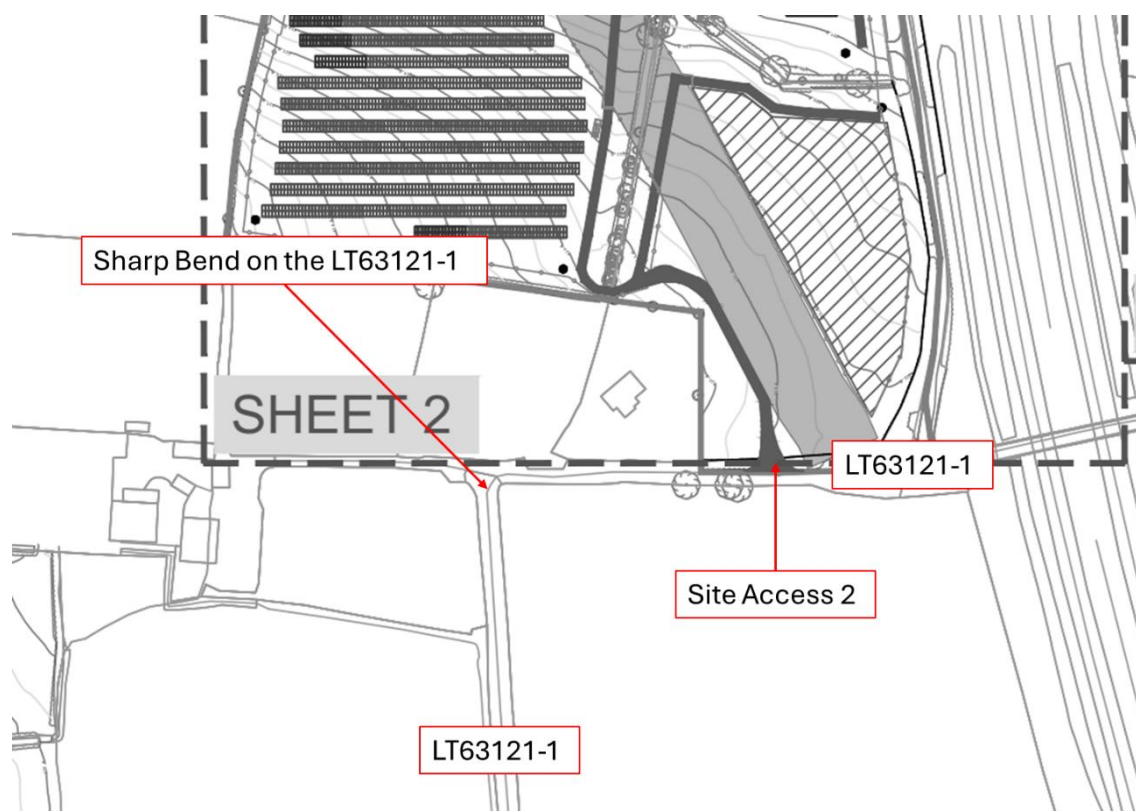
Swept path analysis should be undertaken for this junction to demonstrate that the proposed 16.5m articulated vehicles can safely negotiate the turn without encroachment into verges.

Should the analysis identify that the manoeuvre cannot be accommodated safely within the existing geometry, smaller delivery vehicles or implementing appropriate traffic management measures during delivery times may be required.

3.10 LT63121-1 Road Alignment

Problem

There is a very sharp turn on the LT63121-1 Road Alignment, close to Site Access. The tracking drawings show a 16.5m articulated vehicle accessing the development. It is not clear if such a vehicle would be able to turn through this tight turn without significantly overrunning the opposing lane or into the verge, which could result in a collision.



***Sharp turn on the LT63121-1 Road Alignment
(Drawing No: NEO01191_071I_B Figure 5.6)***

Recommendation

Swept path analysis should be undertaken at this location to demonstrate that the proposed 16.5m articulated vehicle can safely negotiate the turn without encroachment into the verges.

Should the analysis identify that the manoeuvre cannot be accommodated safely within the existing geometry, smaller delivery vehicles or implementing appropriate traffic management measures during delivery times may be required.

3.11 LT6322 / LT63121-1 Priority Junction

Problem

Exit visibility to the left may be obscured by the existing hedge. A reduced exit visibility could result in a vehicle turning from a side road, onto the major road carriageway when it is unsafe to do so, resulting in a collision.



Exit Visibility to the Left at LT6322 / LT63121-1 Priority Junction

Recommendation

Exit visibility to the left should be reviewed and verified to ensure that adequate sightlines are achieved in accordance with the relevant design standards.

3.12 Condition of the LT63121-1 Road Surface

Observation

It is acknowledged in the CTMP that the Applicant will undertake pre- and post-construction condition surveys of the R132 and LT63121-1. However, the existing surface condition of the LT63121-1 is poor, with a number of significant potholes present. The passage of large HGVs during the construction phase is likely to exacerbate this existing deterioration. Accordingly, any reinstatement works should address not only construction-related damage but also ensure that the existing carriageway defects are appropriately repaired.



Existing LT63121-1 Road Surface

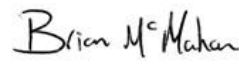
3.13 Junction 11 (Monasterboice)

Observation

The Junction 11 (Monasterboice) on the M1 only allows for northbound traffic from the R132. Therefore this may increase the likelihood for those vehicles wishing to go southbound, turning out right from the development site.

4.0 Audit Team Statement

- 4.1 We certify that the site was visited and that this audit has been carried out in accordance with the Transport Infrastructure Ireland Road Safety Audit Guidelines GE-STY-01027 and Standard GE-STY-01024.
- 4.2 The Road Safety Audit has been carried out with the sole purpose of identifying any features of the design that could be removed or modified in order to improve the safety of the scheme.
- 4.3 The audit has been carried out by the persons named below who have not been involved in any design work on this scheme as a member of the Design Team.

Name:	Norman Bruton	Signed	
Position:	Audit Team Leader	Date:	13.02.2026
Name:	Brian McMahon	Signed	
Position:	Audit Team Member	Date:	13.02.2026

Appendix A - List of Material Provided by the Design Team

- Figure 5: Indicative Infrastructure Layout (Overall)
- Figure 5.1: Proposed Haul Route
- Figure 5.2: Swept Path Analysis 1
- Figure 5.3: Swept Path Analysis 2
- Figure 5.4: Visibility Splay 1
- Figure 5.5: Visibility Splay 2
- Figure 5.6: Passing Bay Assessment
- Figure 5.7: Passing Bay Detail
- Outline Construction Traffic Management Plan

Appendix B - Road Safety Audit Feedback Form

Scheme: Drybridge Solar Farm

Stage: 1 Road Safety Audit

Date Site Visit Completed: 04/02/2026

Paragraph No. in Safety Audit Report	To be Completed by Designer			To be completed by Audit Team Leader
	Problem Accepted (Yes / No)	Recommended Measure Accepted (Yes / No)	Describe Alternative Measure(s). Give reasons for not accepting recommended measure	Alternative Measures accepted by auditors (Yes / No)
3.1	Yes	Yes		
3.2	Yes	Yes		
3.3	Yes	Yes		
3.4	Yes	Yes		
3.5	Yes	Yes		
3.6	Yes	Yes		
3.7	Yes	Yes		
3.8	Yes	Yes		
3.9	Yes	Yes		
3.10	Yes	Yes		
3.11	Yes	Yes		

Name: Tom Saddington

Signed



Position: Design Team Leader

Date:

24/02/2026

Name: Norman Bruton

Signed



Position: Audit Team Leader

Date:

26/02/2026

Name: Jack Vaughan

Signed



Position: Employer

Date:

26/02/2026

Appendix C – Problem Locations

