

P e l l F r i s c h m a n n

Glendye Wind Farm Grid Connection

Transport Assessment

October 2025

10109878

This report is to be regarded as confidential to our Client and is intended for their use only and may not be assigned except in accordance with the contract. Consequently, and in accordance with current practice, any liability to any third party in respect of the whole or any part of its contents is hereby expressly excluded, except to the extent that the report has been assigned in accordance with the contract. Before the report or any part of it is reproduced or referred to in any document, circular or statement and before its contents or the contents of any part of it are disclosed orally to any third party, our written approval as to the form and context of such a publication or disclosure must be obtained.

Report Ref.	123008-Eiar-A13.1-0.1.1 Appendix 13.1 - Transport Assessment					
File Path	https://pellf.sharepoint.com/sites/EdinburghOfficeTeam/Shared Documents/General/Projects/10109878 ASH Glendye/01 - WIP/Reports/123008-EIAR-A13.1-0.1.1 Appendix 13.1 - Transport Assessment.docx					
Rev	Suit	Description	Date	Originator	Checker	Approver
1		Transport Assessment – Draft for Client Comment	13/06/2025	G Buchan	S Cochrane	G Buchan
2		Draft	08/08/2025	G Buchan	S Cochrane	G Buchan
3		Issue	04/10/2025	G Buchan	S Cochrane	G Buchan
Ref. reference. Rev revision. Suit suitability.						

Prepared for

ASH design+assessment

Suite 2/3,
Queens House,
19 St Vincent Place,
Glasgow,
G1 2DT

Prepared by

Pell Frischmann

93 George Street
Edinburgh
EH2 3ES



Pell Frischmann

Contents

1	Introduction	1
1.1	Purpose of the Transport Assessment	1
1.2	TA Structure	1
2	Site Background	2
2.1	Site Location and Proposed Development	2
3	Transport Policy Review	3
3.1	Introduction	3
3.2	National Policy and Guidance	3
3.3	Local Policy and Guidance	4
3.4	Conclusion	4
4	Study Methodology	5
4.1	Introduction	5
4.2	Project Phases – Transport Overview	5
4.3	Scoping Discussions	5
5	Baseline Conditions	6
5.1	Study Area	6
5.2	Pedestrian and Cyclist Networks	8
5.3	Road Access	8
5.4	Existing Traffic Conditions	10
5.5	Accident Review	12
5.6	Future Baseline	12
6	Construction Trip Generation and Distribution	14
6.1	Trip Derivation	14
6.2	Peak Traffic Flows	16
6.3	Abnormal Indivisible Loads	16
7	Construction Traffic Impact Assessment	17
7.1	Proposed Development	17
8	Proposed Traffic Mitigation Measures	19
8.1	Construction Phase	19
8.2	Access Improvements	20
8.3	Public Information	20
8.4	Operational Phase Mitigation	20
9	Summary & Conclusions	21

Figures

Figure 1	Site Location	2
Figure 2	Construction Access Locations	6
Figure 3	Study Area	7
Figure 4	Traffic Count Location Points	11

Tables

Table 1	24-hour Average Daily Traffic Data (2025)	11
---------	---	----

Table 2 Accident Summary	12
Table 3 24-hour Average Daily Traffic Data (2027).....	12
Table 4 Construction Traffic Programme (Two Way Flows)	14
Table 5 Peak Construction Traffic Flows	16
Table 6 2027 Base + Development Traffic Impact	17
Table 7 2027 Daily Traffic Capacity Review	17

Annexes

Annex A: Access Junction Drawings

1 Introduction

1.1 Purpose of the Transport Assessment

Pell Frischmann (PF) has been commissioned by ASH design+assessment, on behalf of Scottish & Southern Electricity Networks Transmission (SSEN Transmission), to undertake a Transport Assessment (TA) for a new Overhead Line (OHL) allowing the connection of Glendye Wind Farm to the wider electrical grid, referred to hereafter as the 'Proposed Development'.

No liability is accepted for the use of all or part of this report by third parties. This report is © Copyright of PF 2025 and SSEN Transmission. No section of this report may be reproduced without prior written approval.

The TA identifies the key transport and access issues associated with the Proposed Development and the likely traffic impacts in the Study Area. The TA identifies where mitigation works may be required to accommodate the predicted traffic impacts associated with the Proposed Development, to be developed during detailed design.

1.2 TA Structure

Following this introduction, the TA is structured as follows:

- Chapter Two describes the Site background and Proposed Development;
- Chapter Three reviews the relevant transport and planning policies;
- Chapter Four sets out the methodology used within this assessment;
- Chapter Five describes the baseline transport conditions;
- Chapter Six describes the trip generation and distribution of traffic in the Study Area;
- Chapter Seven summarises the traffic impact assessment;
- Chapter Eight considers mitigation proposals for development related traffic within the study network; and
- Chapter Nine summarises the findings of the TA and outlines the key conclusions.

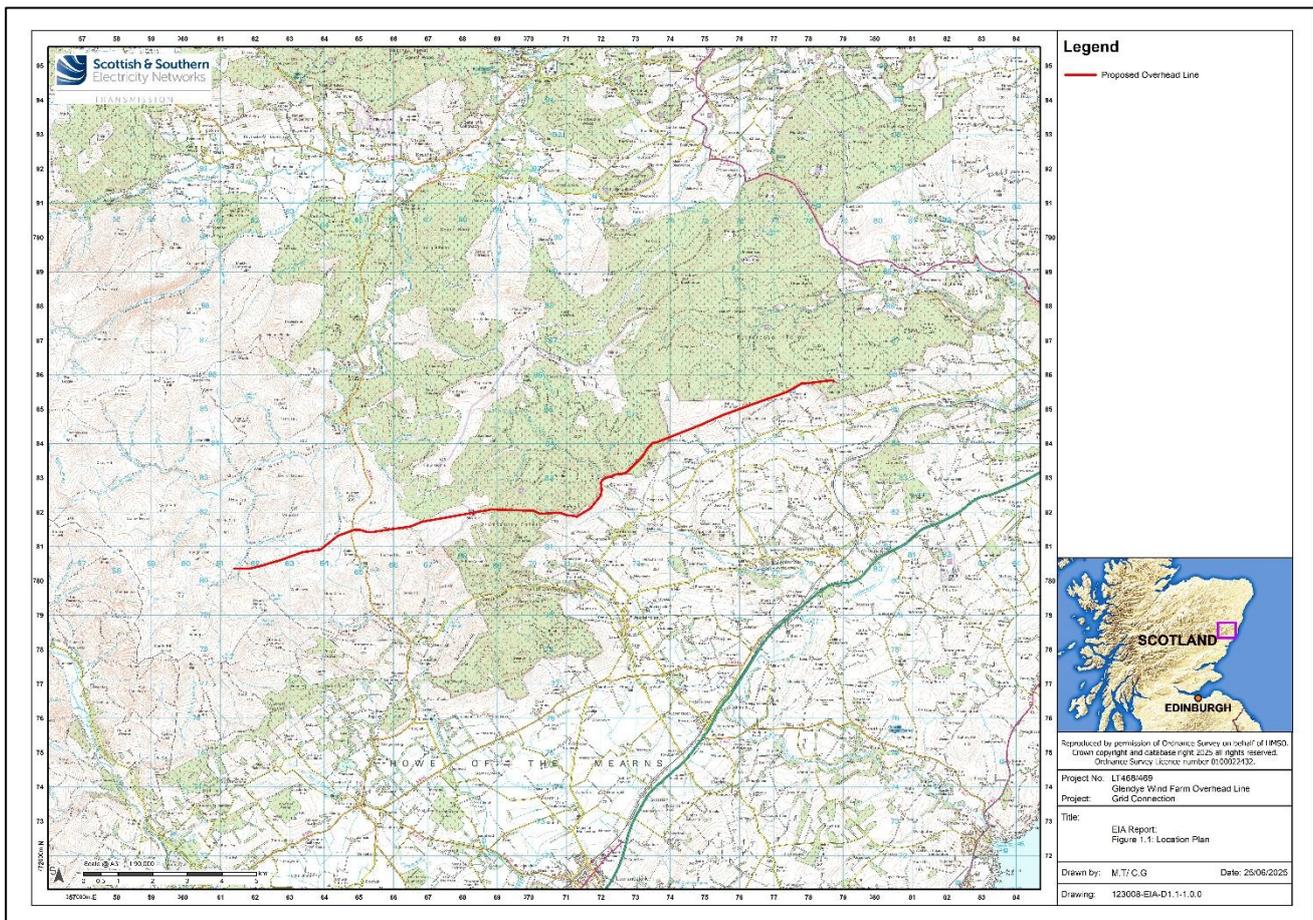
2 Site Background

2.1 Site Location and Proposed Development

The Proposed Development is a new 132 kV OHL that will facilitate a connection between the proposed substation at Glendye Wind Farm, located approximately 8 kilometres (km) Northwest of Fettercairn, to the existing Fetteresso substation, 6.5 km west of Stonehaven.

The Proposed Development is located fully within the Aberdeenshire Council (AC) local authority boundary, is approximately 19 km in length and comprises a 132 kV OHL using steel trident poles. The location of the Proposed Development is shown in **Figure 1** below.

Figure 1 Site Location



The Proposed Development will not have a fixed operational life. As explained in later sections, it is considered that the traffic impacts associated with the construction phase of the Proposed Development represents an assessment of the worst-case scenario, as the operational phase of a grid line generates insignificant traffic flows, associated with general maintenance works.

3 Transport Policy Review

3.1 Introduction

This part of the TA provides an overview of the relevant national and local transport planning policy and guidance.

3.2 National Policy and Guidance

3.2.1 3.2.1 National Planning Framework 4 (2023)

The Revised Draft National Planning Framework 4 (RDNPF4) was laid in Parliament on 08 November 2022. The RDNPF4 was approved by Scottish Parliament on 11 January 2023 and was then passed to Scottish Ministers who adopted the National Planning Framework 4 (NPF4)¹ on 13 February 2023.

With regards to traffic and transport and the Proposed Development, Policy 11: Energy within the NPF4 notes that:

“a) Development proposals for all forms of renewable, low-carbon and zero emissions technologies will be supported. These include:

ii. enabling works, such as grid transmission and distribution infrastructure;

iii. energy storage, such as battery storage and pumped storage hydro;

e) In addition, project design and mitigation will demonstrate how the following impacts are addressed:

iii. public access, including impact on long distance walking and cycling routes and scenic routes;

vi. impacts on road traffic and on adjacent trunk roads, including during construction;

xi. proposals for the decommissioning of developments, including ancillary infrastructure, and site restoration;

xiii. cumulative impacts.”

3.2.2 Planning Advice Note (PAN) 75

Planning Advice Note (PAN) 75²: Planning for Transport provides advice on the requirements for Transport Assessments. The document notes that:

“... transport assessment to be produced for significant travel generating developments. Transport Assessment is a tool that enables delivery of policy aiming to integrate transport and land use planning.”

“All planning applications that involve the generation of person trips should provide information which covers the transport implications of the development. The level of detail will be proportionate to the complexity and scale of the impact of the proposal...For smaller developments the information on transport implications will enable local authorities to monitor potential cumulative impact and for larger developments it will form part of a scoping exercise for a full transport assessment. Development applications will therefore be assessed by relevant parties at levels of detail corresponding to their potential impact.”

¹ Scottish Government, National Planning Framework, 2024. Available online at <https://www.gov.scot/publications/national-planning-framework-4/>

² Scottish Government, PAN 75 Planning for Transport, 2005. Available at <https://www.gov.scot/publications/planning-advice-note-pan-75-planning-transport/>

3.2.3 Transport Assessment Guidance (2012)

Transport Scotland's Transport Assessment Guidance³ was published in 2012. It aims to assist in the preparation of TA reports for development proposals in Scotland, such that the likely transport impacts can be identified and dealt with as early as possible in the planning process. The document sets out requirements according to the scale of development being proposed.

The document notes that a TA will be required where a development is likely to have significant transport impacts but that the specific scope and contents of a TA will vary for developments, depending on location, scale and type of development.

3.3 Local Policy and Guidance

3.3.1 Aberdeenshire Local Plan

The current Aberdeenshire Local Development Plan (LDP), adopted in January 2023⁴, does not directly refer to OHL developments. However, relevant policy context includes:

Renewable energy and amenity (Policy C2.4): *“Unacceptable significant adverse effects on the amenity of dwelling-houses, such as from noise, or on tourism and recreation interests...should also be avoided.”*

General renewable energy guidance (Policy C2.8): *“Other renewable energy developments are required to relate well to the source of the renewable energy required for operation and satisfactory steps must be taken to mitigate any negative impacts on occupiers of affected properties.”*

While these policies do not explicitly reference overhead lines, they establish clear expectations for minimising adverse effects and ensuring mitigation measures for developments with potential amenity and visual impacts.

3.4 Conclusion

The above summaries of policy statements are considered the most relevant to this TA.

³ Transport Scotland, Transport Assessment Guidance, 2012. Available online at https://www.transport.gov.scot/media/4591/planning_reform_-_dpmtag_-_development_management_dpmtag_ref__17_-_transport_assessment_guidance_final_-_june_2012_1.pdf

⁴ Aberdeenshire Council, Local Development Plan, 2023. Available online at <https://www.aberdeenshire.gov.uk/planning/plans-and-policies/ldp-2023>

4 Study Methodology

4.1 Introduction

The two key phases of the life of the Proposed Development are as follows:

- The Construction Phase; and
- The Operational Phase.

4.2 Project Phases – Transport Overview

Of the aforementioned phases, the construction phase is considered to have the greatest impacts in terms of transport. Construction plant, bulk materials and construction materials will be transported to the Proposed Development, and these movements may potentially cause a significant increase in traffic on the network within the Study Area. It should be noted however that the construction effects are temporary and transitory in nature.

The operational phase is restricted to trips associated with the occasional maintenance of the Proposed Development which would generate significantly lower volumes of traffic, and which are not considered to be in excess of daily traffic variation levels on the road network. As such, no separate assessment for the operational phase is considered necessary.

4.3 Scoping Discussions

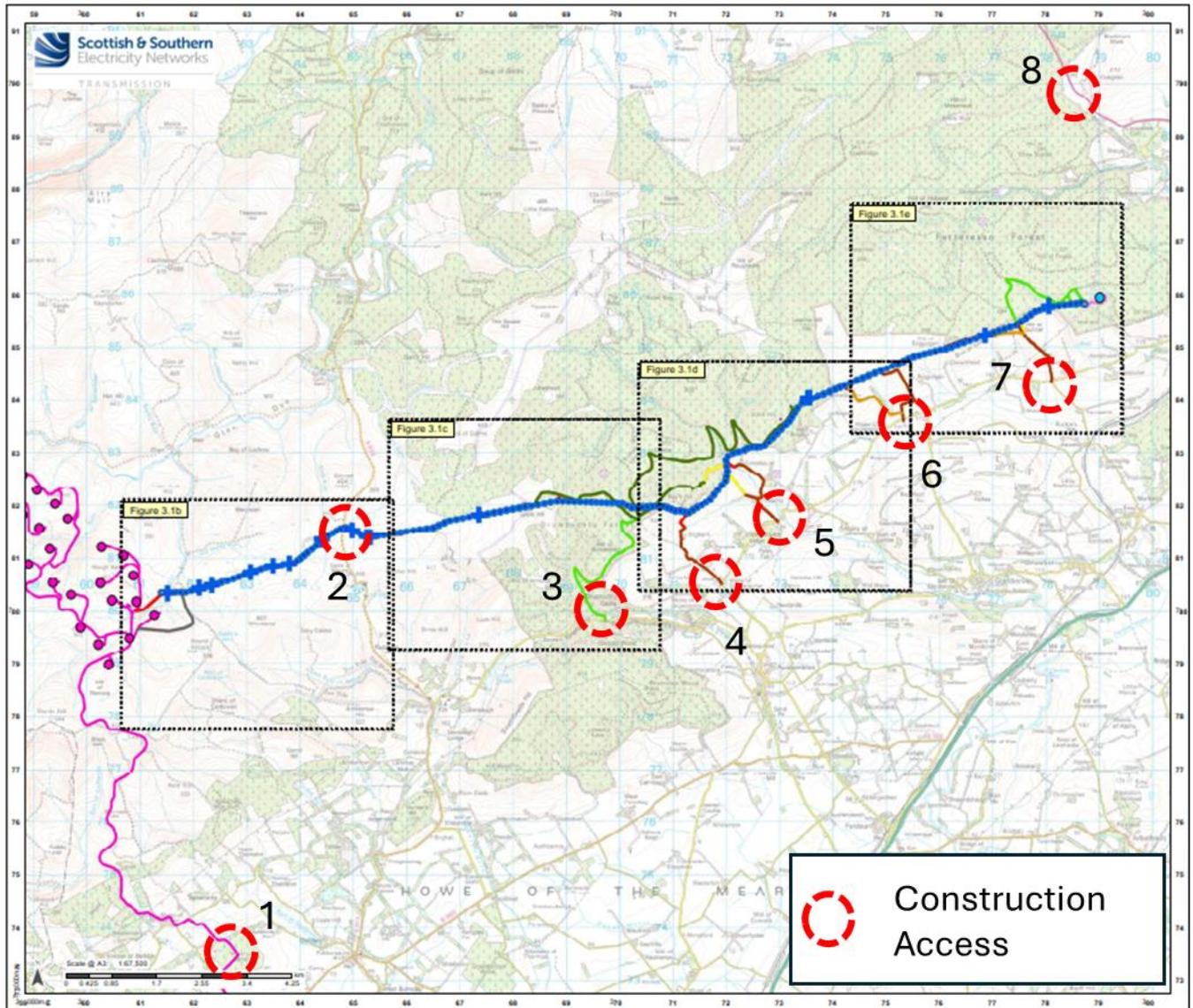
The Applicant submitted a request for a Scoping Opinion to the Scottish Ministers in respect of the Environmental Impact Assessment (EIA) in November 2024 which included a section considering traffic and transport. A full review of that scoping opinion and other correspondence relating to the scope of the study including pre-application advice is provided in the **Chapter 13: Traffic and Transport**.

5 Baseline Conditions

5.1 Study Area

Access to the Proposed Development will be taken directly from the existing public road network along the length of the Proposed Development. The locations of the construction accesses are illustrated in **Figure 2**.

Figure 2 Construction Access Locations



Further, more detailed access plans are provided in **Annex A**. The proposed access points are:

1. Access via the Glendye Wind Farm access track and junction;
2. Access via the B974 Cairn o' Mount Road;
3. Access from the C7K, via the Drumtochty Castle forestry access track;
4. Access from the C1K, via the unclassified road at Mains of Glenfarquhar;
5. Access from the C1K, via the existing access to Tipperty Farm;
6. Access from the C1K, via existing access tracks near Bogjuran Farm;
7. Access from the U151K at Hill of Quithel; and
8. Access from the A957 Slug Road at the access to Fetteresso Substation.

The proposed Study Area is as follows:

- B966, southwest of Fettercairn;
- C2K Lang Stracht;
- B974 Cairn o' Mount; between the proposed construction access and Banchory;
- C7K between Drumtochty and Auchenblae;
- Kintore Street in Auchenblae;
- C1K between Mains of Glenfarquhar and Stonehaven;
- A957 Slug Road between Stonehaven and Crathes;
- A93 between Banchory and Crathes;
- B9077 between the A957 and the Chap Quarries; and
- A90 between Stonehaven and Stracathro.

5.2 Pedestrian and Cyclist Networks

A review of AC Core Paths has been undertaken (www.gis.aberdeenshire.gov.uk/maps/). The alignment of the Proposed Development does not intersect with any existing Core Paths. Scottish Hill Tracks 196, 197 and 198 are intersected (discussed further in **Appendix 12.1 – Outdoor Access Management Plan**).

A review of Sustrans' National Cycle Network (NCN) map (<https://www.sustrans.org.uk/national-cycle-network>) indicates that no NCN routes are impacted by the alignment of the Proposed Development.

5.3 Road Access

B966

The B966 runs from Brechin to the A90 via Edzel and Fettercairn to the south of the Proposed Development. The road provides the main point of access for Glendye Wind Farm and is approximately 6.5 metres (m) in width and is considered suitable for Heavy Goods Vehicle (HGV) use.

C2K Lang Stracht

The C2K Lang Stracht links the A90 to the B966 and was the primary access road for the RAF Edzel airbase. The road is approximately 6.5 m in width and provides the construction access connection between the A90 and the B966 for Glendye Wind Farm. The road is considered suitable for HGV access.

B974

The B974 provides access from the A90 to Banchory via Fettercairn, Cairn o' Mount and Strachan. The road is of reasonable standard, circa 6.5 m in width. The road is considered suitable for HGV access.

C7K

The C7K, Glensaugh, runs from its junction with the B974, to the west of the Site, to its connection with Glen Road, to the east. The road comprises mainly of single-track road. There are a number of passing places to the east of the Proposed Development.

Approximately 20 m to the east of its junction with the B974, there is a bridge which appears to be in poor condition. Another alternative bridge is located adjacent to the main bridge and includes a warning sign which states: "WARNING Unsafe bridge do not use". As a result, HGV access from the west is not considered feasible.

Glen Road / Inverurie Street / High Street / Market Street / Kintore Street, Auchenblae

Glen Road is a narrow road which connects to the C7K Glensaugh to the north and connects to Inverurie Street to the south. Outwith Auchenblae, Glen Road is subject to the national speed limit; however, the speed limit reduces to 30 miles per hour (mph) when entering Auchenblae village.

Within Auchenblae village, Glen Road connects to Mondbodd Street / unclassified road leading to the Golf Course access via Inverurie Street, High Street, Market Square and Kintore Street, which are subject to a speed limit of 30 mph.

There are no parking restrictions along the route and there is evidence of parking on both sides of the street, which narrows the carriageway width and reduces the ability of two cars to pass each other.

C1K

The C1K connects Stonehaven with Auchenblae. The road is circa 5.5 m – 6 m in width and provides access to a number of agricultural properties along its length.

A957 Slug Road

The A957 Slug Road local distributor road operated by AC. The road provides links from the A90 at Stonehaven through to its junction with the A93 at Crathes. The road varies in its width along its length and is circa 6.5 – 7.3 m in width and capable of accommodating HGV traffic.

A93

The A93 is a district distributor road operated by AC within the Study Area that provides connections from Aberdeen through to Perth via Deeside and Glenshee. The road is approximately 7 m in width and capable of accommodating HGV traffic.

B9077

The B9077 is a local distributor road operated by AC and connects the communities of the South Deeside Road between Aberdeen and its junction with A967 Slug Road. The road is of good standard and is between 6.5 m and 7 m in width.

A90

The A90 forms the trunk road connection between Perth and Aberdeen and is operated on behalf of Scottish Ministers by Transport Scotland. The road is a dual carriageway and is generally subject to a 70 mph speed limit for car and Light Goods Vehicle (LGV) traffic, with all major junctions illuminated.

The Agreed Timber Route Map (<https://timbertf.maps.arcgis.com/>) has been developed by The Timber Transport Forum who are a partnership of the forestry and timber industries, local government, national government agencies, timber hauliers and road and freight associations. One of the key aims of the forum is to minimise the impact of timber transport on the public road network, on local communities and the environment and a way of achieving this is to categorise the roads leading to forest areas in terms of their capacity to sustain the likely level of timber haulage vehicles (i.e. HGVs). The routes are categorised into four groups, namely; 'Agreed Routes', 'Consultation Routes', 'Severely Restricted Routes' and 'Excluded Routes'.

'Agreed Routes' are categorised as routes used for timber haulage without restriction, as regulated by the Road Traffic Act 1988. A-roads are classified as 'Agreed Routes' by default unless covered by one of the other road classifications. Those links classed as 'Consultation Routes' are categorised as a route which is key to timber extraction, but which are not up to 'Agreed Route' standard. Consultation with the local authority is required, and it may be necessary to agree limits of timing, allowable tonnage etc. before the route can be used. B-roads are classified as 'Consultation Routes' by default unless covered by one of the other classifications. 'Severely Restricted Routes' are not normally to be used for timber transport in their present condition (these routes are close to being Excluded Routes). Consultation with the local authority is required prior to use. Finally, 'Excluded Routes' should not be used for timber transport in their present condition. These routes are either formally restricted, or are close to being formally restricted, to protect the network from damaging loads.

With the exception of the B966, C1K Lang Stracht and B9077, all of the roads within the Study Area are all classed as 'Agreed Routes' and as such are suitable for HGV traffic, similar to that proposed with the construction phase of the Proposed Development.

The B9077 is not listed with a classification; however it does have a number of U and C class roads leading from it that are noted as being 'Agreed Routes'. In addition, the road also has a quarry and concrete works located on it, noting that the road is suitable for HGV traffic.

The B966 and C1K Lang Stracht are being used for all of the construction traffic for Glendye Wind Farm and as such, are considered suitable for the transport of HGV traffic associated with the construction phase of the Proposed Development.

5.4 Existing Traffic Conditions

Traffic data used in the assessment has been sourced from a variety of sources, including Transport Scotland's traffic count database, The UK Department for Transport (DfT) Road Traffic database⁵, the Glendye Wind Farm planning application, other SSEN Transmission projects in the area and bespoke traffic surveys. The sources of traffic count data were as follows:

- 1 B966, SW of Fettercairn: Glendye Wind Farm planning application documents;
- 2 C2K, Lang Stracht: Glendye Wind Farm planning application documents;
- 3 B974 Cairn o' Mount: Bespoke Automatic Traffic Count Survey (ATC);
- 4 C7K East of Glensauth: Hydroglen Planning Application traffic surveys;
- 5 Kintore Street, Auchenblae: Hydroglen Planning Application traffic surveys;
- 6 C1K west of Stonehaven: Bespoke ATC;
- 7 A957 Slug Road: Bespoke ATC;
- 8 A93 Banchory: DfT traffic survey site ref. ATC00054;
- 9 A93 Crathes: DfT traffic survey site ref. 50894;
- 10 B9007: Bespoke ATC;
- 11 A90 North of Stonehaven: Transport Scotland database ref. 123488;
- 12 A90 South of Stonehaven: Transport Scotland database ref. JTC00056; and
- 13 A90 at Stracathro: DfT traffic survey site ref. 30864.

The locations of the count points are shown in **Figure 4**. The data was factored to a common base year using National Road Traffic Forecast (NRTF) growth factors to create the 2025 traffic flows.

The traffic count data allowed the traffic flows to be split into vehicle classes and the data has been summarised into cars / LGV and HGVs (i.e. all goods vehicles >3.5 tonnes gross maximum weight).

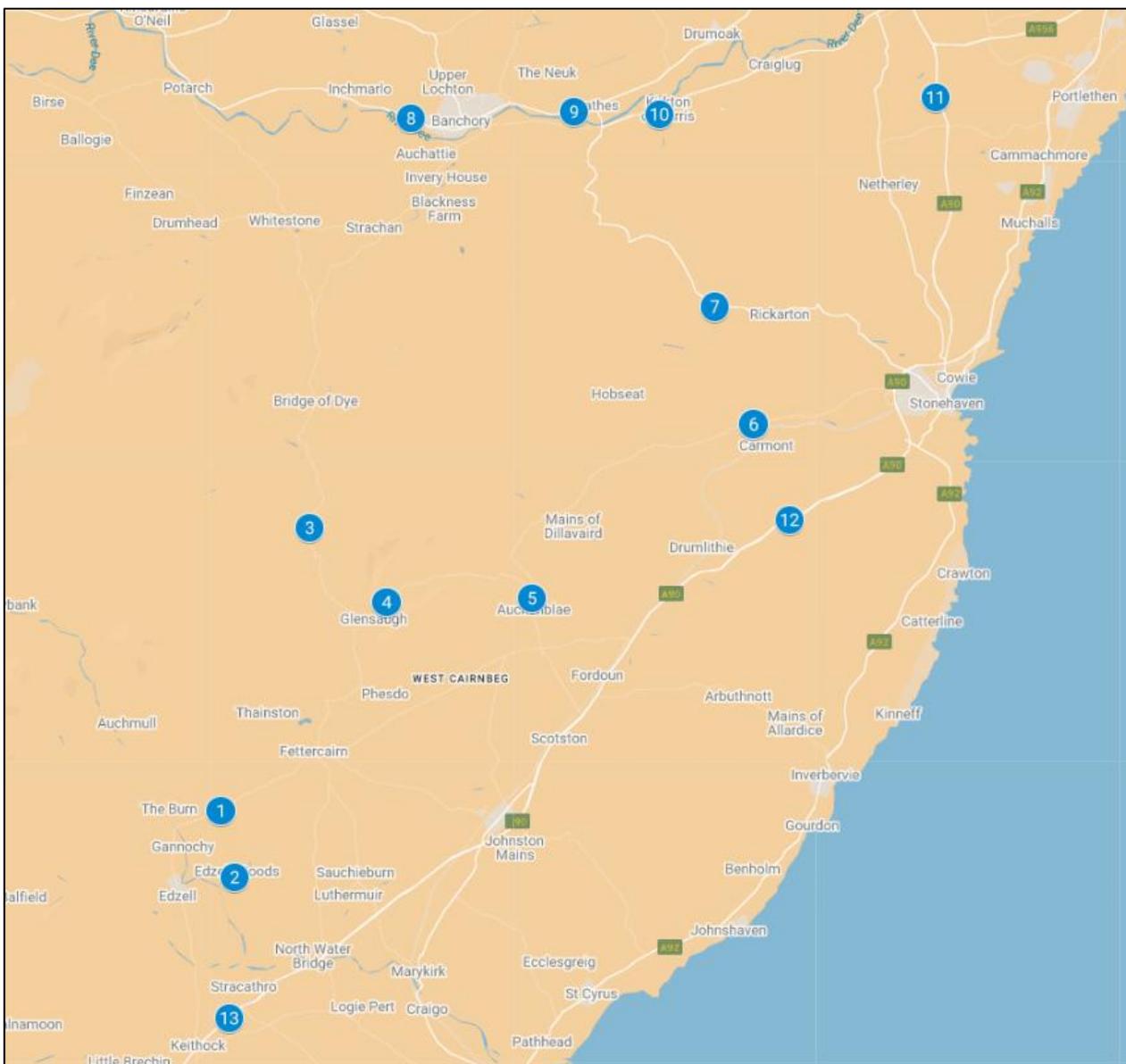
A summary of the 24-hour average daily traffic for each of the count sites is presented in **Table 1**.

⁵ Department for Transport, <https://roadtraffic.dft.gov.uk/#/6/55.254/-6.053/basemap-regions-countpoints>

Table 1 24-hour Average Daily Traffic Data (2025)

Site Ref.	Survey Location	Cars & LGV	HGV	Total
1	B966, SW of Fettercairn	941	55	996
2	C2K, Lang Stracht	876	185	1,061
3	B974 Cairn o'Mount	714	124	837
4	C7K East of Glensaugh	54	25	79
5	Kintore Street, Auchenblae	790	196	986
6	C1K west of Stonehaven	267	96	362
7	A957 Slug Road	905	311	1,216
8	A93 Banchory	3,487	489	3,977
9	A93 Crathes	6,561	299	6,861
10	B9077	3,141	149	3,289
11	A90 North of Stonehaven	12,111	1,651	13,762
12	A90 South of Stonehaven	18,337	4,845	23,182
13	A90 at Stracathro	17,424	2,419	19,843

Figure 4 Traffic Count Location Points



5.5 Accident Review

Road traffic accident data for the five-year period commencing 01 January 2019 through to the 31 December 2023 was obtained from the online resource crashmap.co.uk⁶ which uses data collected by the police about road traffic crashes occurring on British roads.

TA Guidance requires an analysis of the accident data on the road network in the vicinity of any development to be undertaken for at least the most recent three-year period, or preferably a five-year period, particularly if the Site has been identified as being within a high accident area. The statistics are categorised into three categories, namely “Slight” for damage only incidents, “Serious” for injury accidents and “Fatal” for accidents that result in a death. Whilst the Study Area has not been identified as having a high accident rate, a five-year review has been undertaken to ensure a comprehensive assessment has been undertaken. These are summarised in **Table 2**.

Table 2 Accident Summary

Survey Location	Slight	Serious	Fatal	HGV Incidents	Single Vehicle Incidents
B966 between the site access and C2K	0	0	0	0	0
C2K Lang Stracht	3	1	0	0	3
B974 between the proposed construction access and Banchory	2	2	0	2	3
C7K between Drumtochty and Auchenblae	0	0	0	0	0
Kintore Street in Auchenblae	0	0	0	0	0
C1K between Mains of Glenfarquhar and Stonehaven	0	0	0	0	0
A957 Slug Road between Stonehaven and Crathes	3	3	0	0	5
A93 between Banchory and Crathes	4	5	0	0	3
B9077 between the A957 and the Chap Quarries	0	1	1	0	1

The review of traffic accidents does not suggest any trends that could be exacerbated by the temporary introduction of construction traffic associated with the Proposed Development.

5.6 Future Baseline

Construction of the Proposed Development is expected to commence in 2027, if consent is granted, and is anticipated to take up to 30 months, depending on weather conditions and ecological considerations.

To assess the likely effects during the construction and typical operational phase, base year flows were forecast by applying a National Road Traffic Forecast (NRTF) low growth factor to the 2025 flows in **Table 1**. The NRTF low growth factor for 2025 to 2027 is 1.010. This will be used in the Construction Peak Traffic Impact Assessment.

Table 3 24-hour Average Daily Traffic Data (2027)

Site Ref.	Survey Location	Cars & LGV	HGV	Total
1	B966, Southwest of Fettercairn	950	56	1,006
2	C2K, Lang Stracht	885	187	1,071
3	B974 Cairn o' Mount	721	125	846
4	C7K East of Glensaugh	54	26	80
5	Kintore Street, Auchenblae	797	198	996
6	C1K west of Stonehaven	269	97	366
7	A957 Slug Road	914	314	1,228

⁶ www.crashmap.co.uk

Site Ref.	Survey Location	Cars & LGV	HGV	Total
8	A93 Banchory	3,522	494	4,017
9	A93 Crathes	6,627	302	6,929
10	B9077	3,172	150	3,322
11	A90 North of Stonehaven	12,232	1,668	13,900
12	A90 South of Stonehaven	18,521	4,894	23,414
13	A90 at Stracathro	17,598	2,444	20,041

Please note minor variances due to rounding may occur.

6 Construction Trip Generation and Distribution

6.1 Trip Derivation

During the construction period, the following traffic will require access to the Proposed Development:

- Staff transport, in either cars or LGV; and
- Construction equipment and materials, deliveries of machinery and supplies such as concrete and crushed rock.

Traffic flows have been estimated from the material requirements, staff movements and forestry extraction. This has been combined into the construction programme and is summarised in **Table 4**.

Table 4 Construction Traffic Programme (Two Way Flows)

Phase	1	2	3	4	5	6	7	8	9	10
Forestry Removal	143	143	143	143	153	60	0	0	0	0
Site Mobilisation	0	0	0	0	40	120	90	0	0	0
Compound Works	0	0	0	0	79	0	119	0	0	0
Track Construction	0	0	0	0	0	0	679	1,433	1,433	1,315
Trackway Provision	0	0	0	0	0	0	0	0	0	15
Pole Laying	0	0	0	0	0	0	0	0	0	0
Cable Stringing	0	0	0	0	0	0	0	0	0	0
Pole Remediation	0	0	0	0	0	0	0	0	0	0
Track Remediation	0	0	0	0	0	0	0	0	0	0
Compound Remediation	0	0	0	0	0	0	0	0	0	0
Commissioning	0	0	0	0	0	0	0	0	0	0
Forestry Staff	220	220	220	220	880	440	0	0	0	0
Grid Staff	0	0	0	0	528	836	1,144	1,452	1,452	1,452
Total LGV	220	220	220	220	1,408	1,276	1,144	1,452	1,452	1,452
Total HGV	143	143	143	143	272	180	888	1,433	1,433	1,330
Total Traffic	363	363	363	363	1,680	1,456	2,032	2,885	2,885	2,782
Total LGV / Day	10	10	10	10	64	58	52	66	66	66
Total HGV / Day	6	6	6	6	12	8	40	65	65	60
Total Traffic / Day	16	16	16	16	76	66	92	131	131	126

Phase	11	12	13	14	15	16	17	18	19	20
Forestry Removal	0	0	0	0	0	0	0	0	0	0
Site Mobilisation	0	0	0	0	0	0	0	0	0	0
Compound Works	0	0	0	0	0	0	0	0	0	0
Track Construction	753	753	378	0	0	0	0	0	0	0
Trackway Provision	15	53	53	0	0	0	0	0	0	0
Pole Laying	11	69	69	240	229	172	172	172	172	172
Cable Stringing	0	0	0	0	0	0	0	20	20	50
Pole Remediation	0	0	0	0	0	0	0	0	0	0
Track Remediation	0	0	0	0	0	0	0	0	0	0
Compound Remediation	0	0	0	0	0	0	0	0	0	0
Commissioning	0	0	0	0	0	0	0	0	0	0
Forestry Staff	0	0	0	0	0	0	0	0	0	0
Grid Staff	1,452	1,452	1,452	1,452	1,452	1,452	1,452	1,452	1,452	1,452
Total LGV	1,452	1,452	1,452	1,452	1,452	1,452	1,452	1,452	1,452	1,452
Total HGV	779	875	500	240	229	172	172	192	192	222
Total Traffic	2,231	2,327	1,952	1,692	1,681	1,624	1,624	1,644	1,644	1,674
Total LGV / Day	66	66	66	66	66	66	66	66	66	66
Total HGV / Day	35	40	23	11	10	8	8	9	9	10
Total Traffic / Day	101	106	89	77	76	74	74	75	75	76

Phase	21	22	23	24	25	26	27	28	29	30
Forestry Removal	0	0	0	0	0	0	0	0	0	0
Site Mobilisation	0	0	0	0	0	0	0	0	150	100
Compound Works	0	0	0	0	0	0	0	0	0	0
Track Construction	0	0	0	0	0	0	0	0	0	0
Trackway Provision	0	0	0	0	0	0	0	0	0	0
Pole Laying	172	0	0	0	0	0	0	0	0	0
Cable Stringing	30	30	30	0	0	0	0	0	0	0
Pole Remediation	55	55	0	298	298	0	0	0	0	0
Track Remediation	0	0	15	0	0	53	53	0	0	0
Compound Remediation	0	0	0	79	0	119	0	0	0	0
Commissioning	0	0	0	0	88	88	352	352	352	352
Forestry Staff	0	0	0	0	0	0	0	0	0	0
Grid Staff	1,452	1,452	1,452	1,452	924	924	0	0	0	0
Total LGV	1,452	1,452	1,452	1,452	1,012	1,012	352	352	352	352
Total HGV	257	85	45	377	298	172	53	0	150	100
Total Traffic	1,709	1,537	1,497	1,829	1,310	1,184	405	352	502	452
Total LGV / Day	66	66	66	66	46	46	16	16	16	16
Total HGV / Day	12	4	2	17	14	8	2	0	7	5
Total Traffic / Day	78	70	68	83	60	54	18	16	23	21

Please note minor variances due to rounding may occur.

Peak traffic movements will occur in months eight and nine of the construction programme, when there will be 131 vehicle movements per day, made up of 66 Car / LGV movements and 65 HGV movements.

6.2 Peak Traffic Flows

The peak traffic flows indicate 66 Car / LGV and 65 HGV two-way movements per day.

It is assumed that all aggregate materials for use in the construction of access tracks, hardstands and access junctions would be sourced from quarry suppliers located near Edzel and on the B9077 and that they will access the Proposed Development via the Study Area roads and no other road links.

Using the distribution assumptions above and the access routing noted in **Section 5.1**, construction traffic has been assigned to the Study Area network. The resulting traffic flows are summarised in **Table 5**.

Table 5 Peak Construction Traffic Flows

Site Ref.	Survey Location	Cars & LGV	HGV	Total
1	B966, SW of Fettercairn	10	26	36
2	C2K, Lang Stracht	10	38	48
3	B974 Cairn o' Mount	14	17	31
4	C7K East of Glensaugh	14	12	26
5	Kintore Street, Auchenblae	14	12	26
6	C1K west of Stonehaven	14	5	19
7	A957 Slug Road	14	10	24
8	A93 Banchory	14	17	31
9	A93 Crathes	14	17	31
10	B9077	0	27	27
11	A90 North of Stonehaven	16	0	16
12	A90 South of Stonehaven	12	0	12
13	A90 at Stracathro	36	12	48

Please note minor variances due to rounding may occur.

6.3 Abnormal Indivisible Loads

The Applicant has advised that there are no Abnormal Indivisible Loads (AIL) components associated with the Proposed Development.

7 Construction Traffic Impact Assessment

7.1 Proposed Development

The peak month traffic data for the Proposed Development was combined with the future year (2027) traffic data to allow a comparison between the baseline results to be made. The increase in traffic volumes is illustrated in percentage increases for each class of vehicle. This is illustrated in **Table 6**.

Table 6 2027 Base + Development Traffic Impact

Site Ref.	Survey Location	Cars & LGV	HGV	Total
1	B966, SW of Fettercairn	1.1%	45.8%	3.5%
2	C2K, Lang Stracht	1.1%	20.2%	4.5%
3	B974 Cairn o' Mount	1.9%	13.8%	3.7%
4	C7K East of Glensaugh	25.9%	48.0%	33.0%
5	Kintore Street, Auchenblae	1.8%	6.2%	2.6%
6	C1K west of Stonehaven	5.2%	5.0%	5.1%
7	A957 Slug Road	1.5%	3.2%	2.0%
8	A93 Banchory	0.4%	3.5%	0.8%
9	A93 Crathes	0.2%	5.7%	0.5%
10	B9077	0.0%	18.2%	0.8%
11	A90 North of Stonehaven	0.1%	0.0%	0.1%
12	A90 South of Stonehaven	0.1%	0.0%	0.1%
13	A90 at Stracathro	0.2%	0.5%	0.2%

Please note minor variances due to rounding may occur.

The total traffic movements are predicted to increase by 33.0% on the C7K East of Glensaugh and while this may seem like a high increase in percentage terms, this is due to the existing low levels of traffic currently using the road. The increase in traffic at this location is 26 movements per day (13 inbound and 13 outbound), equating to circa 2.5 vehicles per hour at the peak of construction activities. This level of traffic is not considered to have a substantial detrimental impact on the operation of the road, following the provision of a Construction Traffic Management Plan (CTMP).

On the rest of the Study Area, the total predicted increase is not predicted to increase by more than 5.1%. This is significantly less than the average daily variance in traffic flows (+ / -10%) that naturally occurs. The construction phase is transitory in nature and the peak of construction activities is short-lived.

A review of existing road capacity has been undertaken using the "The NESAs Manual", formerly part of the Design Manual for Roads and Bridges⁷. The theoretical road capacity has been estimated for each of the road links for a 12-hour period that makes up the Study Area. The results are summarised in **Table 7**.

Table 7 2027 Daily Traffic Capacity Review

Site Ref.	Survey Location	2027 Baseline Total Traffic Flows	12 hour Theoretical Road Capacity	2027 Baseline + Development Flows	Spare Road Capacity (%)
1	B966, SW of Fettercairn	1,006	19,200	1,169	93.9%
2	C2K, Lang Stracht	1,071	21,600	1,234	94.3%
3	B974 Cairn o' Mount	846	19,200	846	95.6%
4	C7K East of Glensaugh	80	3,360	149	95.6%
5	Kintore Street, Auchenblae	996	3,360	1,065	68.3%
6	C1K west of Stonehaven	366	19,200	366	98.1%
7	A957 Slug Road	1,228	21,600	1,300	94.0%

⁷ Department for Transport, et al, Design Manual for Roads and Bridges

Site Ref.	Survey Location	2027 Baseline Total Traffic Flows	12 hour Theoretical Road Capacity	2027 Baseline + Development Flows	Spare Road Capacity (%)
8	A93 Banchory	4,017	28,800	4,017	86.1%
9	A93 Crathes	6,929	28,800	6,936	75.9%
10	B9077	3,322	19,200	3,367	82.5%
11	A90 North of Stonehaven	13,900	81,600	13,907	83.0%
12	A90 South of Stonehaven	23,414	81,600	23,456	71.3%
13	A90 at Stracathro	20,041	81,600	20,273	75.2%

The results indicate there are no road capacity issues with the addition of construction traffic associated with the Proposed Development and significant spare capacity exists within the trunk and local road network to accommodate all construction phase traffic.

8 Proposed Traffic Mitigation Measures

8.1 Construction Phase

The following measures would be implemented through a CTMP during the construction phase. The CTMP would be agreed with AC prior to construction works commencing and would include the following mitigation measures:

- Where possible, the detailed design process would minimise the volume of material to be imported to Site to help reduce HGV numbers;
- A Site worker transport and travel arrangement plan would be produced by the Principal Contractor, including details of transport modes to and from the work Site (including pick up and drop off times);
- All materials delivery lorries (dry materials) should be sheeted to reduce dust and stop spillages on public roads;
- Specific training and disciplinary measures should be established to ensure the highest standards are maintained to prevent construction vehicles from carrying mud and debris onto the carriageway;
- Wheel cleaning facilities may be established at the Site entrance, depending on the views of AC;
- Normal Site working hours would be limited to between the following hours:
 - March to September – 07:00 to 19:00 Weekdays and 07:00 to 16:00 Weekends;
 - October to February – 07:30 to 17:00 Weekdays and 08:00 to 16:00 Weekends;
- Appropriate traffic management measures would be put in place at Site access junctions to avoid conflict with general traffic, subject to the agreement of the AC. Typical measures would include HGV turning and crossing signs and / or banksmen at the Site access and warning signs;
- Provide construction updates on the project website and or a newsletter to be distributed to residents within an agreed distance of the Site;
- Adoption of a voluntary speed limit of 20 mph for all construction vehicles travelling through local villages and towns;
- Adoption of a maximum speed limit of 15 mph for all construction vehicles travelling on the C7K and tracks / unclassified roads leading from the C1K;
- All drivers would be required to attend an induction to include:
 - A tool box talk safety briefing;
 - The need for appropriate care and speed control;
 - A briefing on driver speed reduction agreements (to slow Site traffic at sensitive locations through the villages); and
 - Identification of the required access routes and the controls to ensure no departure from these routes.

AC may require an agreement to cover the cost of abnormal wear and tear on roads within the Study Area. Video footage of the pre-construction phase condition of the construction vehicles route would be recorded to provide a baseline of the state of the road prior to any construction work commencing. This baseline would inform any change in the road condition during the construction stage of the Proposed Development. Any necessary repairs would be coordinated with the Roads Authority. Any damage caused by traffic associated with construction of the Proposed Development that would be hazardous to public traffic, would be repaired immediately.

Any damage to road infrastructure caused directly by construction traffic would be made good, and street furniture that is removed on a temporary basis would be fully reinstated.

There would be a regular road edge review and any debris and mud would be removed from the public carriageway to keep the road clean and safe during the initial months of construction activity, until the construction junction and immediate access track works are complete.

Overhead high voltage crossing points would be identified prior to the commencement of construction activities and appropriate actions would be undertaken to highlight these.

8.2 Access Improvements

The access junctions would be designed and constructed in accordance with AC design standards.

8.3 Public Information

The Applicant would also ensure information was distributed through its communication team via the project website, local newsletters and social media.

8.4 Operational Phase Mitigation

Site entrance roads would be well maintained and monitored during the operational life of the Proposed Development. Regular maintenance would be undertaken to keep the Site access track drainage systems fully operational and to ensure there are no run-off issues onto the public road network.

9 Summary & Conclusions

Pell Frischmann has been commissioned by ASH design+assessment, on behalf of SSEN Transmission, to undertake a Transport Assessment for the proposed Overhead Line grid connection for Glendye Wind Farm (the 'Proposed Development').

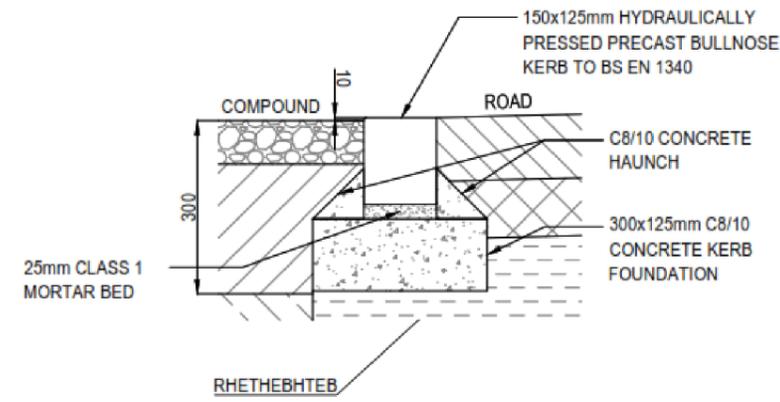
An assessment of average daily development trips is considered an appropriate method of assessing the impacts of the Proposed Development on the Study Area roads. The construction traffic would result in a temporary increase in traffic flows on the road network surrounding the Proposed Development.

A series of mitigation measures and management plans have been proposed to help mitigate and offset the impacts of both the construction and operational phase traffic flows.

No link capacity issues are expected on any of the roads assessed due to the additional movements associated with the Proposed Development. The effects of construction traffic are temporary in nature and are transitory.

The Proposed Development will lead to a temporary increase in traffic volumes within the Study Area during the construction phase only; however, this can be appropriately and effectively managed. It is therefore concluded that there are no transport related matters which would preclude the construction of the Proposed Development.

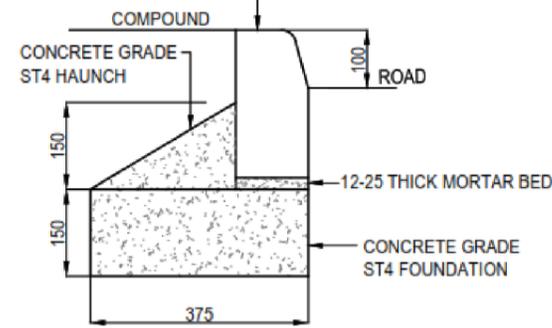
Annex A: Access Junction Drawings



BULL NOSE KERB (BNK)

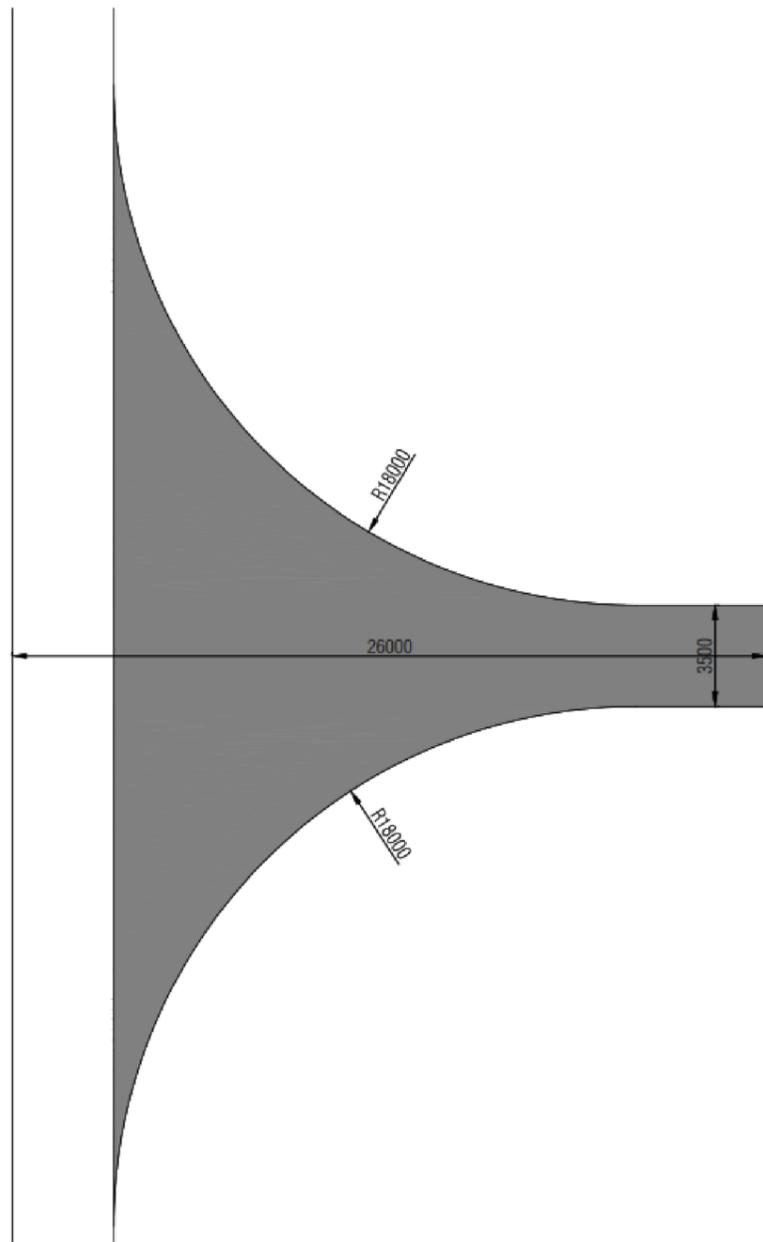
SCALE 1:10

HALF BATTER KERB TYPE HB2 TO
BS7263:PART1:1990 (255x125)



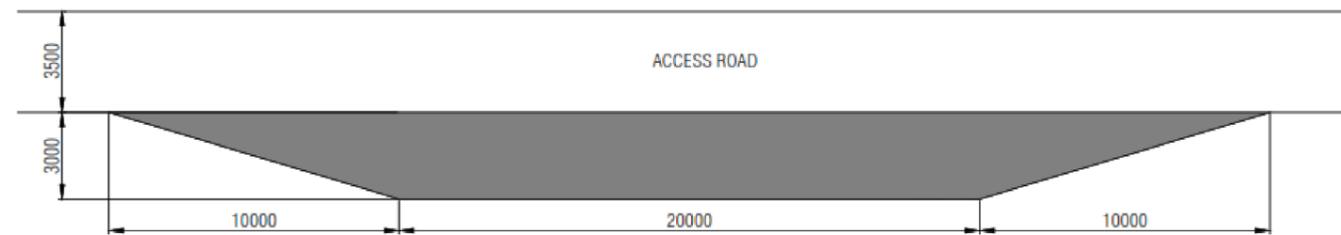
HALF BATTER KERB (HBK)

SCALE 1:10



TYICAL BELLMOUTH GEOMETRY

1:200



TYICAL SECTION FOR PASSING BAY

Project No:	LT468/469
Project:	Glendye Wind Farm Overhead Line Grid Connection
Title:	EIA Report: Appendix 13,1 - Annex A: Junction Plans