Technical Appendix 9.1: Transport Assessment

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1 Introduction

Purpose of the Report

1.1.1 Pell Frischmann Limited (PF) has been commissioned by Ramboll UK Limited on behalf of Renewco Power Ltd to undertake a Transport Assessment (TA) for the proposed M74 West Renewable Energy Park (the Proposed Development), located to the northwest of Abington and approximately 4.5km southeast of Douglas, in South Lanarkshire.

1.1.2

1.1.3 The report identifies the key transport and access issues associated with the Proposed Development, including the route for abnormal loads. The TA identifies where the Proposed Development may require mitigation works to accommodate the predicted traffic; however, the detailed design of these remedial works is beyond the agreed scope of this report.

Report Structure

1.1.4 Following this introduction, the TA report is structured as follows:

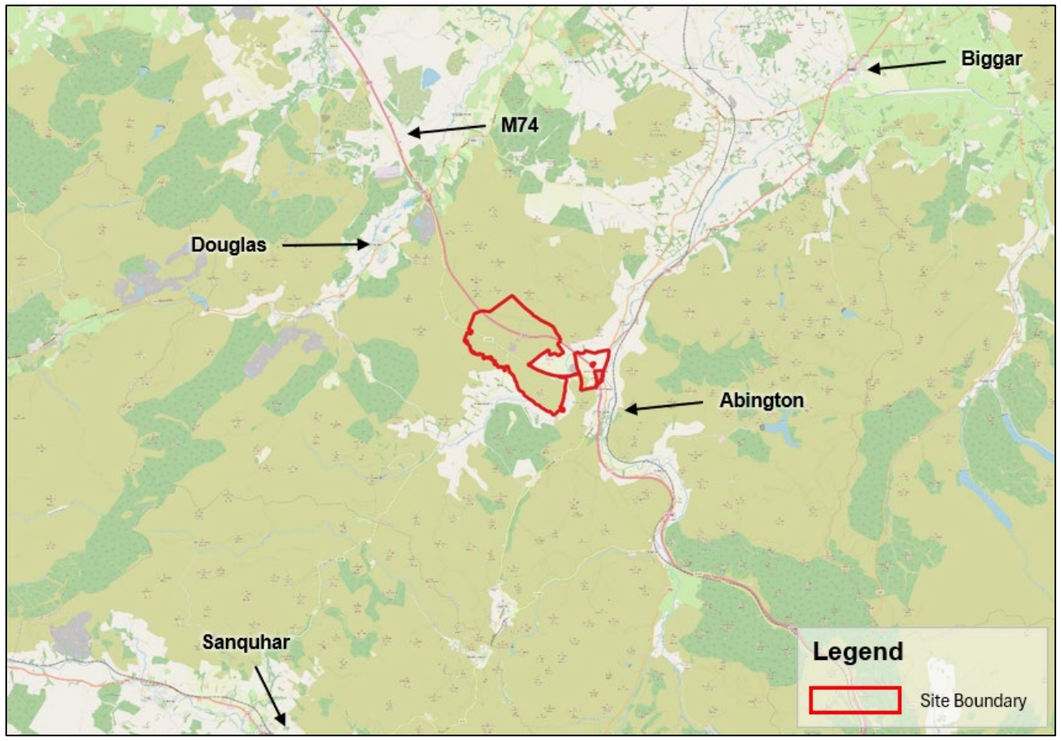
- Chapter Two describes the Proposed Development;
- Chapter Three reviews the relevant transport and planning policies;
- Chapter Four sets out the methodology used within this assessment;
- Chapter Five describes the baseline transport conditions;
- Chapter Six describes the trip generation and distribution 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 Proposed Development

Site Location

2.1.1 The Site covers an area of approximately 1,275 hectares (ha) and is located immediately north west of Abington and approximately 4.5 km south east of Douglas, in South Lanarkshire.

Figure 1 Site Location



Source: OpenStreetMap, Pell Frischmann

2.1.2 There are two residential properties within the red line boundary.

2.1.3 The Site predominantly comprises open moorland, improved and semi-improved grassland, an area of forestry, and is intersected by the M74 motorway and B7078 and B740 local roads. Proposed Development

2.1.4 The main elements of the Proposed Development would be as follows:

- 22 wind turbines with a maximum tip height of 200 m;
- permanent foundations supporting each wind turbine, and associated permanent and temporary crane hardstanding at each wind turbine base;
- a main site entrance for use during construction and operation, at the current entrance to Thirstone Quarry;
- two site entrances to the south of the B7078 and one site entrance off of the B740 directly south of the B7078 (as shown on Figure 2), which will be designed to accommodate abnormal indivisible loads required for turbine component delivery;
- a further site entrance from the M74 motorway to the northern part of the site only, to allow delivery of AILs required for turbine component delivery. Empty loads will return to the road network via the existing underpass and the B7078, rejoining the M74 at Junction 13;

- five further site entrances to the solar array area, four from the B7078 (two to the north and two to the south) and one from the A702 immediately north of Abington Services;
- a series of new on-site access tracks with associated watercourse crossings and turning heads;
- underground cable arrays within the Site connecting the turbines and solar panels to the on-site substation;
- substation compound and control building;
- repurposing of the house at Thirstone Cottage as a site office;
- repurposing of the property at The Strand as a strategic spares store;
- solar power generators, of approximately 80 MW generating capacity;
- a BESS with up to 50 MW capacity and 200MWh of storage; and
- four temporary construction compounds and laydown areas, the main one located adjacent to the substation and BESS site and two satellite areas: one located in the northern area of the site and the other located in the eastern area of site designated for the solar array.

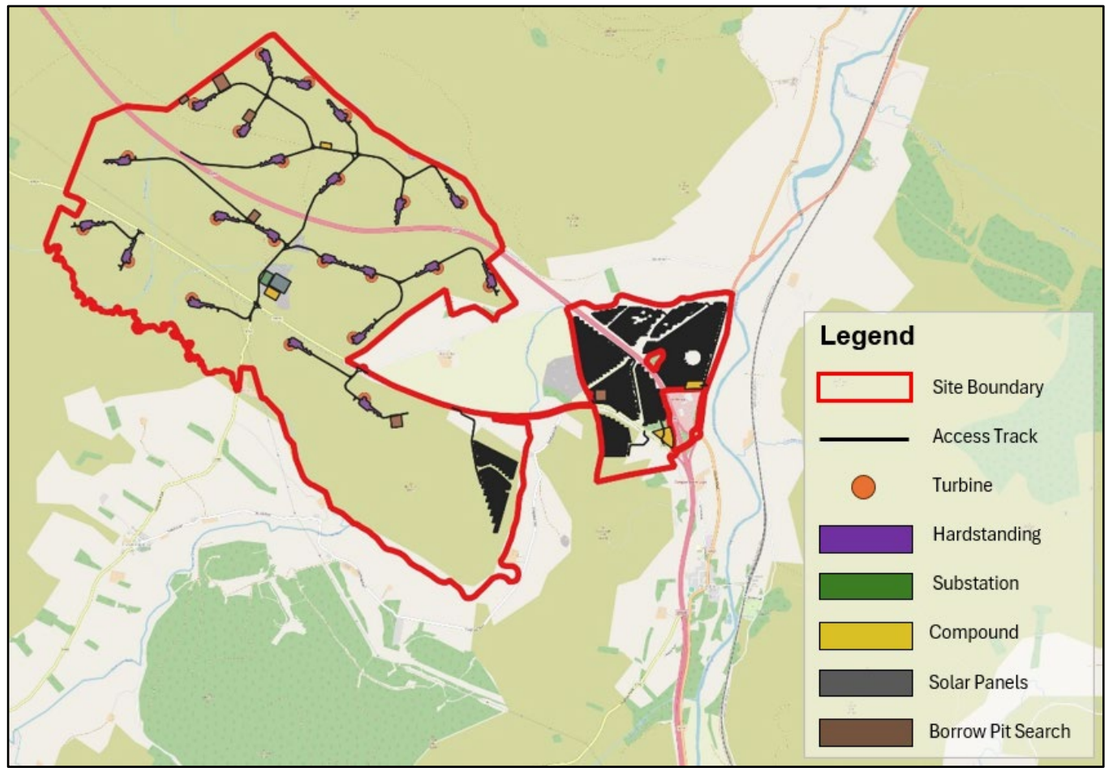
2.1.5 In addition, the following ancillary works would be necessary:

- habitat management plan areas, including plantation forestry felling and replacement planting;
- extraction of rock from borrow pits; five borrow pit search areas have been sized and located within the windfarm area, a sixth borrow pit search area is proposed within the solar area;
- temporary on-site concrete batching plant. This would be located within the temporary compound areas and/or borrow pit search area; and
- works on land outside the main development area and immediately adjacent to the M74 to allow the delivery of abnormal loads to the northern area of the site (e.g. construction of over-run areas, temporary modifications to street furniture).

2.1.6 A connection to the electricity grid network would be made at the proposed Redshaw Substation, which is to be located on a site adjacent to the western Site boundary north of the B7078 The grid connection infrastructure, between the proposed on-site substation and the Redshaw Substation, is anticipated to be an underground cable which would be classed as permitted development under the Town and Country Planning (General Permitted Development) (Scotland) Order 1992.

2.1.7 An indicative layout of the Proposed Development is presented in Figure 2.

Figure 2 Proposed Development Layout



Source: OpenStreetMap, Pell Frischmann

Candidate Turbine

2.1.8 The Siemens Gamesa SG6.6-155 turbine has been identified for the Proposed Development as the candidate turbine which has a maximum tip height of 200 m.

Table 1 Turbine Parameters

Candidate Turbine	Max Tip Height	Max Rotor Diameter	Hub Height	Capacity	Planning Capacity
Siemens Gamesa SGRE6.6-155	200m	155	122.5	6.6MW	6.6-7.5MW

2.1.9 There is potential that the lower sections of the tower will be made from concrete and as such do not represent an abnormal load, however, the worst-case loads for kinematic envelope are therefore the blade and a combined tower load using the maximum width and length of the two sections.

2.1.10 The proposed Port of Entry (POE) is King George V Docks on the Clyde which will be used for AIL movements.

2.1.11 To provide a robust assessment scenario based upon the known issues along the access route, it has been assumed that all blades would be carried on a Superwing trailer.

2.1.12 The base and mid towers would be carried on a 4+7 clamp adaptor style trailer. The hub, nacelle housing, and top towers would be carried on a six-axle step frame trailer.

Figure 3 Blade Trailer

Figure 4 Tower Trailer

3 Transport Policy Review

Introduction

3.1.1 This chapter of the report provides an overview of the relevant national and local transport planning policy.

National Policy and Guidance

National Planning Framework 4 (2023)

3.1.2 The National Planning Framework 4 (NPF4) was approved by Scottish Parliament on 11 January 2023 and was adopted by Scottish Ministers on 13 February 2023.

3.1.3 Policy 11: Energy within the NPF4 notes that:

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

- *Wind farms including repowering, extending, expanding and extending the life of existing wind farms; and*
- *Energy storage, such as battery storage and pumped storage hydro.*

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

- *Impacts on communities and individual dwellings, including, residential amenity, visual impact, noise and shadow flicker;*
- *Public access, including impact on long distance walking and cycling routes and scenic routes;*
- *Impacts on road traffic and on adjacent trunk roads, including during construction; and*
- *Cumulative impacts.*

3.1.4 Policy 13: Sustainable Transport within the NPF4 notes the following in relation to Transport Assessments and Travel Plans:

"Where a development proposal will generate a significant increase in the number of person trips, a transport assessment will be required to be undertaken in accordance with the relevant guidance."

"Development proposals for significant travel generating uses, or smaller-scale developments where it is important to monitor travel patterns resulting from the development, will only be supported if they are accompanied by a Travel Plan with supporting planning conditions/obligations. Travel plans should set out clear arrangements for delivering against targets, as well as monitoring and evaluation."

Planning Advice Note (PAN) 75

3.1.5 Planning Advice Note (PAN) 75: 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."

Transport Assessment Guidance (2012)

3.1.6 Transport Scotland's Transport Assessment Guidance 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.

3.1.7 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.

Local Policy

South Lanarkshire Local Development Plan 2 (LDP) (2021)

3.1.8 In Chapter 7: Infrastructure, the LDP notes that:

"Major proposals for housing, industrial, minerals, waste and other commercial development should be accompanied by a Transport Assessment. This should consider how a proposed development will achieve sustainable travel by encouraging less reliance on private vehicles and facilitating cycling, walking and the use of public transport. Where possible, in relation to minerals and waste, options for rail transportation should be considered. The use of the public road network by significant numbers of heavy goods vehicles and their interaction with other road users can lead to a variety of issues, such as spillage, noise, dust and damage to the carriageway. The Council will expect operators to ensure that a drivers code of conduct is in place to mitigate many of these issues."

South Lanarkshire Local Development Plan 2 – Supporting Planning Guidance: Renewable Energy (2021)

3.1.9 In terms of the Development Management Considerations for the Impacts on road traffic and on adjacent trunk roads, the Supporting Planning Guidance: Renewable Energy noted that:

"Road and traffic impacts require to be identified in the application submission. In siting wind turbines close to major roads, it is recommended that pre-application discussions are held with Transport Scotland's Trunk Road and Bus Operations (TRBO). This is also particularly important for the movement of large components (abnormal load routing) during the construction period, periodic maintenance and for decommissioning. Where the trunk road network is to be used to transport turbine components to site then an abnormal load route assessment should be undertaken and submitted to Transport Scotland for consideration. The assessment should identify the preferred route to site and should identify any pinch points on the trunk road network where mitigation measures may be required. Swept path analysis should be included to help identify the nature and extent of the trunk road mitigation required. In terms of siting and design, it is recommended that a minimum set back from roads and railways is one and half times the height to tip of the turbine proposed, though this will be considered in detail on a case-by-case basis.

For wind farm developments (of three or more turbines) a Transport Assessment will be required. Prior to drafting the Transport Assessment, a Roads and Transportation Transport Assessment/Statement Scoping form is required to be completed and approved to ensure the necessary details are submitted with the application. Details of the development will be required such as programme of works including, junction requirements, phases of development, volume and frequency of vehicles, impact on road network, surveys (including swept path analysis) and travel plan. Where appropriate, the Assessment should demonstrate the likely impacts of the development on the trunk road network. If a proposal involves locating wind turbines close to the Trunk Road Network, approval will be required from Transport Scotland who will require to be satisfied that the proposal will not adversely affect the safety and free flow of the trunk road network. It should be noted that any new or modified direct access from the trunk road network will require approval from Transport Scotland. The design of the new or modified access junction will require to be designed in accordance with the Design Manual for Roads and Bridges (DMRB).

The construction of wind energy developments can have significant short-term impacts on the road network. Access for construction traffic must not compromise road safety, residential amenity or cause significant permanent damage to the environment. Applicants must provide an assessment of the traffic impact during both the construction and operational periods and demonstrate suitability of the transport routes for delivering turbine and other components from their source. It is likely that the developer will be required to enter into a Section 96 Agreement with the Council or agree to an upfront payment for smaller sites. Where appropriate, pre and post construction road surveys will be required to be completed that cover damage to public roads by construction traffic. A bond or guarantee may be required to cover the cost associated with this damage."

Policy and Guidance Summary

3.1.10 The Proposed Development can align with the stated transport policy objectives and the design of the Site and proposed mitigation measures will ensure compliance with national and local objectives.

4 Study Methodology

Introduction

4.1.1 There are three phases of the life of the Proposed Development. All three phases have been considered in this assessment and are as follows:

- The Construction Phase;
- The Operational Phase; and
- The Decommissioning Phase.

Project Phases – Transport Overview

4.1.2 Of all of the three phases, the construction phase is considered to have the greatest impact in terms of transport. Construction plant, bulk materials and turbine sections will be transported to site and may potentially have a significant increase in traffic on the study area network.

4.1.3 The operational phase is restricted to occasional maintenance operation which generate significantly lower volumes of traffic that are not considered to be in excess of daily traffic variation levels on the road network.

4.1.4 The decommissioning phase involves fewer trips on the network than the construction phase, as minor elements of infrastructure are likely to be left in place, adding to local infrastructure that can potentially be used for further agricultural or leisure uses in the future.

4.1.5 It should be noted however that the construction effects are short lived and transitory in nature, whilst the operational phase assessment has been assumed to be based on a typical operating day.

Scoping Discussions

4.1.6 The Applicant submitted a Scoping Report to Scottish Ministers who then consulted South Lanarkshire Council (SLC) and Transport Scotland (TS) in respect of the Environmental Impact Assessment (EIA) which included a section considering traffic and transport. Consultation responses are detailed in Technical Appendix 1.1: Consultation Register (EIAR Volume 4).

5 Baseline Conditions

Access Arrangement

5.1.1 The wind farm element of the site will be mainly accessed via five access junctions, of which, three are directly accessed from the B7078, one is from the B740 via the B7078 and one from the M74. Indicative junction layouts can be seen in Appendix A.

5.1.2 The solar array element of the site will be accessed from four accesses on the B7078 and one from the A702 as noted in Figure 2: Site Layout.

5.1.3 Access for AIL traffic is expected to be direct from the M74 for the part of the Site to the north of the M74, and from the B7078 and B740 for the remainder of the Site.

5.1.4 Within the Site itself, the Proposed Development will be served by a network of both new and upgraded on-site access tracks to enable construction and maintenance once operational.

Study Area

5.1.5 The study area includes local roads that are likely to experience increased traffic flows resulting from the Proposed Development. The geographic scope was determined through a review of Ordnance Survey (OS) plans and an assessment of the potential origin locations of construction staff and supply locations for construction materials.

5.1.6 Strategic access to the Site is available from the M74 which forms part of the trunk road network. Access for construction materials would be predominantly from the north via the M74 or from quarries along the B7078.

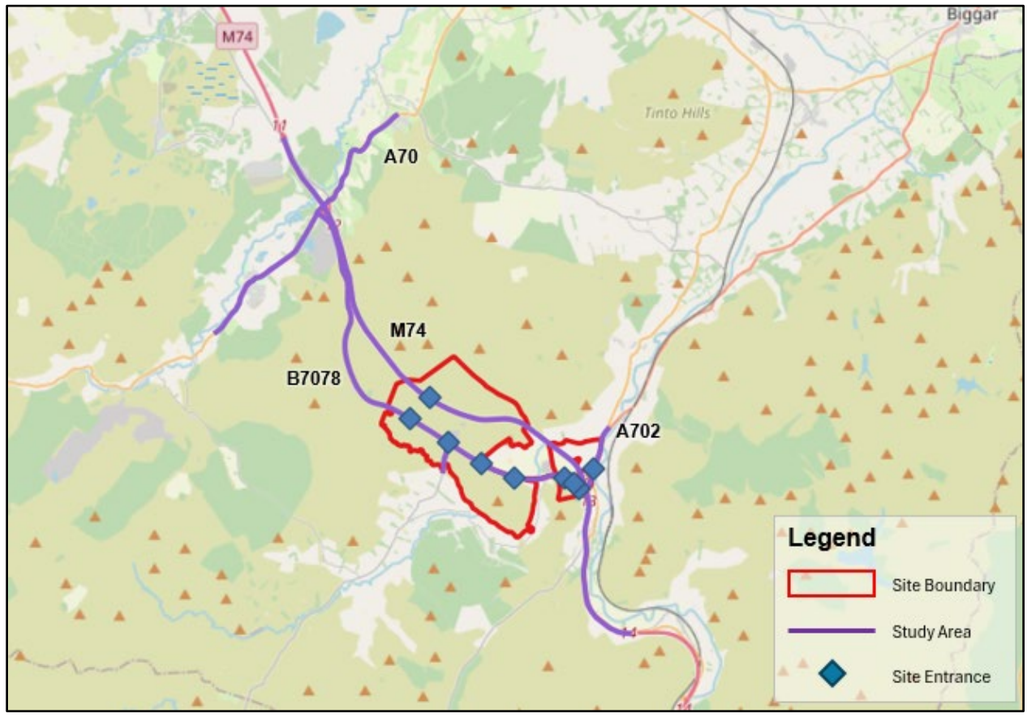
5.1.7 Where feasible, local materials will be sourced which will avoid traffic impacting on local communities as much as possible.

5.1.8 The study area for this assessment is as follows:

- B7078, between M74 Junction 13 and A70;
- B740, between the B7078 and Black Burn bridge;
- A70, between the west of Douglas and Rigside;
- M74 between junction 11 and junction 14; and
- A702 (T), between M74 Junction 13 and A73 / A702 Roundabout.

5.1.9 The study area network is illustrated in Figure 5.

Figure 5 Study Area



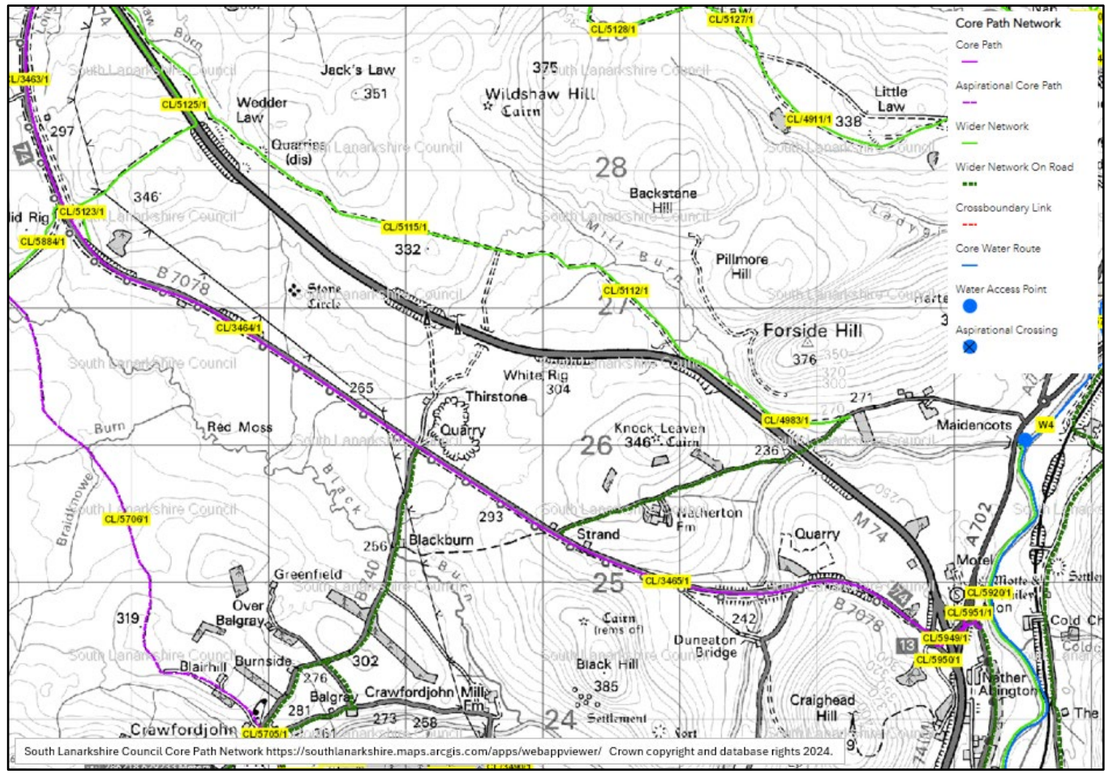
Source: OpenStreetMap, Pell Frischmann

Pedestrian and Cyclist Networks

5.1.10 A review of SLC's Core Path Network[1] which is shown in Figure 6 shows that Core Path CL/3463/1, CL/3464/1, CL/3465/1, CL/5949/1, and CL/5951/1 are located along sections of the B7078 within the study area and along segregated paths adjacent to the B7078. Other Core Paths along the B7078 include CL/3463/4, CL/3462/2, CL/3463/3 and CL/3463/2. This route also forms part of the National Cycle Network Route (NCR) Number 74.

5.1.11 Figure 6 also shows Wider Network paths CL/5115/1 and CL/5112/1 which are located within the Site boundary.

South of Abington along the M74, Core Paths CL/3495/1, CL/5960/2, CL/3496/1, CL/3497/1, CL/3499/4, CL/3499/6, CL/3503/1, CL/3504/2, CL/3505/1, and CL/5957/2 sit within the study area on segregated paths alongside the M74. Figure 6 Core Path Network in the vicinity of the Site



5.1.12 NCR 74 is designated as a traffic-free route along the western side of the B7078 in the vicinity of the Site access. NCR 74 is a mixture of on-road and traffic-free path which connects Strathclyde Country Park and NCR 75, north of Hamilton.

Road Access

5.1.13 It is expected that general construction traffic will access the Site via the M74, B7078, B740 and A702.

[1] southlanarkshire.maps.arcgis.com/apps

5.1.14 Access for Abnormal Indivisible Load (AIL) traffic will be direct from the M74 and B7078, and early discussions with Transport Scotland have been held on the most appropriate form for the access from the M74 to be accommodated.

M74

5.1.15 The M74 is a major motorway in Scotland which provides a connection to England. Within the study area, the motorway comprises two-lanes in each direction and forms part of the Trunk Network. The M74 is maintained by Amey on behalf of Transport Scotland. The M74 is subject to a speed limit of 70 mph.

A70

5.1.16 The A70 is a single carriageway road, which is subject to the national speed limit in the vicinity of Junction 12 of the M74.

5.1.17 Within Douglas Village, the speed level reduces to 30 miles per hour (mph) and subsequently increases to the national seed limit when exiting the village. Traffic calming features such as build-outs where one direction of traffic must give way to the other are present in the vicinity of Douglas Primary School where the speed limit reduces to 20 mph.

5.1.18 Through Uddington, the speed limit along the A70 is 40 mph and this increases to the national speed limit throughout the rest of the study area. The A70 is maintained by SLC.

A702

5.1.19 Within the study area the A702 (T) is a two-way single carriageway road and is subject to the national speed limit. The A702 (T) forms part of the trunk road network and is maintained by BEAR Scotland on behalf of Transport Scotland.

B7078

5.1.20 The B7078 is a two-way single carriageway road, which is subject to the national speed limit. In the vicinity of the Site access to the wind farm element of the Proposed Development, there is a segregated cycleway along the south-western side of the B7078 which forms part of the NCR 74.

5.1.21 The B7078 is maintained by SLC.

B740

5.1.22 The B740 is a two-way single carriageway road, which is subject to the national speed limit. In the vicinity of the Site access along the B740, the NCR 74 crosses the B740.

5.1.23 The B740 is maintained by SLC.

Agreed Timber Routes

5.1.24 The Agreed Timber Route Map[2] 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'.

5.1.25 '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.

5.1.26 Almost all roads included within the Study Area are A-roads and are therefore classified as 'Agreed Routes' by default, with the exception of the B7078. The B7078 will be key to gain access to the site for timber extraction and is therefore categorized as a 'Consultation Route'.

Existing Traffic Conditions

5.1.27 In order to assess the impact of development traffic on the study area, existing ATC information from a neighbouring scheme[3] was obtained from the online planning portal.. The ATC surveys were conducted over a 7-day period between 29 September and 05 October 2021.

5.1.28 The count sites used were as follows:

1. B7078, between Junction 13 and A70; and
2. A70, between the B7078 junction and Junction 12 of the M74.

5.1.29 In addition to the ATC data, further traffic count data was obtained from the Department for Transport (DfT) database on the A70, M74, and A702 (sites 3, 4, 5 and 6). A National Road Traffic Forecast (NRTF) low growth factor was applied to the 2021 ATC survey traffic flows to forecast 2024 traffic flows. The NRTF low growth factor for 2021 to 2024 is 1.0216.

5.1.30 The DfT count sites are as follows:

3. A70, between M74 Junction 12 and Rigside (DfT Count Point 10827);
4. M74, between Junction 11 and Junction 12 (TS Count Point JTC00245);
5. A70, West of Douglas (DfT Count Point 40825);
6. A702, between M74 Junction 13 and A73 / A702 Roundabout (DfT Count Point 732);
7. M74, between Junction 12 and Junction 13 (TS Count Point ATC6_11); and
8. M74, between Junction 13 and Junction 14 (TS Count Point ATC6_21).

5.1.31 In order to avoid travel restriction associated with the Covid-19 pandemic, available 2019 traffic information was retrieved from both the DfT and TS Database for a consistent approach. A NRTF low growth factor was applied to the existing information obtained from DfT and TS in order to estimate 2024 flows. The NRTF low growth factor for 2019 to 2024 is 1.0366.

5.1.32 These sites were identified as being areas where sensitive receptors on the access route would be located. A full receptor sensitivity and effect review is prepared in the Traffic and Transport Chapter of the EIAR.

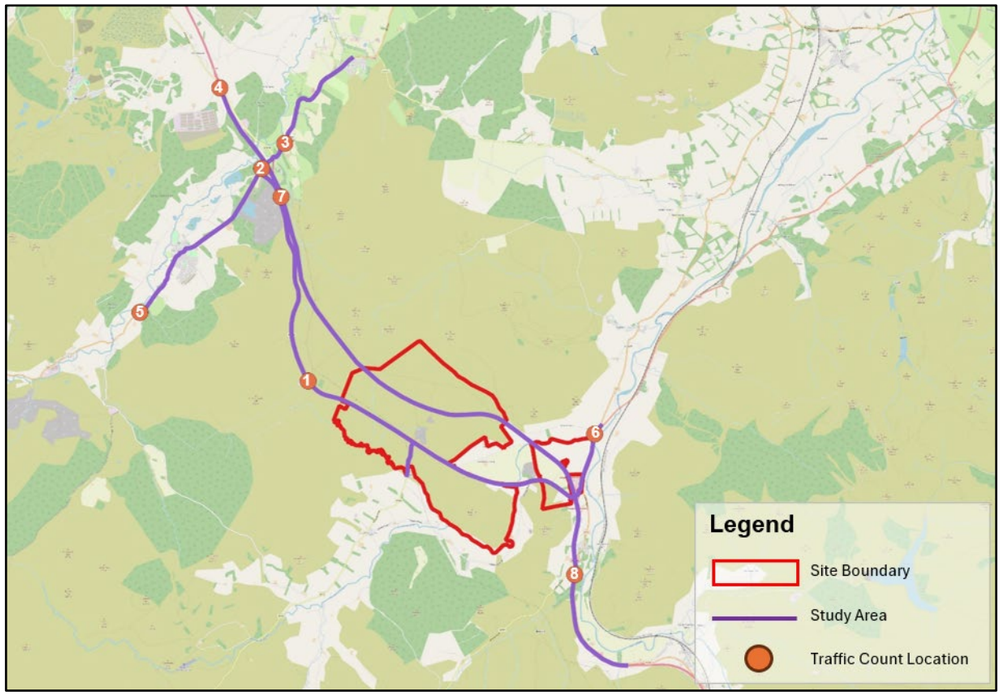
[2] https://timbertransportforum.org.uk/

[3] ECU00004839 Bodinglee Wind Farm, Volume 2 – EIAR – Chapter 9 – Access, Traffic and Transport

5.1.33 The traffic counters allowed the traffic flows to be split into vehicle classes and the data has been summarised into cars / light good vehicles (LGVs) and heavy goods vehicles (HGVs) (all goods vehicles >3.5 tonnes gross maximum weight).

5.1.34 The locations of the traffic sites are illustrated in Figure 7.

Figure 7 Traffic Count Location



Source: OpenStreetMap, Pell Frischmann

5.1.35 The 24-hour two-way average traffic flows for each of the traffic count locations are presented in Table 2.

Table 2 24-hour Two-way Average Traffic Data (2024)

Site ID	Survey Location	Count Source	Cars & LGVs	HGVs	Total
1	B7078, between M74 Junction 13 and A70	ATC Survey	591	299	890
2	A70, between B7078 junction and Junction 12 of the M74	ATC Survey	3,551	1,095	4,645
3	A70, between M74 Junction 12 and Rigside	DfT	3,431	786	4,217
4	M74, between junction 11 and junction 12	TS	23,600	9,363	32,963
5	A70, West of Douglas	DfT	1,697	290	1,987
6	A702, between M74 Junction 13 and A73 / A702 Roundabout	DfT	5,814	828	6,642
7	M74, between junction 12 and junction 13	TS	23,682	11,135	34,816
8	M74, between junction 13 and junction 14	TS	25,758	11,986	37,744

Please note minor variances due to rounding may occur

5.1.36 The ATC surveys undertaken along the B7078 and the A70 were also used to collect traffic speeds. The two-way seven-day average and 85th percentile speeds observed at the count location is summarised in Table 3.

Table 3 Speed Summary

Site ID	Survey Location	Count Source	Mean Speed (mph)	85%ile (mph)	Speed Limit (mph)
1	B7078, between M74 Junction 13 and A70	ATC Survey	59	60	60
2	A70, between B7078 junction and Junction 12 of the M74	ATC Survey	30	60	60
3	A70, between M74 Junction 12 and Rigside	DfT	No data available		40
4	M74, between junction 11 and junction 12	TS	66	75	70
5	A70, West of Douglas	DfT	No data available		60
6	A702, between M74 Junction 13 and A73 / A702 Roundabout	DfT	No data available		60
7	M74, between junction 12 and junction 13	TS	65	75	70
8	M74, between junction 13 and junction 14	TS	68	77	70

Recorded speeds during ATC surveys undertaken in September / October 2021 and TS from 2024 up until 01 August 2024.

5.1.37 The speed survey data indicates that there is non-compliance with current speed limits on the B7078 or M74, however there is compliance on the A70 between the B7078 junction and Junction 12 of the M74. This indicates that traffic management measures will be required on the B7078 and that Police Scotland may wish to consider enforcement spot checks in this area.

Accident Review

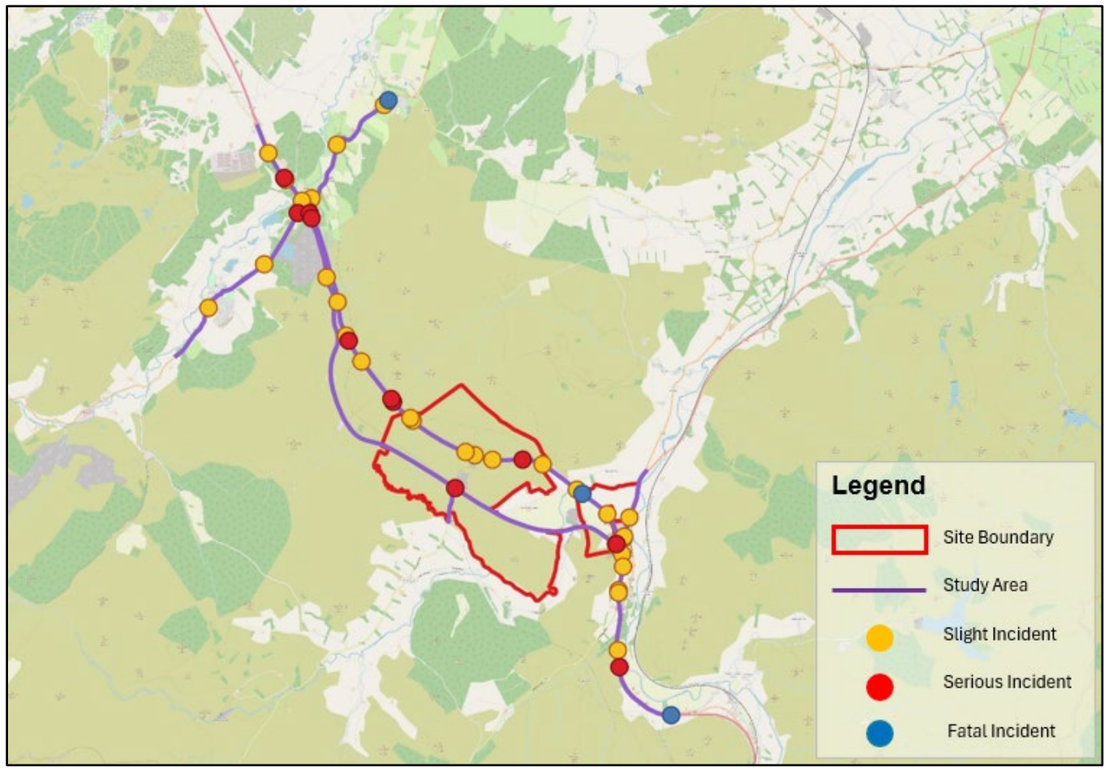
5.1.38 Road traffic accident data for the five-year period commencing 01 January 2018 through to the 31 December 2022 was obtained from the online resource crashmap.co.uk which uses data collected by the police about road traffic crashes occurring on British roads. Accident data recorded along the local roads within the study area, and in the vicinity of junctions joining the local road network, was analysed.

5.1.39 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 3-year period, or preferably a 5-year period, particularly if the site has been identified as being within a high accident area.

5.1.40 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.

5.1.41 The locations of the recorded accidents and the severity of the casualties are shown in Figure 8.

Figure 8 Accident Locations



Source: OpenStreetMap, Pell Frischmann

5.1.42 A summary of the number of incidents on each road link by severity is outlined in Table 4.

Table 4 Accident Summary

Road Link	Slight	Serious	Fatal
A70	8	1	1
B7078	1	1	0
M74	20	6	2
A702	5	1	0
Total	34	9	3

A70

- There were a total of 10 incidents on the A70, of which eight were categorised as "Slight", one "Serious" and one "Fatal".
- Two of these incidents (20%) involved an HGV, of which one was fatal. This incident occurred within Rigside.
- A total of 50% of all incidents on the A70 occurred either on or on approach to a junction.
- Three of the incidents on the A70 occurred within Rigside.

B7078

- Only two incidents occurred on the B7078, one categorised as "Slight" and one "Serious".
- The serious incident occurred at a T-junction with the B740, close to an access to the Proposed Development.
- The "Slight" incident involved a young driver.

M74

- There were a total of 28 incidents on the M74, of which 20 were categorised as "Slight", six as "Serious", and two as "Fatal".
- A total of 18 (64%) of these incidents occurred between Junction 12 and Junction 13, six (21%) occurred between Junction 13 and Junction 14, and the remaining four (14%) occurred between Junction 11 and Junction 12.
- Nine (32%) of the incidents on the M74 involved an HGV.
- A total of 14 (50%) of the incidents on the M74 only involved one vehicle.
- The M74 accounts for more than half (61%) of the incidents within the study area.
- One of the fatal incidents occurred at Junction 14 on a slip road travelling towards the M74 roundabout with the A702. This incident involved one motorcyclist.

A702

- There were a total of six incidents on the A702, five of which were categorised as "Slight", and the remaining one as "Serious".
- Five of the six (83.3%) incidents on the A702 occurred on a roundabout by Junction 13.
- Two (33.3%) of the incidents on the A702 involved an HGV.
- The "Serious" incident on the A702 occurred on the roundabout with the B7078 and involved two cars, resulting in three casualties.

Summary

- A total of 46 incidents occurred within the study area within a five-year period.
- Of these incidents, 34 (74%) were categorised as "Slight", nine (19.5%) as "Serious", and three (6.5%) as "Fatal".
- A total of 13 (28%) of the incidents within the study area involved an HGV.
- Three (6.5%) of the incidents within the study area involved a motorcycle and nine (19.5%) involved a young driver.
- The majority of incidents (61%) occurred on the M74.
- A total of 12 (26%) incidents within the study area occurred at a junction.
- Only one child casualty was recorded and the accident occurred in a "Slight" incidents at the A702 / B7078 Roundabout.
- There were two pedestrian casualties, one within Rigside, and one with Douglas, both were categorised as a "Slight" incidents.

5.1.43 In general, there are no clusters of PIAs at any location in the assessed area or high numbers of accidents involving HGVs along the local road network. The majority of PIAs recorded occurred at or on

approach to junctions / access to properties, where there is an increased interaction between vehicles, and on bends.

5.1.44 Based on the information available, it has been established that there are no specific road safety issues within the immediate vicinity of the Proposed Development that currently require to be addressed or would be exacerbated by the construction of the Proposed Development.

Future Baseline Traffic Conditions

5.1.45 Construction of the Proposed Development is expected to commence in Q2 of 2027 if consent is granted and it is expected to take up to 18 months, depending on weather conditions and ecological considerations.

5.1.46 To assess the likely effects during construction and typical operational phase, base year traffic flows were determined by applying a NRTF low growth to the obtained traffic flows. The NRTF low growth factor for 2024 to 2028 is 1.0289.

5.1.47 The 24-hour two-way average traffic flows for each of the traffic count locations are presented in Table 5. These have been used in the Construction Peak Traffic Impact Assessment.

Table 5 24-hour Two-way Average Traffic Data (2028)

Site ID	Survey Location	Cars & LGVs	HGVs	Total
1	B7078, between M74 Junction 13 and A70	608	307	916
2	A70, between B7078 junction and Junction 12 of the M74	3,653	1,126	4,780
3	A70, between M74 Junction 12 and Rigside	3,530	808	4,339
4	M74, between junction 11 and junction 12	24,283	9,634	33,916
5	A70, West of Douglas	1,746	299	2,045
6	A702, between M74 Junction 13 and A73 / A702 Roundabout	5,982	852	6,834
7	M74, between junction 12 and junction 13	24,366	11,457	35,823
8	M74, between junction 13 and junction 14	26,503	12,333	38,836

Please note minor variances due to rounding may occur

6 Trip Generation and Distribution

Construction Phase

Trip Derivation

6.1.1 During the 18-month construction period, the following traffic will require access to the Site:

- Staff transport, in either cars or minibuses;
- Construction equipment and materials, deliveries of machinery and supplies such as concrete and crushed rock as well as battery components, solar components and cables; and
- Abnormal loads comprising wind turbine sections, substation, grid transformers and also heavy lift crane(s).

6.1.2 Average monthly traffic flow data were used to establish the construction trips associated with the Site based on the assumptions detailed in the following sections.

Construction Staff

6.1.3 Staff would arrive in non-HGV vehicles and where possible will be encouraged to car share. The workforce on-site will depend on the activities undertaken, but, based on previous wind farm construction site experience for a project of this scale which suggests three staff per turbine during the short peak period of construction is likely, the maximum number of staff expected on-site could be around 66 per day, excluding staff associated with the solar element which is estimated to be 75 per day.

6.1.4 For the purposes of estimating traffic movements, it was assumed that 40% of staff would be transported by minibus and 60% would arrive by car (single car occupancy was assumed as the worst case at this stage with potentially fewer movements through car sharing).

6.1.5 For the battery element of the Proposed Development, and are based on previous experience from similar types of projects. For this element of the Proposed Development, it is anticipated that there will be a total of 180 arrivals of cars and light vehicles over an 3-month period.

6.1.6 Based on these assumptions, staff transport cars and light vehicles would account for a maximum of 88 vehicle trips (approximately 44 inbound and 44 outbound) per day during the peak period of construction.

Abnormal Indivisible Load Deliveries

6.1.7 The turbines are broken down into components for transport to the Site. The nacelle, blade, and tower sections are classified as Abnormal Indivisible Loads (AIL) due to their weight, length, width, and height when loaded. For the purposes of the report, the 'worst case' numbers of components requiring transport are illustrated in Table 6. There is potential for the lower towers to be constructed of concrete, however, for the purpose of this assessment it is assumed that all tower sections will be delivered to Site as abnormal loads.

Table 6 Turbine Components

Component	Number of Components per Turbine
Rotor Blades	3
Tower Sections	5
Nacelle	1
Hub	1
Drive Train	1
Nose Cone	1
Transformer	1
Ancillary	1
Site Parts	0.2

6.1.8 In addition to the turbine deliveries, two high-capacity erection cranes would be needed to offload a number of components and erect the turbines. The cranes are likely to be mobile cranes with a capacity up to 1,000 tonnes that are escorted by boom and ballast trucks to allow full mobilisation on-site. Smaller erector cranes would also be present to allow the assembly of the main cranes and to ease the overall erection of the turbines.

6.1.9 Escort vehicles would accompany the AIL convoys to support the traffic management measures. Up to three vehicles would be deployed and it is assumed that three turbine components would be delivered per convoy.

General Deliveries

6.1.10 Throughout the construction phase, general deliveries will be made to the Site by means of HGV. These would include fuel, site office, and staff welfare. At the height of construction, it is assumed that up to 40 journeys to Site are made (20 in and 20 out) per month.

Material Deliveries

6.1.11 Various materials will need to be delivered to Site to form the site-based infrastructure. At the outset, HGV deliveries will deliver plant and initial material deliveries to the Site to enable the formation of the site compound and to deliver construction machinery.

6.1.12 It is proposed that a concrete batching plant is to be located on-site. All turbine and substation foundation concrete will therefore be mixed on-site, with 100% of deliveries of cement powder, water and sand being delivered by HGV tankers. For the purpose of this assessment, it is assumed that concrete materials such as cement and water will arrive to the Site from the north via the M74. It is assumed that all of the required sand and concrete aggregate will be delivered to the Site from the quarry located along the B7078. It is assumed that 2,010 journeys to the Site (1,005 inbound and 1,005 outbound) will be made delivering concrete materials.

6.1.13 Reinforcements required in the foundations across the Site are detailed in Table 7.

Table 7 Steel Reinforcement Deliveries

Element	Weight / Installation (t)	Total Weight (t)	Lorry Capacity (t)	Inbound Trips	Total Journeys
Turbine Foundation	150	3,300	30	1,005	2,010
Substation and BESS Foundations	20	20	30	1	2

6.1.14 It is likely that on-site access tracks will be at least partially constructed from crushed rock and material won from the Site via the borrow pit(s). This material would also be used to help create the crane pads, compound areas, batching plant and substation. It is anticipated that the on-site borrow pits will be able to supply 100% of the required stone material, however, in order to provide a robust assessment, the trip generation calculations assume that 100% of stone material for capping and 100% of stone material for fill will be delivered to the Site. It is assumed that stone material will be delivered from the quarry located along the B7078, to the south of the accesses to the Site. Therefore, as a robust assessment, this TA assumes that a total of 23,656 HGVs (11,828 inbound trips and 11,828 outbound trips) will deliver this aggregate material to the Site.

6.1.15 The access tracks would generally be 5 m in width and would be designed to accommodate construction load axle loads. In addition to the roads, crane pads will be constructed to enable the turbine erection process. The tracks, crane pads, and compounds will require geotextile in the foundations.

6.1.16 Geotextile will be delivered to Site in rolls. A total of 630 large rolls may be required at Site and would be delivered by HGV.

6.1.17 Cables will connect each turbine to the internal substation and control building. Trip estimates for the cable materials are provided below in Table 8 and Table 9.

6.1.18 Three cables are to be provided within each cable trench and would be backfilled with cable sand. The cable materials would be likely sourced from along the M74, to the north.

Table 8 Cable Trip Estimate

Element	Total Cable Length (m)	Length per Drum (m)	Number of Drums	Inbound Trips	Total Journeys
Cables	76,200	500	152	17	34

Table 9 Cable Sand Trip Estimate

Element	Volume (m3)	Lorry Capacity (t)	Inbound Trips	Total Journeys
Cable Sand	8,573	20	686	1,372

6.1.19 It is assumed that 22 journeys (11 inbound trips and 11 outbound trips) would be required to deliver ducting materials.

6.1.20 A substation will be constructed on the Site. This will require deliveries of building materials and structural elements and would result in 1,056 journeys. Deliveries associated with battery materials would result in 192 journeys.

6.1.21 The solar element of the Proposed Development would result in a total of 108 journeys (54 inbound trips and 54 outbound trips) and would include the delivery of solar panels, invertors, switchgear and mounting frames. Cables associated with the solar element have been assumed to be included in the General Site Deliveries trips.

6.1.22 In order to accommodate the access to the turbine development area and to improve the hydrology serving the Red Moss SAC/SSSI, it is assumed that forestry extraction will be required on-site which will result in an additional 40 journeys.

6.1.23 The resulting traffic generation estimates have been plotted onto the indicative construction programme outlined in Chapter 2: Development Description of the EIAR to illustrate the peak journeys on the network. Table 10 illustrates the trip generation throughout the construction programme.

6.1.24

Table 10 Construction Traffic Profile

Activity	Class	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
Site Establishment & Remediation	HGV	24	24	24															
General Site Deliveries	HGV	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40
Timber Extraction	HGV		20	20															
Bulk Material Deliveries - Site Compound	HGV		995					995	995	995	995								
Bulk Material Deliveries - Access Tracks WF	HGV	787	787	787	787	787	787	787	787	787	787	787	787						
Bulk Material Deliveries - Access Tracks Solar	HGV								445	445	445	445	445	445					
Bulk Material Deliveries - Hardstandings	HGV				689	689	689	689	689	689	689	689							
Concrete Deliveries (Cement and Water)	HGV						71	71	71	71	71	71	71	71	71				
Concrete Deliveries (Aggregate and Sand)	HGV						152	152	152	152	152	152	152	152	152				
Reinforcement Deliveries	HGV						25	25	25	25	25	25	25	25	25				
Cable & Ducting Deliveries	HGV								11	11	11	11	11						
Cabling Sand	HGV								274	274	274	274	274						
Geotextile Deliveries	HGV	16			16			16		16									
Substation & Energy Storage	HGV										352	352	352						
Cranage Deliveries	HGV														30			30	
AIL Deliveries	HGV														156	156	156	156	
Solar Array	HGV													27	27	27	27		
Battery Storage	HGV											64	64	64					
Commissioning & Reinstatement	Car & LGV																120	120	90
AIL Escorts	Car & LGV														122	122	122	122	
Staff	Car & LGV	968	968	1,936	1,936	1,936	1,936	1,936	1,936	1,936	1,936	1,996	1,996	4,152	4,092	4,092	4,092	968	968
Total HGV	HGV	*867*	*1,866*	*871*	*1,532*	*1,516*	*1,764*	*2,774*	*3,489*	*3,505*	*3,841*	*2,911*	*2,222*	*824*	*501*	*223*	*223*	*226*	*40*
Total Cars / LGV	Car & LGV	*968*	*968*	*1,936*	*1,936*	*1,936*	*1,936*	*1,936*	*1,936*	*1,936*	*1,936*	*1,996*	*1,996*	*4,152*	*4,214*	*4,214*	*4,334*	*1,210*	*1,058*
Total Movements		**1,835**	**2,834**	**2,807**	**3,468**	**3,452**	**3,700**	**4,710**	**5,425**	**5,441**	**5,777**	**4,907**	**4,218**	**4,976**	**4,715**	**4,437**	**4,557**	**1,436**	**1,098**
Total HGV per Day		39	85	40	70	69	80	126	159	159	175	132	101	37	23	10	10	10	2
Total Cars / LGV per Day		44	44	88	88	88	88	88	88	88	88	91	91	189	192	192	197	55	48
Total per Day		**83**	**129**	**128**	**158**	**157**	**168**	**214**	**247**	**247**	**263**	**223**	**192**	**226**	**214**	**202**	**207**	**65**	**50**

Please note minor variances due to rounding may occur.

* It is assumed that there are 22 working days per month

6.1.25 The peak of construction occurs in Month 10 with 263 average daily journeys (88 Car / Lights and 175 HGV journeys).

Distribution of Construction Trips

6.1.26 The distribution of Proposed Development traffic on the network will vary depending on the types of loads being transported. The assumptions for the distribution of construction traffic during the peak months would be as follows:

- All HGV construction traffic, excluding AIL delivery vehicles, will enter the Site through the appropriate access junctions along the B7078, B740 and A702. All AIL delivery vehiclesfor the east of the site will access the Site through the newly constructed access junction along the M74 leading to the eastern side of the Site. The remaining AIL deliveries will be via the new access points on the B7078;
- Deliveries associated with stone materials for tracks and hardstandings are expected to be delivered from the quarries off the B7078 or from further afield via the M74;
- Cement and water deliveries associated with the batching of concrete on Site will arrive from the north via the M74. Sand and aggregate materials for use in the on-site batching plant will be sourced from local quarries. As a worst-case assessment, it is assumed that all material will be sourced from a concrete plant to the north of the Site via the M74 and access the Site from the B7078 and B740. The Balance of Plant (BoP) contractor will confirm final quarry and material sourcing with SLC in the Construction Traffic Management Plan (CTMP);
- HGV deliveries associated with the substation electrical installation, control buildings, batteries, inverters etc will arrive from the north via the M74 and B7078 route;
- Staff working at the Site are likely to be based locally. It is assumed that 40% of staff will arrive from Douglas, 20% from locations accessing the Site via the A70, 20% from the north via the M74, and 20% from the southeast (10% from the M74 south and 10% from the A702); and
- General Site deliveries will arrive from the north via the M74 and B7078 to Site. These are generally smaller rigid HGV vehicles.

6.1.27 Loads relating to the turbine components would be delivered from the proposed Port of Entry (PoE) at King George V (KGV) Docks on the Clyde. The port is the closest, suitable port to Site and as such is in line with the Government's "Water Preferred" policy towards AIL movements.

6.1.28 The AIL access route from KGV to the M74 and B7078, is as follows:

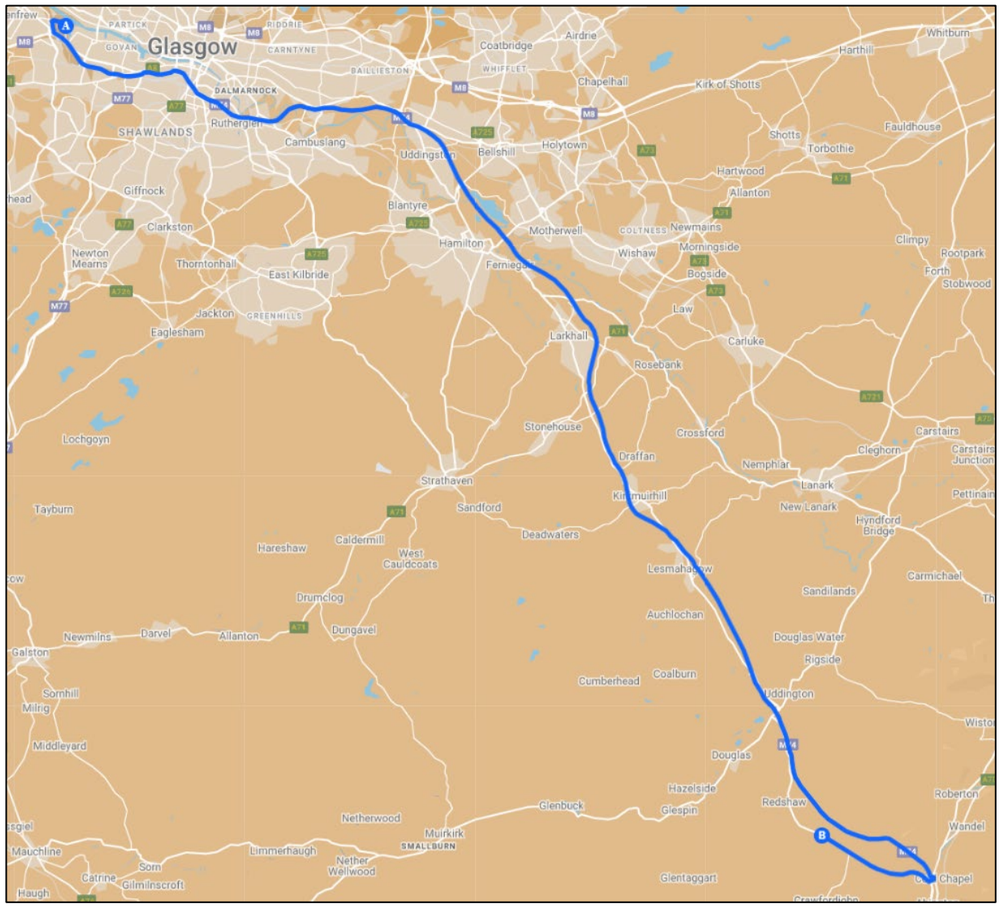
- Loads will exit the east gate from KGV Dock taking the second exit at the roundabout heading north west on Kings Inch Drive;
- Loads will take the second exit at the roundabout to stay on Kings inch Drive;
- Loads will turn left at the Kings Inch Drive / Mayo Avenue Junction;
- Loads will merge onto M8 via the ramp to Glasgow;
- Loads will take the M74 exit toward Carlisle;
- Loads for the area east of the M74 will depart the M74 at the bespoke access junction. All other loads will continue southbound;
- At Junction 13 of the M74, loads will depart the motorway;
- At the roundabout, loads will take the 5th exit onto A702;
- At the roundabout, loads will take the 2nd exit onto B7078; and
- Loads will proceed to their respective access junctions.

6.1.29 Loads for the development area to the north of the M74 will use a temporary access that is to be constructed as part of the Proposed Development. This access will be controlled and only used for AIL access and will be removed following deliveries. It is recommended that a detailed traffic management plan for the operation of the temporary access will be secured via planning condition and agreed with Transport Scotland and Police Scotland. Agreement in principle has been secured for the junction.

6.1.30 All other AIL loads will access via the B7078, having departed the M74 at Junction 13.

6.1.31 The proposed AIL access route is illustrated in Figure 9. A copy of the Route Survey Report for the proposed AIL loads is provided in Appendix B.

Figure 9 Proposed AIL Access Route



Peak Construction Traffic

6.1.32 Following the distribution and assignment of traffic flows to the Study Area network, the resultant daily traffic during the peak of construction are summarised in Table 11.

Table 11 Peak Construction Traffic

Site ID	Survey Location	Cars & LGVs	HGVs	Total
1	B7078, between M74 Junction 13 and A70	70	155	226
2	A70, between B7078 junction and Junction 12 of the M74	18	0	18
3	A70, between M74 Junction 12 and Rigside	18	0	18
4	M74, between junction 11 and junction 12	18	19	37
5	A70, West of Douglas	35	0	35
6	A702, between M74 Junction 13 and A73 / A702 Roundabout	9	0	9
7	M74, between junction 12 and junction 13	18	19	37
8	M74, between junction 13 and junction 14	9	0	9

Please note minor variances due to rounding may occur

Committed Developments

6.1.33 Kennoxhead Wind Farm (Planning Ref. P/19/1145) and Kennoxhead Wind Farm Extension (Planning Ref. P/20/0495) are located within 5 km of the Proposed Development. These developments are expected to both be operational in 2024, prior to the commencement of construction on the Proposed Development in 2027. Kennoxhead Extension II (Planning Ref. P/20/0495) was consented in February 2023 and is to comprise a total of eight wind turbines with a maximum tip height of 220 m. A review of the Kennoxhead Extension II Wind Farm's online planning documents indicate that the proposal's construction traffic will impact on the Proposed Development's study area.

6.1.34 Priestgill Wind Farm (Planning Ref. P/19/1803) was granted planning consent in March 2021 and is to comprise a total of seven wind turbines with a maximum tip height up to 200 m. Following a review of the online planning application documents, it is expected that construction traffic associated with Priestgill Wind Farm will impact on the Proposed Development's study area.

6.1.35 Planning permission was granted for two wind turbines (P/19/0363) with a maximum tip height of 98.14 m at Birkhill in February 2020. A review of the available online planning documents does not show any construction trip information. An updated planning application (P/23/0020) has been submitted for the erection of two wind turbines with a maximum tip height of 99.99m in January 2023. Due to lack of information, this development has been excluded.

6.1.36 Traffic flows associated with the consented wind farm developments detailed above have not been included in the 2028 Baseline Flows as the construction trips associated with the consented wind farms are temporary in nature and the inclusion of these traffic flows in the baseline will dilute the potential impact that the Proposed Development will have. The approach taken is therefore considered to be an overly robust assessment.

6.1.37 In order to inform the planning authorities of possible issues if the consented wind farm sites were to be constructed concurrently with the Proposed Development and have overlapping peak construction timescales a combined sensitivity review assessment has been undertaken including Kennoxhead Extension II, Priestgill Wind Farm and Cumberhead Wind Farm as part of the cumulative assessment in Chapter 9 of the EIAR.

6.1.38 The use of low NRTF growth factors for background traffic is considered robust for addressing smaller, non-significant traffic generation caused by smaller developments within the study area. As such, a robust assessment case has been provided in this report.

Decommissioning Phase

6.1.39 Prior to decommissioning of the Site, a traffic assessment would be undertaken and appropriate traffic management procedures followed.

6.1.40 The decommissioning phase would result in fewer trips on the road network than the construction phase as it is considered likely that elements of infrastructure such as access tracks would be left in place and structures may be broken up on-site to allow transport by a reduced number of HGV.

7 Traffic Impact Assessment

Construction Impact

7.1.1 The peak month traffic data was combined with the future year (2028) 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 12.

Table 12 Peak Daily Construction Traffic

Site ID	Survey Location	Cars & LGVs	HGVs	Total	Cars / LGVs % Increase	HGV % Increase	Total % Increase
1	B7078, between M74 Junction 13 and A70	679	463	1,142	11.57%	50.57%	24.66%
2	A70, between B7078 junction and Junction 12 of the M74	3,671	1,126	4,797	0.48%	0.00%	0.37%
3	A70, between M74 Junction 12 and Rigside	3,548	808	4,356	0.50%	0.00%	0.41%
4	M74, between junction 11 and junction 12	24,300	9,653	33,953	0.07%	0.20%	0.11%
5	A70, West of Douglas	1,781	299	2,080	2.02%	0.00%	1.72%
6	A702, between M74 Junction 13 and A73 / A702 Roundabout	5,991	852	6,843	0.15%	0.00%	0.13%
7	M74, between junction 12 and junction 13	24,384	11,476	35,860	0.07%	0.17%	0.10%
8	M74, between junction 13 and junction 14	26,512	12,333	38,844	0.03%	0.00%	0.02%

Please note minor variances may occur due to rounding

7.1.2 The total traffic movements are not predicted to increase by more than 30% overall on all of the study network. The percentage increase in HGVs is however above 30% on the B7078, where it reaches 51%.

7.1.3 The total increase in traffic levels in all locations outwith the B7078 are below 10%.

7.1.4 It should be noted that the construction phase is transitory in nature and the peak of construction activities is short-lived.

7.1.5 A review of existing road capacity has been undertaken using the Design Manual for Roads and Bridges, Volume 15, Part 5 "The NESA Manual". 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 13.

Table 13 2028 Daily Traffic Data (12-hour)

Site ID	Survey Location	2028 Baseline Traffic	2028 Baseline + Development Flows	Theoretical Capacity	Spare Road Capacity %
1	B7078, between M74 Junction 13 and A70	916	1,142	28,800	96%
2	A70, between B7078 junction and Junction 12 of the M74	4,780	4,797	28,800	83%
3	A70, between M74 Junction 12 and Rigside	4,339	4,356	21,600	80%

Site ID	Survey Location	2028 Baseline Traffic	2028 Baseline + Development Flows	Theoretical Capacity	Spare Road Capacity %
4	M74, between junction 11 and junction 12	33,916	33,953	91,200	63%
5	A70, West of Douglas	2,045	2,080	21,600	90%
6	A702, between M74 Junction 13 and A73 / A702 Roundabout	6,834	6,843	28,800	76%
7	M74, between junction 12 and junction 13	35,823	35,860	136,800	74%
8	M74, between junction 13 and junction 14	38,836	38,844	136,800	72%

Please note minor variances may occur due to rounding

7.1.6 The results indicate there are no road capacity issues with the Proposed Development and ample spare capacity exists within the trunk and local road network to accommodate construction phase traffic.

7.1.7 The location with the greatest increase in traffic as a result of construction traffic associated with the Proposed Development, B7078, shows the highest levels of spare road capacity available after the addition of construction traffic.

8 Proposed Traffic Mitigation Measures

Construction Phase

8.1.1 The following measures will be implemented through a Construction Traffic Management Plan (CTMP during the construction phase. The CTMP will be agreed with SLC prior to construction works commencing:

- Agree AIL route modifications and improvements with SLC, TS and other relevant stakeholders.
- Where possible the detailed design process will minimise the volume of material to be imported to Site to help reduce HGV numbers;
- A site worker transport and travel arrangement plan, including transport modes to and from the worksite (including pick up and drop off times);
- An AIL Traffic Management Plan;
- All materials delivery lorries (dry materials) will be sheeted to reduce dust and stop spillage on public roads;
- Specific training and disciplinary measures will 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 SLC;
- Normal site working hours will be limited to between 0700 and 1900 (Monday to Friday) and 0700 and 1300 (Saturday) with the exception of any emergency working or turbine deliveries. During the installation phase, there may be the requirement for extended working as some critical elements of installation cannot be stopped once started, such as concrete pouring. Activities outside of normal working hours, such as component delivery and turbine erection, would be discussed and agreed with SLC;
- Appropriate traffic management measures will be put in place on the M74, B7078, B740 and A70 in the vicinity of the access junctions providing access to the Site to avoid conflict with general traffic, subject to the agreement of the roads authority. Typical measures will include HGV turning and crossing signs and/ or banksmen at the Site access and warning signs;
- Provide construction updates on the project website, blog or web-based communication tools which may include social media and or a newsletter to be distributed to residents within an agreed distance of the Site.
- Adoption of a voluntary speed limit of 15 mph for all construction vehicles along the B7078;
- All drivers will 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.

8.1.2 SLC may require an agreement to cover the cost of abnormal wear and tear on the B7078 and A70.

8.1.3 Video footage of the pre-construction phase condition of the abnormal loads access route and the construction vehicles route will be recorded to provide a baseline of the state of the road prior to any construction work commencing. This baseline will inform any change in the road condition during the construction stage of the Proposed Development. Any necessary repairs will be coordinated with the Roads Authority. Any damage caused by traffic associated with the Proposed Development, during the construction period that would be hazardous to public traffic, will be repaired immediately.

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

8.1.5 There will be a regular road edge review and any debris and mud will 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.

9 Abnormal Load Management Plan

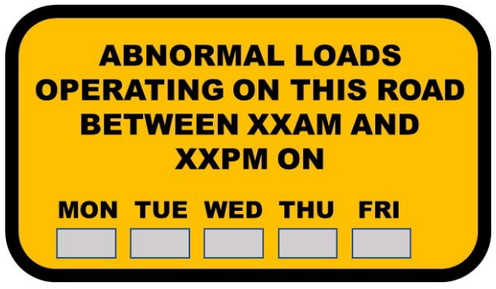
9.1.1 There are a number of traffic management measures that could help reduce the effect of abnormal load convoys.

9.1.2 All abnormal load deliveries will be undertaken at appropriate times (to be discussed and agreed with the relevant roads authorities and police) with the aim to minimise the effect on the local road network. It is likely that the abnormal load convoys will travel in the early morning periods, before peak times while general construction traffic will generally avoid the morning and evening peak periods.

9.1.3 The majority of potential conflicts between construction traffic and other road users will occur with abnormal load traffic. General construction traffic is not likely to come into conflict with other road users as the vehicles are smaller and road users are generally more accustomed to them.

9.1.4 Advance warning signs will be installed on the approaches to the affected road network. Information signage could be installed to help assist drivers and an example is illustrated in Figure 10. Flip up panels (shown in grey) will be used to mask over days where convoys would not be operating. When no convoys are moving, the sign would be bagged over by the traffic management contractor.

Figure 10 Example Information Sign



9.1.5 This signage will assist in helping improve driver information and allow other road users to consider alternative routes or times for their journey (where such options exist).

9.1.6 The location and numbers of signs will be agreed post consent and will form part of the wider Traffic Management Proposal for the project.

9.1.7 The Abnormal Load Transport Management Plan will also include:

- Procedures for liaising with the emergency services to ensure that police, fire, and ambulance vehicles are not impeded by the loads. This is normally undertaken by informing the emergency services of delivery times and dates, and agreeing communication protocols and lay over areas to allow overtaking;
- A diary of proposed delivery movements to liaise with the communities to avoid key dates;
- A protocol for working with local businesses to ensure the construction traffic does not interfere with deliveries or normal business traffic; and
- Proposals to establish a construction liaison committee to ensure the smooth management of the project. This will provide a public interface with the applicant, the construction contractors, the local community, and if appropriate, the police. This committee will form a means of communicating and updating on forthcoming activities and dealing with any potential issues arising.

10 Public Information

10.1.1 Information on the turbine convoys will be provided to local media outlets such as local papers and local radio to help assist the public.

10.1.2 Information will relate to expected vehicle movements from the port of entry through to the Site access junction. This will assist residents becoming aware of the convoy movements and may help reduce any potential conflicts.

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

11 Convoy System

11.1.1 A police escort will be required to facilitate the delivery of the predicted loads. The police escort will be further supplemented by a civilian pilot car to assist with the escort duty. It is proposed that an advance escort will warn oncoming vehicles ahead of the convoy, with one escort staying with the convoy at all times. The escorts and convoy will remain in radio contact at all times where possible.

11.1.2 The abnormal loads convoys will be no more than three AILs long, or as advised by the police, to permit safe transit along the delivery route and to allow limited overtaking opportunities for following traffic where it is safe to do so.

11.1.3 The times in which the convoys would travel will be agreed with Police Scotland who have sole discretion on when loads can be moved.

12 Operational Phase Mitigation

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

13 Summary and Conclusions

13.1.1 Pell Frischmann was commissioned to undertake a Transport Assessment for the proposed M74 West Wind Farm, by Ramboll UK Limited on behalf of Renewco Power Ltd.

13.1.2 Existing traffic data established a base point for determining the impact during the construction phase and was factored to future levels to help determine the effect of construction traffic on the local road network.

13.1.3 The construction traffic would result in a temporary increase in traffic flows on the road network surrounding the Proposed Development. The maximum traffic effect associated with construction of the Proposed Development is predicted to occur in Month 10 of the construction programme. During this month, an average of 175 heavy goods vehicle movements is predicted per day and it is estimated that there would be a further 88 car and light van movements per day to transport construction workers to and from the Site.

13.1.4 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.

13.1.5 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.

Appendix A: Indicative Wind Farm Junction Layout Drawings

LEGEND:

- PROPOSED EDGE OF CARRIAGEWAY
- VISIBILITY SPLAYS
- PROPOSED ROAD MARKING (Diag. No. 1010)
- AREA TO BE LEVELLED AND CLEAR OF OBSTRUCTIONS

NOTES:

1. 215m IS THE DESIRABLE STOPPING SITE DISTANCE REQUIRED FOR THAE MAIN ROAD AND IT'S DESIGN SPEED OF 100kph.
2. 160m IS THE STOPPING SITE DISTANCE THAT IS THE ALLOWABLE RELAXATION FROM THE DESIRED DISTANCE.

Rev	Description	Date	By	Chk	App
P03	PRELIMINARY	26/06 2024	BH	CN	CN

RAMBOLL

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M74 WEST

SITE ENTRANCE A GENERAL ARRANGEMENT (SKETCH)

PRELIMINARY

Project No:	Scale (@A3):	Drawn:	Date:
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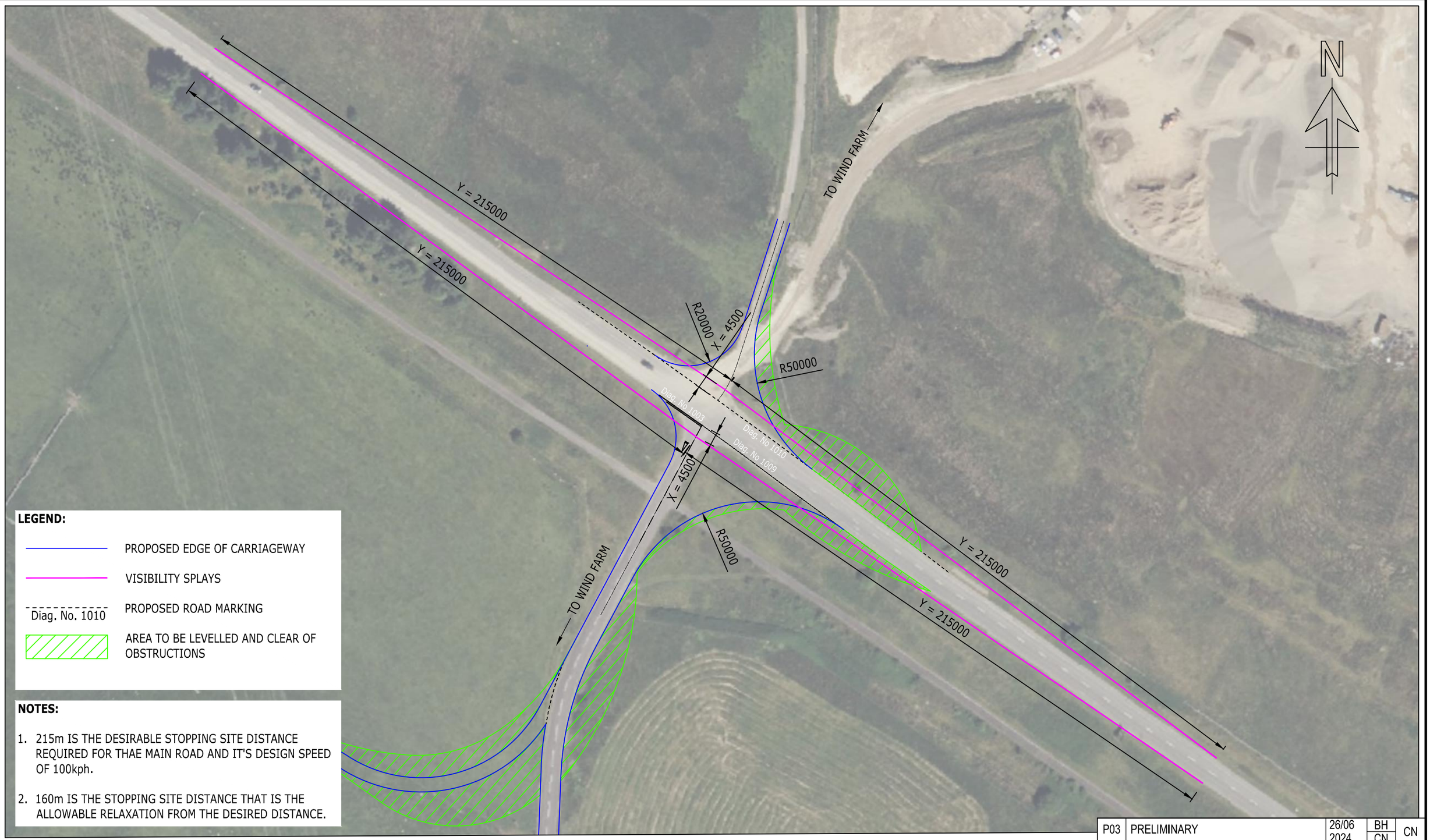
Drawing No: RAM-XX-XX-SK-C-0002

Rev: P03

07/08/2024 09:22:39



LEGEND:

- PROPOSED EDGE OF CARRIAGEWAY
- VISIBILITY SPLAYS
- PROPOSED ROAD MARKING — Diag. No. 1010
- AREA TO BE LEVELLED AND CLEAR OF OBSTRUCTIONS

NOTES:

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SITE ENTRANCE B & C GENERAL ARRANGEMENT (SKETCH)

PRELIMINARY

Project No:	Scale (@A3):	Drawn:	Date:
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Rev: P03

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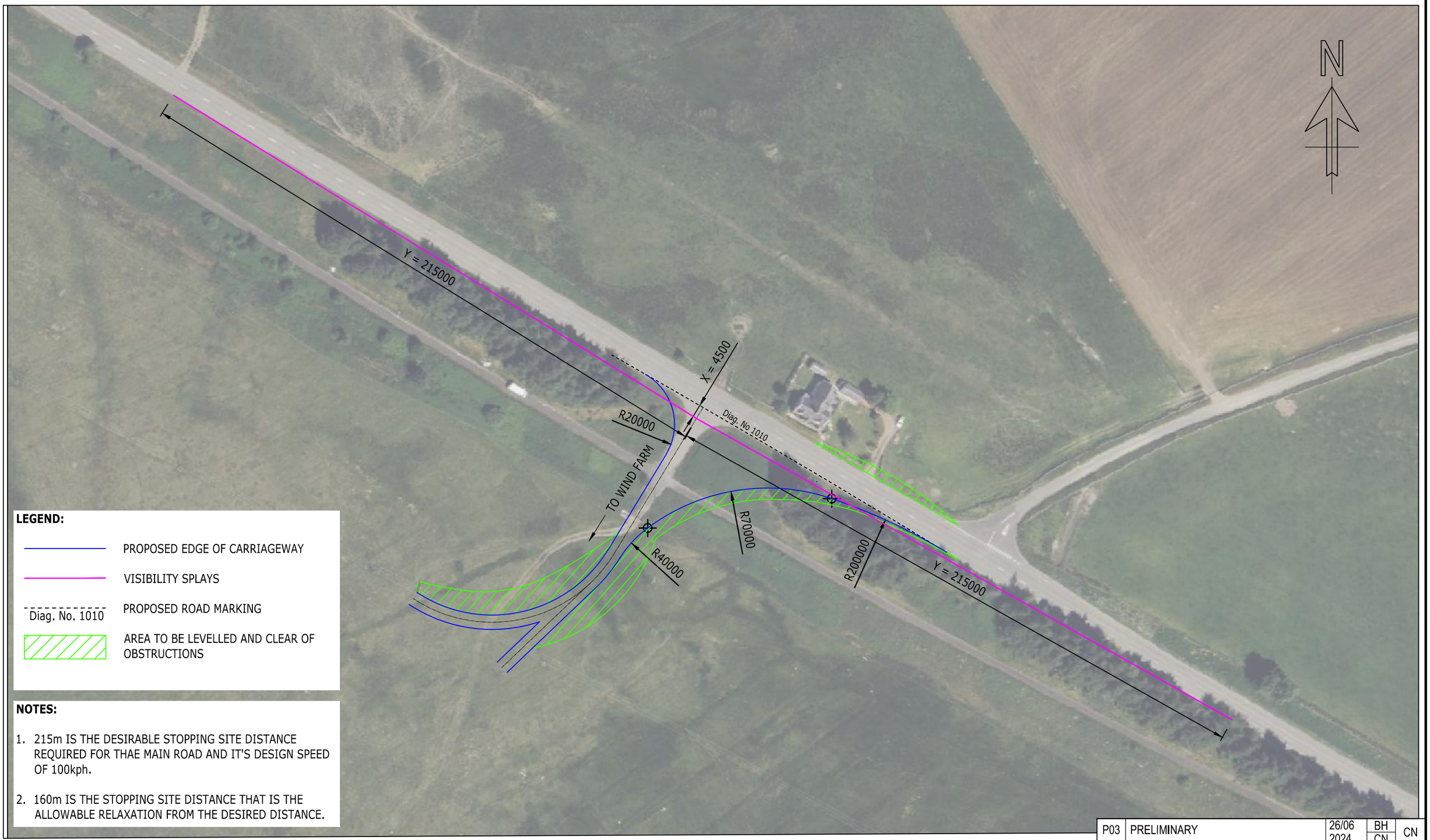

LEGEND:

- PROPOSED EDGE OF CARRIAGEWAY
- VISIBILITY SPLAYS
- Diag. No. 1010 — PROPOSED ROAD MARKING
- AREA TO BE LEVELLED AND CLEAR OF OBSTRUCTIONS

NOTES:

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Rev	Description	Date	By	Chk	App
P03	PRELIMINARY	26/06 2024	BH	CN	CN

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M74 WEST

SITE ENTRANCE D GENERAL ARRANGEMENT (SKETCH)

PRELIMINARY

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Drawing No: RAM-XX-XX-SK-C-0004

Rev: P03

07/08/2024 09:23:33

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KEY:

- CROSS SECTIONS
- PROPOSED TEMPORARY ACCESS TRACK TO WIND FARM
- PROPOSED LOAD BEARING PLATES
- PROPOSED DITCH
- PROPOSED FILL EARTHWORKS
- PROPOSED CUT EARTHWORKS
- ASSUMED LIMIT OF ADOPTION

THE PROPOSED WORKS ARE TEMPORARY AND WILL BE DELETED UPON COMPLETION OF AIL DELIVERIES. THE BOUNDARY BETWEEN THE TRUNK ROAD AND WIND FARM SITE WILL BE RE-ESTABLISHED USING A SOCKET STYLE FENCING (OR SIMILAR).

THE DELIVERY OF AIL WILL BE UNDERTAKEN WITH LANE 1 CONED OFF IN ACCORDANCE WITH CHAPTER 8 OF THE TRAFFIC SIGNS MANUAL.

AN AIL TRAFFIC MANAGEMENT PLAN IS REQUIRED TO ENABLE DELIVERIES. ALL CONING TO SUPPORT THE OPERATION OF THE TEMPORARY ACCESS WILL BE RE-ESTABLISHED FOR EACH DELIVERY.

THE TEMPORARY ACCESS TRACK WILL BE METALLED NEAR THE M74 ACCESS POINT (UP TO CH 250). THE TRACK WILL THEN REVERT TO CRUSHED STONE CONSTRUCTION WITHIN THE SITE.

THE BOUNDARY EXTENTS BETWEEN THE TRUNK ROAD AND PRIVATE LAND WILL NOT BE ALTERED AS PART OF THESE TEMPORARY WORKS.

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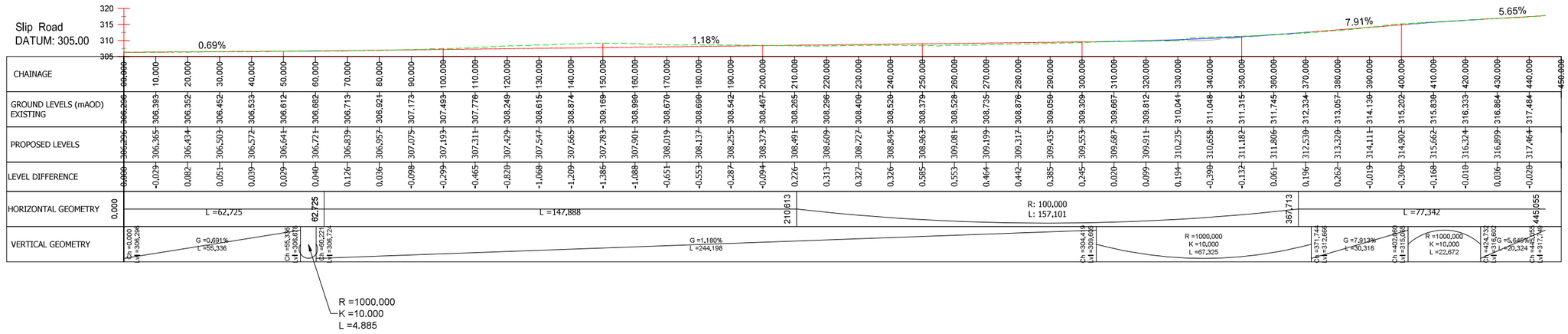
Client: Renewco

Project: M74 West

Drawing Title: General Arrangement

	Name	Date	
Designed	CN	06.02.2024	Scale 1:500 @ A1
Checked	GB	06.02.2024	File 240206 M74 West Access Design
			Drawing Status DRAFT

Drawing No. SK01 | Revision 2



NOTE:

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KEY:

EXISTING GROUND

PROPOSED LEVELS VERTICAL CURVE

PROPOSED LEVELS

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Client: Renewco

Project: M74 West

Drawing Title: Longsection

	Name	Date	
			Scale: Custom @ A1
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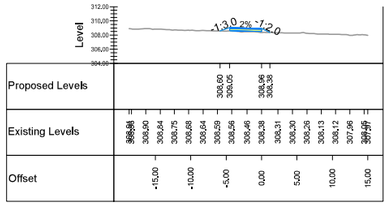
Checked	GB	06.02.2024	Drawing Status: DRAFT

Drawing No.: SK02

Revision: 2



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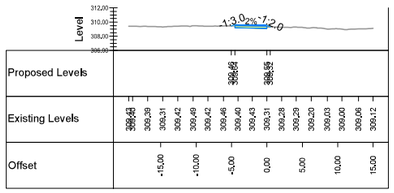

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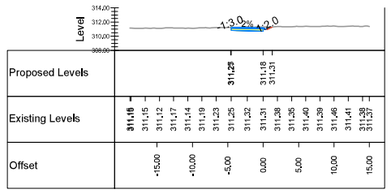

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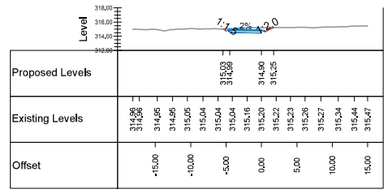

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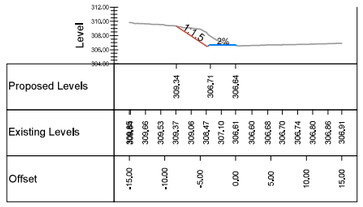

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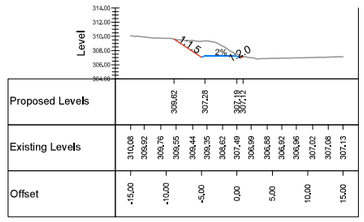

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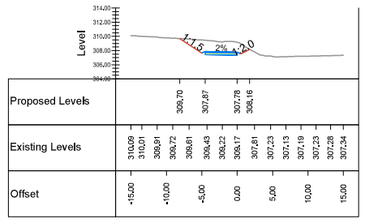

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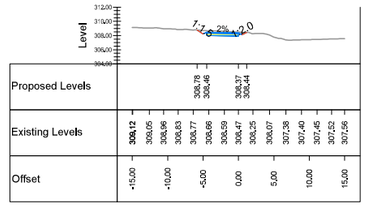

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KEY:

EXISTING GROUND

PROPOSED SURFACE

PROPOSED EARTHWORKS

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Renewco

Project

M74 West

Drawing Title

Cross Sections

	Name	Date	Scale	Custom @ A1
Designed	CN	06.02.2024	File	240206 M74 West Access Design
Checked	GB	06.02.2024	Drawing Status	DRAFT

Drawing No. SK03

Revision 2

NOTE:

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KEY:

- VEHICLE WHEELS
- VEHICLE BODY
- VEHICLE LOAD
- ASSUMED LIMIT OF ROAD ADPTION

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Project: M74 West

Drawing Title: Swept Path Analysis

	Name	Date	
			Scale: Custom @ A1
Designed	CN	06.02.2024	File: 240206 M74 West Access Design
Checked	GB	06.02.2024	Drawing Status: DRAFT

Drawing No.: SK04

Revision: 2