

EIA VOLUME 2 Chapter 9 Technical Appendices 9.1



Kilfinnan Road Upgrade – Corie Glas

784-B041696

Appendix A.10 – Transport Assessment

Revision 04

November 2023

SSE Renewables



Document Control

Document:	Appendix A.10 – Transport Assessment
Project:	Kilfinnan Road Upgrade – Corie Glas
Client:	SSE Renewables
Project Number:	784-B041696
File Origin:	\\lds-dc-vm-101\Data\Projects\784-B041696 Corie Glas Kilfinnan Road\60. Project Output\

Revision:	01	Prepared by:	Hugh Mulholland
Date:	17/08/2023	Checked by:	Allan Spence
Status:	For Information	Approved By:	Peter Blair

Revision:	02	Prepared by:	Hugh Mulholland
Date:	06/09/2023	Checked by:	Allan Spence
Status:	Draft	Approved By:	Peter Blair

Revision:	03	Prepared by:	Hugh Mulholland
Date:	14/09/2023	Checked by:	Allan Spence
Status:	Final	Approved By:	Peter Blair

Revision:	04	Prepared by:	Hugh Mulholland
Date:	07/11/2023	Checked by:	Allan Spence
Status:	Final	Approved By:	Peter Blair

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1.0 Introduction

1.1 Preamble

- 1.1.1 Tetra Tech ("TT") was commissioned by SSE Renewables ("the Client") to undertake an assessment, on behalf of Coire Glas Hydro Pumped Storage Ltd. ("the Applicant"), of the transport aspects of the proposed Kilfinnan Road Upgrade, hereafter referred to as the 'Proposed Development' or 'the Site'. The Proposed Development is located in the Scottish Highlands, approximately, 70km southwest of Inverness.
- 1.1.2 The Proposed Development lies adjacent to the consented Corie Glas Hydro Pumped Storage scheme, hereafter referred to as "the Scheme". TT has previously produced a Transport Assessment (TA) to cover the Scheme.
- 1.1.3 The Site Location of the Proposed Development is indicated in Figure 10-1, in Appendix A.
- 1.1.4 This TA considers the Kilfinnan Road Upgrade as a stand-alone project.
- 1.1.5 Note that a variation of this Proposed Development was included in the Section 36 consent for the Scheme, therefore, the traffic and transport impacts in this application were also previously accounted for in the previous Section 36 consent.
- 1.1.6 This TA identifies the key transport and access matters associated with the Proposed Development, including the proposed routing for construction traffic. The TA identifies the predicted number and distribution of construction traffic two-way vehicle movements and details where mitigation measures are required, as appropriate, to accommodate these proposed movements.
- 1.1.7 The TA considers the effects during the construction phase of the Proposed Development, when volumes of traffic generation are anticipated to be at their greatest due to the delivery and removal of equipment and construction materials from Site. In line with Guidance for the Environmental Assessment of Road Traffic (IEMA), severance, driver delay, pedestrian delay, pedestrian amenity, fear and intimidation, as well as accidents and safety have been evaluated in isolation, for the proposed Kilfinnan Road Upgrade. Additionally, these receptors were evaluated cumulatively, considering other committed and in-planning developments, to produce a worst-case scenario. Due to the nature of the Proposed Development, it is not feasible to evaluate the effects on the public road network during its operational phase.
- 1.1.8 General construction traffic is likely to approach the Site from the north or the south via the A82, both joining Kilfinnan Road before entering the Proposed Development.
- 1.1.9 This TA has been prepared in accordance with instructions from the Applicant on the above project details. No liability is accepted for the use of all or part of this report by third parties. This report is Copyright © 2023 of Tetra Tech and SSE Renewables.

1.2 Report Structure

- 1.2.1 Following this introductory chapter, the TA is structured as follows:
 - Chapter Two describes the Proposed Development and the basic details of the Scheme;
 - Chapter Three sets out details of relevant local and national policy and guidance;
 - Chapter Four sets out the assessment stages considered within this TA;
 - Chapter Five details the baseline transport conditions encountered within the study area;
 - Chapter Six sets out estimates of development traffic flows;
 - Chapter Seven provides details of the traffic impact assessment;
 - Chapter Eight sets out the construction traffic management proposals; and
 - Chapter Nine summarises the findings of the TA and outlines the key conclusions.

2.0 Proposed Development

2.1 Scheme Works – Coire Glas Hydro Pumped Storage

- 2.1.1 Consent for the Scheme was issued in October 2020 (ref. ECU00000577) via Section 36 of the Electricity Act 1989, with a deemed planning permission under Section 57(2) of the Town and Country Planning (Scotland) Act 1997.
- 2.1.2 The approved Scheme is located above the northwest shore of Loch Lochy in Lochaber. The lower works site will be located in the Clunes Forest, close to the shore of Loch Lochy. To facilitate these works, additional vehicular traffic, including abnormal load movements, will travel from the A82 along Kilfinnan Road.

2.2 Proposed Development Works - Kilfinnan Road Upgrade

- 2.2.1 Kilfinnan Road is typically a single-track road, approximately 3.5m wide with passing places along its length. The road itself is low lying, cut into the slope of the hill, and is undulating with grass verges along most of its route. At various points, the road abuts commercial forestry or other vegetation, property fences, and crosses over a number of watercourses.
- 2.2.2 The Proposed Development includes works to sections of road to an adopted standard (from the junction with the A82 up to and including Kilfinnan Bridge) and to sections of road to a non-adopted standard (from Kilfinnan Bridge to the forestry gate of Clunes Forest). The total Site area, including any working corridors, will be 37.8ha. The Proposed Development includes the following works:
 - Widening of the junction with the A82 to achieve the required swept path for abnormal loads. The details on the works required at the junction are shown in Drawing 889-0804-1005-012, in Appendix B;
 - During construction, an offline temporary diversion road (immediately south of Kilfinnan Road), for use by residents and visitors to the area, is proposed to avoid pinch points along the route due to the current road topography and geometry. This road diversion will be reinstated following the completion of the upgrade works. The extents of the temporary diversion road are shown in drawing LH000012-COIG-SID-SD-0002-03, sheet 1 16, in Appendix B;
 - Offline construction of new sections of road where the existing road geometry and local physical constraints are unsuited to upgrade works;
 - A new bridge across the Kilfinnan Burn will be required, as well as other water course crossings;
 - A working construction corridor will be required along the route for maintaining access to road users, development activity, spoil and materials storage and Site compounds;
 - Verge widening and localised works along the road length, tying up with existing accesses;
 and

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- Road upgrades including modifications to the horizontal and vertical alignment, installation
 of drainage; installation of services and associated earthworks/engineering as required to
 construct the road.
- 2.2.3 The Operational Phase of the Proposed Development will be split in two distinct stages:
 - Operational Phase 1 will cover the period of time when the road will act as a construction route for the Scheme. Expected duration of Phase 1 is 10 years; and
 - Operational Phase 2 will cover the period of time when the road is restored to single-track operation for use as a local access, with passing places along its length.
- 2.2.4 Phase 2 will therefore require some reinstatement works to downgrade the road from two-way to single track operation with passing places.
- 2.2.5 The Kilfinnan Road Construction drawings for the Proposed Development are displayed in Appendix B.

3.0 Policy Context

3.1 Introduction

3.1.1 A review of relevant transport and planning policies has been undertaken and is summarised below. The review provides the basis for the wider regional development context.

3.2 National Policy

Scottish National Planning Framework 4 (NPF4)

3.2.1 The Scottish NPF is a long-term plan looking to 2045 that guides spatial development, sets out planning policies, designates national developments and highlights spatial priorities. It is a long-term plan for Scotland that sets out where development and infrastructure is needed. Scotland's fourth NPF was laid in the Scottish Parliament on February 13th, 2023.

Scottish Planning Policy (2014)

3.2.2 In relation to transport and access matters, Scottish Planning Policy notes:

"286. Where a new development or a change of use is likely to generate a significant increase in the number of trips, a transport assessment should be carried out. This should identify any potential cumulative effects which need to be addressed; and

290. Development proposals that have the potential to affect the performance or safety of the strategic transport network need to be fully assessed to determine their impact. Where existing infrastructure has the capacity to accommodate a development without adverse impacts on safety or unacceptable impacts on operational performance, further investment in the network is not likely to be required. Where such investment is required, the cost of the mitigation measures required to ensure the continued safe and effective operation of the network will have to be met by the developer."

Planning Advice Note (PAN) 75

3.2.3 PAN75: 'Planning for Transport' provides advice on the requirements for Transport Assessments as follows:

"40. ...requires a 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)

- 3.2.4 Transport Scotland's (TS) Transport Assessment Guidance was published in 2012. It aims to assist in the preparation of a TA 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.
- 3.2.5 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.

Guidance for the Environmental Assessment of Road Traffic, IEMA (1993)

3.2.6 The document includes guidance on how the sensitivity of receptors should be assessed, contains rules to help determine which links in the study area should be considered for detailed assessment, and identifies the key impacts that are most important when assessing the magnitude of traffic effects from an individual development.

Design Manual for Roads and Bridges, LA 104: Environmental Assessment and Monitoring

3.2.7 The document sets out the requirements for environmental assessment of projects, including reporting and monitoring of significant adverse environmental effects.

3.3 Local Policy

The Highland Council (THC) The Highland-wide Local Development Plan (HwLDP), 2012

- 3.3.1 On the 5th of April 2012 the HwLDP was adopted by THC and was constituted as the local development plan in law. It sets out the overarching spatial planning policy for the whole of THC's area, except the area covered by the Cairngorms National Park Local Plan, for the next 20 years.
- 3.3.2 The HwLDP states the follows:
 - "22.1.1. The Highland area has great potential for renewable energy production and to contribute towards meeting ambitious targets set internationally, nationally and regionally. This is recognised in the Highland Renewable Energy Strategy (2006) and can bring benefits in terms of tackling climate change, increasing energy security and contributing to the local and regional economies of the Highlands."

The Highland Council (THC) Local Transport Strategy (LTS), 2010

- 3.3.3 The LTS sets out THC's aims, objectives, policies and strategies addressing transport issues.
- 3.3.4 Through its LTS, THC seeks to enable and facilitate development and economic growth; support, include and empower communities, and create safe and sustainable environments in which people can live, work and travel.



4.0 Assessment Stages

4.1 Assessment Considerations

- 4.1.1 There is only one stage that this TA will consider:
 - The Construction Phase of the Proposed Development.
- 4.1.2 As will be discussed in section 7.2, it is not feasible to evaluate the effects on the public road network during its operational phase.
- 4.1.3 As will be discussed in section 7.3, it is not envisaged that Kilfinnan Road will ever be decommissioned.
- 4.1.4 Therefore, the 'worst case' transport scenario is the construction phase, and this assessment will concentrate on this phase of the Proposed Development. It should be noted, however, that the construction effects will be short lived and temporary in nature.

5.0 Baseline Conditions

5.1 Road Network

- 5.1.1 The road network included in this TA was identified through an assessment of the likely routes utilised by suppliers of equipment and materials to the Site. Roads forming the study area are shown in Figure 10-2, Appendix A, and include:
 - Kilfinnan Road, at its northern end, towards its junction with the A82, and at its southern end, at the forestry gate of Clunes Forest; and
 - The A82, at its northern end, to the north of Invergarry, and at its southern end, to the north
 of Stronaba.
- 5.1.2 A brief summary of the characteristics of each section of road is provided below:
 - Kilfinnan Road is a single-track road subject to the national speed limit, used for local access and forestry/farming haulage; and
 - The A82 is a two-way rural single carriageway trunk road subject to the national speed limits along most of its route.

5.2 Data Collection Methodology

- 5.2.1 To determine the existing road usage, 2022 Annual Average Daily Traffic Flow (AADT) data from two sites were extracted from the online Transport Scotland (TS) databases of count sites. The locations of the traffic count sites are illustrated in Figure 10-2 and are as follows:
 - 1 A82 north of Invergarry village (TS Count Point 0000ATC01037); and
 - 2 A82 north of Stronaba (TS Count Point 0000ATC01036).
- 5.2.2 As well as the information available from the databases, one Automatic Traffic Count (ATC) was deployed at the northern end of Kilfinnan Road, where no data was previously available.

5.3 Existing Traffic Conditions

- 5.3.1 The traffic counters and ATC allowed the traffic flows to be split into vehicle classes. The data has been summarised into cars and light goods vehicles (LGVs) and Heavy Good Vehicles ((HGVs)all goods vehicles > 3.5 tonnes gross maximum weight).
- 5.3.2 The National Road Traffic Forecast (NRTF) high growth factor for 2022 to 2023 is 1.0121 and this factor was applied to the 2022 TS count data (0000ATC01036 and 0000ATC01037).
- 5.3.3 Table TN10-1 summarises the 24-hour average daily traffic data collected at the count and ATC sites.

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Table TN10-1: Existing (2023) Traffic Flows (Daily Average Two-Way Flows)

Survey Location	Cars & LGVs	HGVs	Total
Kilfinnan Road north (ATC North Site)	240	23	263
A82, north of Invergarry (TS Count Point 0000ATC01037)	2,026	545	2,571
A82, north of Stronaba (TS Count Point 0000ATC01036)	3,187	777	3,964

5.4 Baseline Traffic Conditions

- 5.4.1 Construction of the Proposed Development is likely to take 18 months with construction traffic expected to peak in early-2026, depending on when consent of the Proposed Development is granted.
- 5.4.2 Any lengthening in the construction programme for the Proposed Development will have a reduced effect on the surrounding road network in terms of peak period trip generation.
- 5.4.3 Future year baseline traffic flows were determined by applying a NRTF 2026 (the year when construction traffic is expected to peak) high growth factor to the existing traffic flows within the study area. Traffic flows associated with any nearby operational wind farms were captured within the existing traffic flows.
- 5.4.4 The NRTF high growth factor for 2023 to 2026 is 1.0367 and this factor was applied to the ATC and TS count data.
- 5.4.5 Table TN10-2 summarises the resulting future year baseline traffic flows.

Table TN10-2: Future Year (2026) Baseline Traffic Flows (Daily Average Two-Way Flows)

Survey Location	Cars & LGVs	HGVs	Total
Kilfinnan Road north (ATC North Site)	249	24	273
A82, north of Invergarry (TS Count Point 0000ATC01037)	2,100	565	2,665
A82, north of Stronaba (TS Count Point 0000ATC01036)	3,304	806	4,110

5.5 Accident History

- 5.5.1 Road traffic personal injury accident (PIA) data was obtained from TS for the trunk roads in the study area, namely the A82, covering the five-year period from 2018 to 2022.
- 5.5.2 The data is collected by Police Scotland about road traffic crashes occurring on Scottish roads where someone is injured, with the severity of injury (the ranking system is as per Police Scotland's system for recording traffic collisions) defined as follows:
 - Slight;
 - Less Serious;
 - Moderately Serious;
 - Very Serious;



- Serious; and
- Fatal.
- 5.5.3 The data indicates that over the network reviewed, which is approximately 48km in length, a total of 33 PIAs were recorded of which 58% are classified as "slight", 15% as "less serious", 6% as "moderately serious", 6% as "very serious", 12% as "serious" and 3% as "fatal" by the Police reporting and recording the incidents.
- 5.5.4 Table TN10-3 summarises the trunk road accident data.

Table TN10-3: Accident Data Summary 2018 -2022 (Trunk Roads)

Route	Fatal	Serious	Very Serious	Moderately Serious	Less Serious	Slight	Total Accidents
A82 - Spean Bridge to Invermoriston	1	4	2	2	5	19	33

- 5.5.5 It should be noted that the PIA information obtained from TS was for a longer section of the A82 than is identified in this TA's study area.
- 5.5.6 No common cause (e.g. weather, seasonal effects etc.) has been identified in the analysis that would suggest a specific road safety issue.
- 5.5.7 Within the study area only one common accident location has been identified, in the vicinity of the secondary access to The Whispering Pine Lodges. This is located on the southwestern shore of Loch Lochy, where five PIAs have been recorded. The speed limit on this section of the A82 is 50mph. A review of Streetview images show this reduced speed limit was introduced sometime between June 2017 and May 2021, presumably in response to the identified accident cluster. Of the five PIAs, three occurred prior to May 2021, with the remaining two occurring after May 2021. One other common accident location was identified from the TS data, however this location is out with this TA's study area.
- 5.5.8 The online source Crashmap.co.uk reveals that no PIAs were recorded along Kilfinnan Road between 2017-2021, the years with the most recent data available.

5.6 Footpath and Cycle Network

- 5.6.1 Kilfinnan Road forms part of the Great Glen Way, a national long-distance route used by walkers, cyclists, and horse riders. A section of Kilfinnan Road, southeast of Laggan Locks, also serves as the Caledonia Way or National Cycle Network (NCN) 78 Oban to Inverness route.
- 5.6.2 Ramblers Scotland online Scottish Paths Map identifies a path to Loch Lochy Munros which branches off from the Great Glen Way.
- 5.6.3 All paths in the vicinity of the Site are shown in Figure 10-3, in Appendix A.
- 5.6.4 The Great Glen Way and NCN78 will also be temporarily diverted during the upgrade works, to ensure access and the existing right of way is maintained at all times. It will also segregate its users from construction traffic.



6.0 Development Trips

6.1 Derivation of Development Traffic Flows

- 6.1.1 During the 18-month construction period, the following traffic will require access to the Site:
 - Staff transport, either by cars or LGVs; and
 - Construction equipment and materials, by HGV.
- 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.

6.2 Staff Traffic

6.2.1 Staff will arrive in non-HGVs and where possible will be encouraged to car share. The workforce onsite will depend on the activities undertaken. Based on previous construction experience, the maximum number of staff movements is expected to be around 25 per day during the peak period of construction. Therefore, staff transport by cars will account for a maximum of 50 two-way vehicle movements per day.

6.3 General Construction Traffic

- 6.3.1 An estimate of all construction material required for the road upgrade was provided by the Client, based on experience of previous developments.
- 6.3.2 All aggregate (sub-base, capping, ducting sand and pipe bedding) and asphalt materials associated with the road upgrade, will be sourced from offsite quarries which represents the worst-case scenario (for the purpose of this assessment, the aggregate obtained onsite is assumed to be negligible).
- 6.3.3 Utility ducts and drainage pipes will be laid in trenches along Kilfinnan Road. Fencing will be required or replaced in areas along Kilfinnan Road. Pre-cast concrete units (bridge beams and culverts) will be required to replace or improve the existing burn crossings along Kilfinnan Road. In relation to all associated materials, a worst-case scenario was adopted when estimating the materials required.
- 6.3.4 For the purposes of this assessment, it has been assumed that 90% of spoil will be removed offsite. In reality, it is anticipated that the majority of spoil will be reused throughout the Proposed Development and the main Scheme works. The assessment therefore represents a worst-case scenario.
- 6.3.5 The total estimated two-way vehicle movements for the delivery of all the construction materials required for the Kilfinnan Road Upgrade is summarised in Table TN10-4.

Table TN10-4: Construction Materials for the Kilfinnan Road Upgrade Works

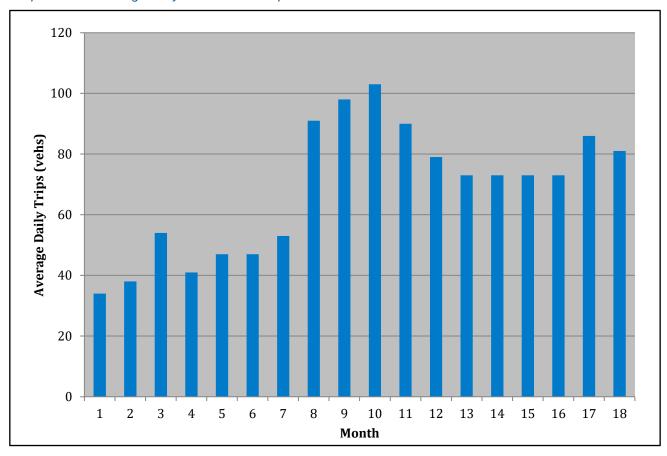
Element	Total Number of Two-Way Movements
Asphalt	984
Sub-Base	3,068
Capping	2,732
Ducting Sand	156
Drainage Bedding	24
Utility Ducts	40
Drainage Pipes	13
Pre-cast Concrete Units	30
Fencing Materials	75
Spoil Removal	12,100

- 6.3.6 It is assumed that there will be several service-related deliveries (fuel/waste/cleaning) per working week throughout the 18-month programme. This equates to two two-way vehicle movements per day during the peak period of construction (one inbound and one outbound).
- 6.3.7 It was assumed that construction working hours will be limited to between 0700 1900 Monday to Friday, and 0800 1400 on Saturday. In the event of work being required out with these hours (e.g., commissioning works, or emergency mitigation works), the Planning Authority will be notified prior to them taking place.

6.4 Total Construction Traffic

- 6.4.1 The total estimated construction traffic two-way vehicle movements are detailed in the main delivery schedule table provided in Appendix C of this report.
- 6.4.2 The average daily construction trips across the construction programme are illustrated in Graph TN10-1.

Graph TN10-1: Average Daily Construction Trips



6.5 Development Traffic Distribution

- 6.5.1 The origin of vehicle traffic will depend on the location of staff accommodation and the source of materials being imported. It is likely that staff will be accommodated across a wide area. There are several potential sources of quarried material (aggregate/sand/bedding/asphalt) for the road upgrade, including quarries situated southwest and northeast of the Site entrance.
- 6.5.2 General construction HGV traffic will be required to use the A82, and then access the Site from Kilfinnan Road.
- 6.5.3 All traffic distribution assumptions are shown in Table TN10-5.

Table TN10-5: Construction Traffic Distribution Assumptions

Survey Location	Staff	Asphalt	Aggregate/Sand/Spoil	Ducts/Pipes	Precast	Fencing
Kilfinnan Road north (ATC North Site)	100%	100%	100%	100%	100%	100%
A82, north of Invergarry (TS Count Point 0000ATC01037)	50%	0%	20%	100%	100%	100%
A82, north of Stronaba (TS Count Point 0000ATC01036)	50%	100%	80%	0%	0%	0%

6.6 Conclusions

- 6.6.1 The results conclude that the peak period of construction is anticipated to occur during month 10 of the 18-month programme. This corresponds with the delivery of imported aggregate for the road upgrade and utility installation, the removal of excess spoil from Site and the transport of staff to / from the Site. During the busiest month, activities are anticipated to generate an average of 103 two-way vehicle movements per day, of which 51 will be made up of cars or LGVs (Site staff) and 52 will be made up of HGVs.
- 6.6.2 The traffic impact assessment focuses on the peak period traffic flows to illustrate the potential effects on the study area.

7.0 Traffic Impact Assessment

7.1 Construction Traffic

- 7.1.1 The future year baseline traffic data was combined with the peak daily construction traffic flows to estimate the total two-way vehicle movements on the study area during the peak of the construction phase. This was then distributed across the network.
- 7.1.2 Table TN10-6 illustrates the peak daily construction traffic flow, Table TN10-7 illustrates the total daily flows (combining the future year baseline and peak construction traffic flows), and Table TN10-8 illustrates the percentage increase in total traffic over baseline traffic.

Table TN10-6: Peak Construction Traffic Flows (Daily Average Two-Way Flows)

Survey Location	Cars & LGVs	HGVs	Total
Kilfinnan Road north (ATC North Site)	51	52	103
A82, north of Invergarry (TS Count Point 0000ATC01037)	25	8	33
A82, north of Stronaba (TS Count Point 0000ATC01036)	25	44	69

Table TN10-7: Future Year Baseline Plus Peak Construction Traffic Flows (Daily Average Two-Way Flows)

Survey Location	Cars & LGVs	HGVs	Total
Kilfinnan Road north (ATC North Site)	299	75	374
A82, north of Invergarry (TS Count Point 0000ATC01037)	2,125	573	2,698
A82, north of Stronaba (TS Count Point 0000ATC01036)	3,330	849	4,179

Table TN10-8: Percentage Increase: Total vs Future Year Baseline (Based on Daily Average Two-Way Flows)

Survey Location	Cars & LGVs	HGVs	Total
Kilfinnan Road north (ATC North Site)	20.3%	216.1%	37.5%
A82, north of Invergarry (TS Count Point 0000ATC01037)	1.2%	1.4%	1.2%
A82, north of Stronaba (TS Count Point 0000ATC01036)	0.8%	5.4%	1.7%

- 7.1.3 The results indicate that total and HGV traffic movements are not predicted to increase by more than 30% on the A82. Total and HGV movements are anticipated to increase by more than 30% on Kilfinnan Road (37.5% and 216.1%, respectively).
- 7.1.4 The greatest effect of construction traffic will be experienced on Kilfinnan Road which reflects the lower number of vehicle movements in the base situation on this section of the road network.
- 7.1.5 During the upgrade works, an offline temporary diversion road will be constructed to avoid pinch points along the route and ensure that properties along Kilfinnan Road continue to have unfettered

- access. The extents of the temporary diversion road are shown in drawing LH000012-COIG-SID-SD-0002-03, sheet 1-16, in Appendix B.
- 7.1.6 All dwellings accessed from Kilfinnan Road, whether directly or indirectly, are considered to be receptors of low sensitivity.
- 7.1.7 Therefore, the significance of any vehicle movements is considered to be slight or moderate and can be mitigated through amendments to the Construction Traffic Management Plan (CTMP), associated with the Proposed Development. The CTMP would also address issues related to perceived severance, driver delay, pedestrian delay, pedestrian amenity or increased fear and intimidation or any decreased levels of safety on Kilfinnan Road.
- 7.1.8 In real terms, the maximum number of additional two-way HGV movements per hour on any link within the study area averages less than six within the peak month of construction activity, assuming a 10-hour working day.
- 7.1.9 This volume of additional traffic is not considered to present a concern in terms of the link capacity of Kilfinnan Road in this location.
- 7.1.10 It is also not considered to present a concern in relation to perceived severance, driver delay, pedestrian delay, pedestrian amenity or increase fear and intimidation or decrease the level of safety on the A82.

7.2 Operational Traffic

- 7.2.1 As set out in 2.2.3, once the construction of the Scheme is completed (expected duration is 10 years), the Proposed Development will remain in place permanently but will be downgraded to a single-track road with passing places.
- 7.2.2 Prior to the downgrading works taking place, a traffic assessment would be undertaken in line with the best practice guidance and relevant legislation in place, at that time, and an appropriate traffic management procedure would be implemented.
- 7.2.3 The downgrading works will result in fewer trips on the road network than the construction phase, as the principal elements of the Proposed Development, including its alignment, would remain unchanged.
- 7.2.4 As the downgrading works will result in fewer vehicle trips on the road network, than the construction phase, the significance of any effects would not be greater than those already identified. It can therefore be assumed that the assessment of the construction phase covers the worst-case scenario.

7.3 Decommissioning Traffic

7.3.1 Due to the nature of the Proposed Development, it is envisaged that Kilfinnan Road will never be decommissioned, therefore, decommissioning traffic impacts were not assessed.

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7.4 Cumulative Assessment

- 7.4.1 Consideration was given to the cumulative impact of the Proposed Development plus other developments that are either committed or subject to a valid planning application which would impact on the study area.
- 7.4.2 Some of the enabling works for the main Scheme will run concurrently with the upgrade works on Kilfinnan Road. This will be limited to enabling works for the main construction works (i.e. compound areas, access tracks, site mobilisation etc.). Major works related to underground or dam elements will not be carried out during this period.
- 7.4.3 The EIA previously submitted for the main Scheme works provided the peak volume of traffic for the busiest month. It is self-evident that the peak construction traffic movements associated with the main Scheme works will not coincide with the upgrade works on Kilfinnan Road.
- 7.4.4 For the purposes of this assessment therefore, it has been assumed that 20% of the peak month's volume of traffic for the main Scheme works coincides with the peak month of the Proposed Development; this is considered to present a robust estimate.
- 7.4.5 Five additional development proposals are also included in the cumulative assessment. Of these, Dell and Bhlaraidh (Extension) Wind Farms have both been consented, while Cloiche Wind Farm, Coire Glas Grid Connection and Syke Reinforcement Projects are at the pre-application stage.
- 7.4.6 Dell Wind Farm is located south of Whitebridge, off the B862. In August 2019, an application to build and operate Dell Wind Farm, consisting of up to 10 turbines, was consented following an appeal to the Scottish Ministers.
- 7.4.7 Bhlaraidh Wind Farm Extension is located to the east of the existing Bhlaraidh Wind Farm, northwest of Invermoriston, off the A887. The Extension, consisting of up to 18 turbines, was approved by the Scottish Government's Energy Consents Unit in August 2022.
- 7.4.8 Cloiche Wind Farm is located adjacent to the operational Stronelairg Wind Farm and Glendoe Hydroelectric Scheme, and approximately 11km to the southeast of Fort Augustus. A Section 36 application for Cloiche Wind Farm, consisting of up to 36 turbines, was submitted to the Scottish Government's Energy Consents Unit in April 2020.
- 7.4.9 Coire Glas Grid Connection consists of the construction of approximately 13km of 400kV overhead power lines between the consented Scheme and the Fort Augustus Substation. A Section 37 application has been submitted to the Scottish Ministers.
- 7.4.10 The Skye Reinforcement project consists of the reinforcement of the high voltage electricity network from Ardmore, on the Isle of Skye, to Fort Augustus. The project is currently in the development phase.
- 7.4.11 It is highly unlikely that the construction programmes for the Proposed Development and the five other projects, not directly related to the main Scheme works, would coincide. However, for the purposes of this assessment, it was assumed that the peak periods of all construction programmes would overlap and, as such, the cumulative assessment has considered this worst-case scenario (i.e. seven developments in total).

7.4.12 Peak construction period traffic flows for the cumulative developments were extracted from planning documentation and added to the future year flows, taken from Table TN10-7, only where they impacted on the study area. Table TN10-9 illustrates the daily traffic flows associated with the six cumulative developments, Table TN10-10 illustrates the total cumulative traffic flows (baseline traffic plus proposed development plus cumulative developments), and Table TN10-11 illustrates the percentage increase in cumulative traffic over baseline traffic.

Table TN10-9: Cumulative Development Peak Construction Traffic Flows (Daily Average Two-Way Flows)

Survey Location	Cars & LGVs	HGVs	Total
Kilfinnan Road north (ATC North Site)	32	81	113
A82, north of Invergarry (TS Count Point 0000ATC01037)	226	167	393
A82, north of Stronaba (TS Count Point 0000ATC01036)	842	344	1,186

Table TN10-10: Total Cumulative Traffic Flows (Daily Average Two-Way Flows)

Survey Location	Cars & LGVs	HGVs	Total
Kilfinnan Road North Site	331	156	487
A82 North Site (north of exit onto Kilfinnan Road)	2,351	740	3,091
A82 South Site (south of exit onto Kilfinnan Road)	4,172	1,193	5,365

Table TN10-11: Percentage Increase: Cumulative vs Future Year Baseline (Based on Daily Average Two-Way Flows)

Survey Location	Cars & LGVs	HGVs	Total
Kilfinnan Road north (ATC North Site)	33.2%	555.8%	78.9%
A82, north of Invergarry (TS Count Point 0000ATC01037)	12.0%	31.0%	16.0%
A82, north of Stronaba (TS Count Point 0000ATC01036)	26.2%	48.1%	30.5%

- 7.4.13 In the cumulative development scenario that has been assessed, both HGV and total traffic movements would increase by over 30% on the A82 south of Kilfinnan Road. On the A82 to the north, only the percentage of HGVs would increase by over 30%, with the total increasing by 16%. The A82 is a receptor of high sensitivity based on its national importance, although it is designed to accommodate general traffic and HGV movements between primary destinations.
- 7.4.14 Invergarry is a receptor of low sensitivity, as it is a small rural settlement where the majority of facilities are off the A82.
- 7.4.15 While it is considered highly unlikely that the peak months of construction would clash across all cumulative developments considered in this assessment, it is acknowledged that there could be

- HGV traffic from a combination of all seven developments using the A82 during their construction programmes, should they coincide.
- 7.4.16 It should be noted that any cumulative effects would be temporary and relatively short lived during the construction phase.
- 7.4.17 It should also be noted that the A82 is not close to capacity and pedestrian movements are not observed to be high, with limited pedestrian infrastructure.
- 7.4.18 It is clear that the impact set out in Table TN10-11 on Kilfinnan Road would be of major significance to residents and visitors to the area and will be a key consideration in the development of the CTMP.
- 7.4.19 Traffic management measures would therefore be implemented along Kilfinnan Road to mitigate the impact of traffic related to the Proposed Development and that of the main Scheme works.
- 7.4.20 Should cumulative construction phases occur concurrently, enhanced CTMP mitigation measures, associated with each individual development, should be considered and introduced as required. This would involve liaison with stakeholders, including TS and THC roads officers, developer representatives and the emergency services, in order to manage the impact of increased HGV movements.

8.0 Construction Traffic Management Proposals

8.1 Introduction

- 8.1.1 The chapter identifies the high-level proposals for managing the effects of vehicles associated with the Proposed Development during construction, which will be incorporated into a Site-specific CTMP.
- 8.1.2 The CTMP will be based on the proposals identified within this chapter, should the Proposed Development be granted planning consent and when a contractor is appointed.
- 8.1.3 A CTMP is intended to be a working document that evolves during the construction period.

8.2 Construction Phase

- 8.2.1 During the construction period, the established community liaison group will be used to disseminate information and take feedback, and a project website will be set up and regularly updated to provide the latest information relating to traffic movements associated with vehicles accessing the Site. The structure and content of the website will be agreed with THC.
- 8.2.2 All construction deliveries will be undertaken at appropriate times) with the aim to minimise the effect on the local road network.
- 8.2.3 The following measures will be implemented during the construction phase, through the CTMP:
 - All material 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;
 - A wheel wash facility will be established, in the vicinity of the Site entrance, if required;
 - Working hours will be limited to between 0700 1900 Monday to Friday, and 0800 1400 on Saturday. There shall be no construction traffic movements to or from the Proposed Development out with these hours. In the event of work being required out with these hours (e.g., commissioning works, or emergency mitigation works), the Planning Authority will be notified prior to them taking place;
 - Avoidance of transit through any rural communities identified during arrival and departure times of school buses, with all construction traffic following the designated access route;
 - Appropriate traffic management measures will be put in place at the Site entrance, off the A82, to avoid conflict with general traffic, subject to agreement with THC;
 - Typical measures will include speed limit, HGV turning and crossing signage and/or marshals at the Site entrance; and
 - Provision of construction updates on the project website and through the community liaison group to be distributed to residents along Kilfinnan Road.
- 8.2.4 All drivers involved in the works will be required to attend an induction to include:

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- A safety briefing;
- The need for appropriate care and speed control;
- A briefing on driver speed reduction agreements (to slow Proposed Development traffic at sensitive locations);
- Identification of specific sensitive areas;
- Identification of the specified access route; and
- The requirement not to deviate from the specified route.
- 8.2.5 There will be regular road inspection on the A82 in the vicinity of the Site entrance. Debris and mud will be removed from the carriageway, using an onsite road sweeper, if required.

9.0 Summary and Conclusions

9.1 Summary

- 9.1.1 Tetra Tech was commissioned by the Client to undertake an assessment of the transport aspects of the proposed Kilfinnan Road Upgrade. The Proposed Development is located in the Scottish Highlands, approximately, 70km southwest of Inverness.
- 9.1.2 To facilitate the additional vehicular movements generated by the construction of the consented Scheme, approximately 4.6km of Kilfinnan Road, from the junction with the A82 to the forestry gate of Clunes Forest, will be improved, modified and sections widened.
- 9.1.3 Existing and surveyed traffic data established a base point for determining the effect during the construction phase and was factored to future levels (2026 high growth) to help determine the effect of construction traffic on the local road network, at its peak.
- 9.1.4 Within the study area only one common accident location has been identified, in the vicinity of the secondary access to The Whispering Pine Lodges. This is located on the southwestern shore of Loch Lochy, where five PIAs have been recorded in the five-year period of 2018-2022.
- 9.1.5 The assessment of the effects of construction traffic indicates that total two-way traffic movements are not predicted to increase by more than 30% on the A82. The greatest effect of construction traffic will be experienced on Kilfinnan Road, where two-way HGV movements are anticipated to increase by more than 200%.
- 9.1.6 The maximum traffic effect associated with the construction of the Proposed Development is predicted to occur in month 10 of the 18-month programme, during which an average of 52 two-way HGV movements (or around six per hour) are predicted per day. It is also estimated that there will be a further 51 two-way car or LGV movements per day to transport construction workers to and from the Site.
- 9.1.7 It is highly unlikely that the construction programmes for the Proposed Development and the five other projects, not directly related to the main Scheme works, would coincide. However, for the purposes of this assessment, it was assumed that the peak periods of all construction programmes would overlap and, as such, the cumulative assessment has considered this worst-case scenario (i.e. seven developments in total including an element of the main works associated with Corie Glas).
- 9.1.8 No capacity issues are anticipated on the A82 due to additional construction two-way traffic movements associated with the Proposed Development, as background traffic flows are not significant and the A82 is of a trunk road standard.
- 9.1.9 An offline temporary diversion road will be constructed for the use of residents and visitors prior to the upgrade works of the Proposed Development commencing; the extents of the temporary diversion road are shown in drawing LH000012-COIG-SID-SD-0002-03, sheet 1 16, in Appendix B.
- 9.1.10 During the construction phase, access will be retained to all properties along the length of Kilfinnan Road. The Great Glen Way route will also be realigned as required to ensure access is maintained to this existing right of way throughout the construction period.

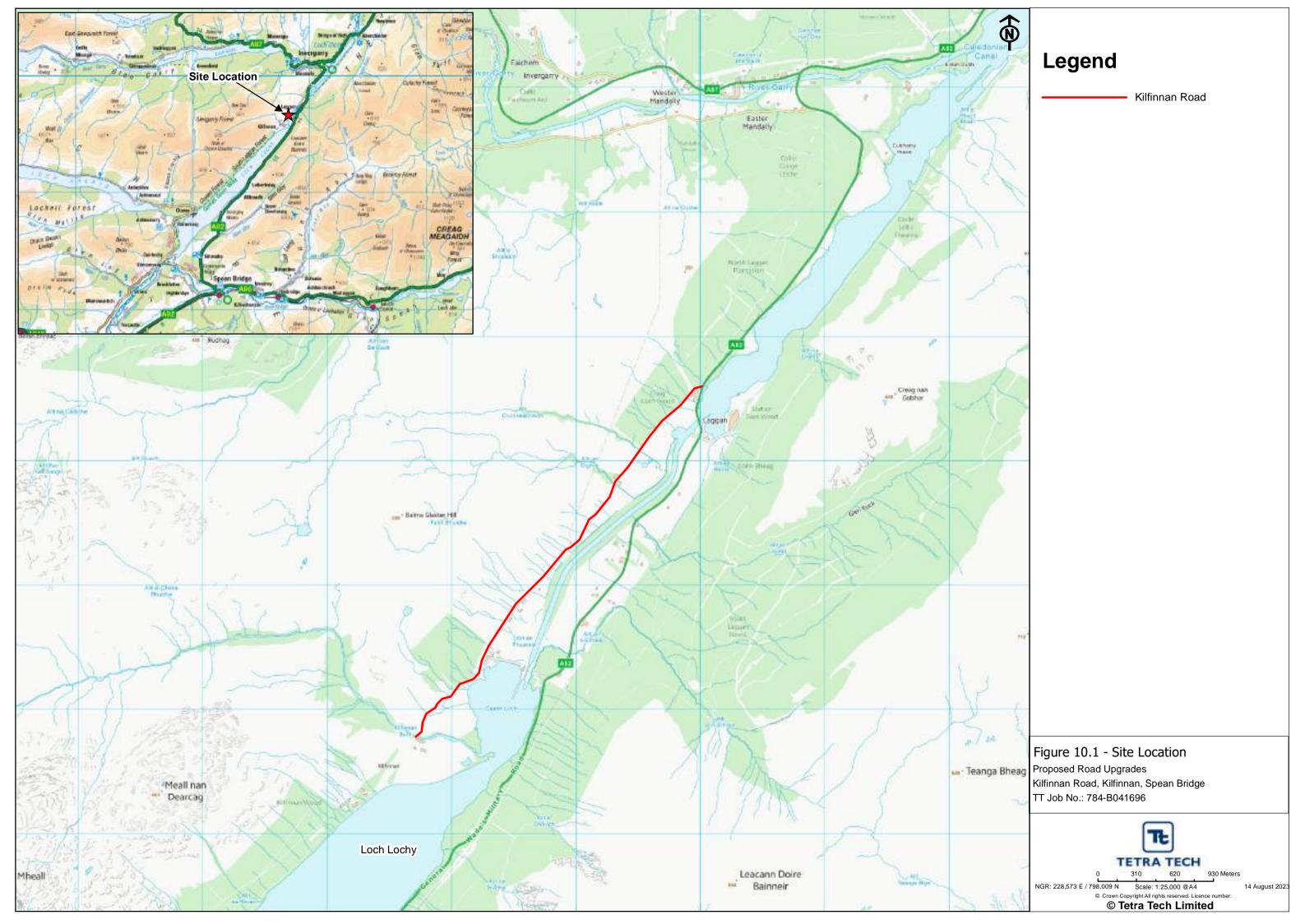
9.1.11 No other mitigation is required within the study area.

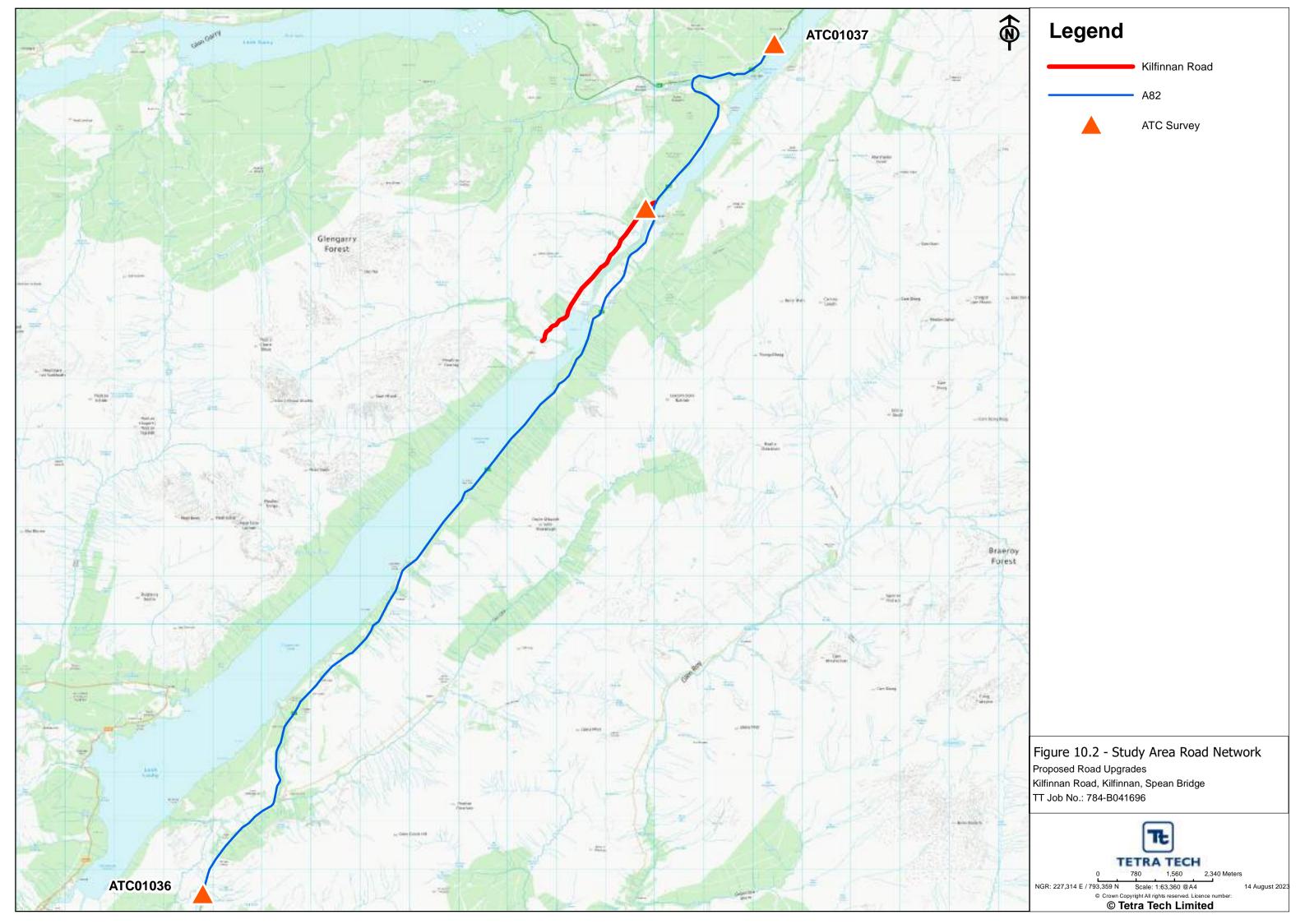
9.2 Conclusions

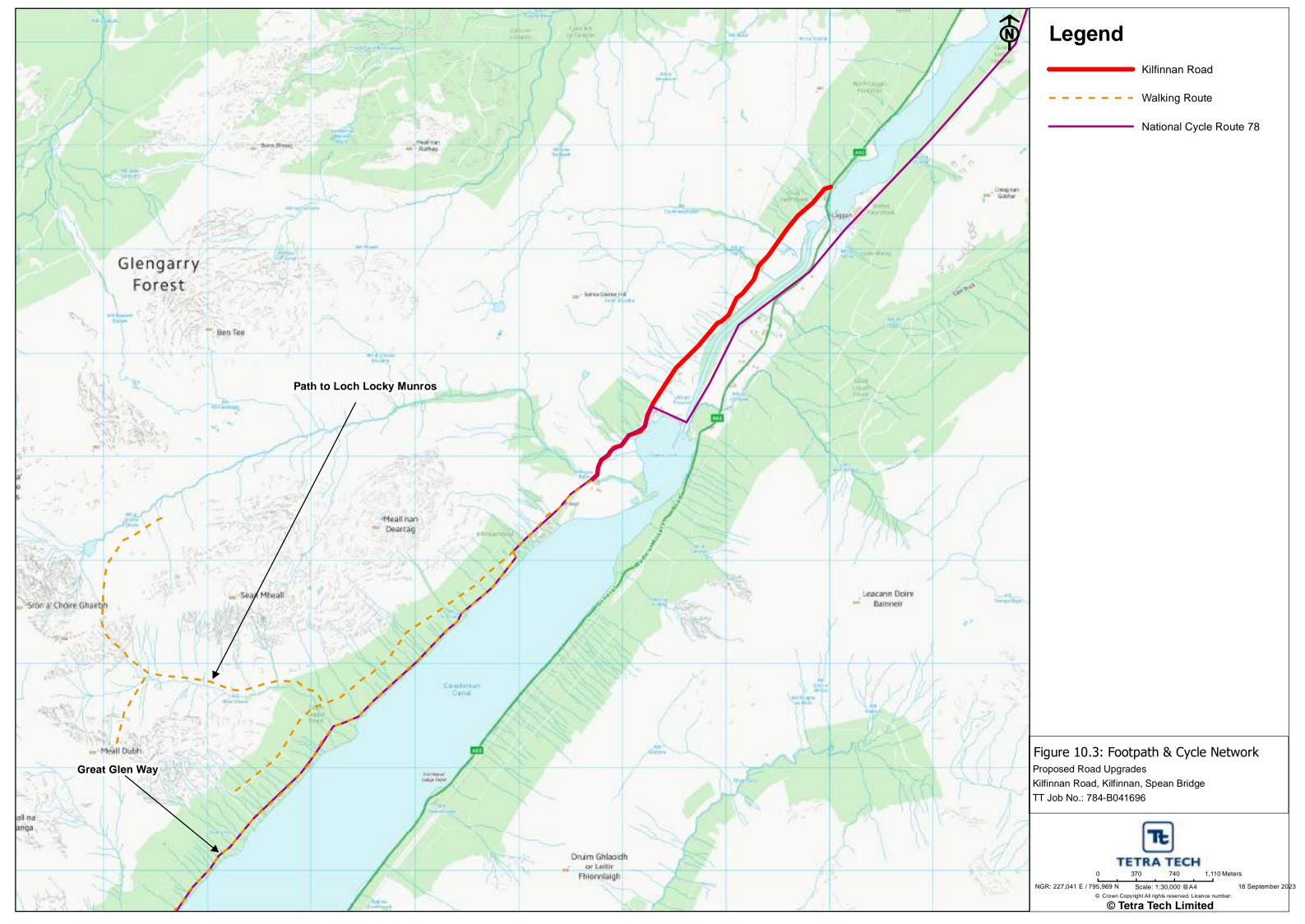
- 9.2.1 The assessment has identified the following:
 - The construction phase of the Proposed Development will generate the highest level of traffic;
 - The construction traffic during the most intensive phase of the construction programme will be short lived and temporary in nature;
 - That total two-way traffic movements are only predicted to increase by more than 30% on Kilfinnan Road;
 - Two-way HGV movements are only anticipated to increase by more than 30% on Kilfinnan Road;
 - The A82 has sufficient capacity to accommodate the temporary construction traffic; and
 - A CTMP will be developed by the contractor to manage construction traffic in the interests of road safety and efficiency.

Appendix A: Figures

Appendix A: Figures

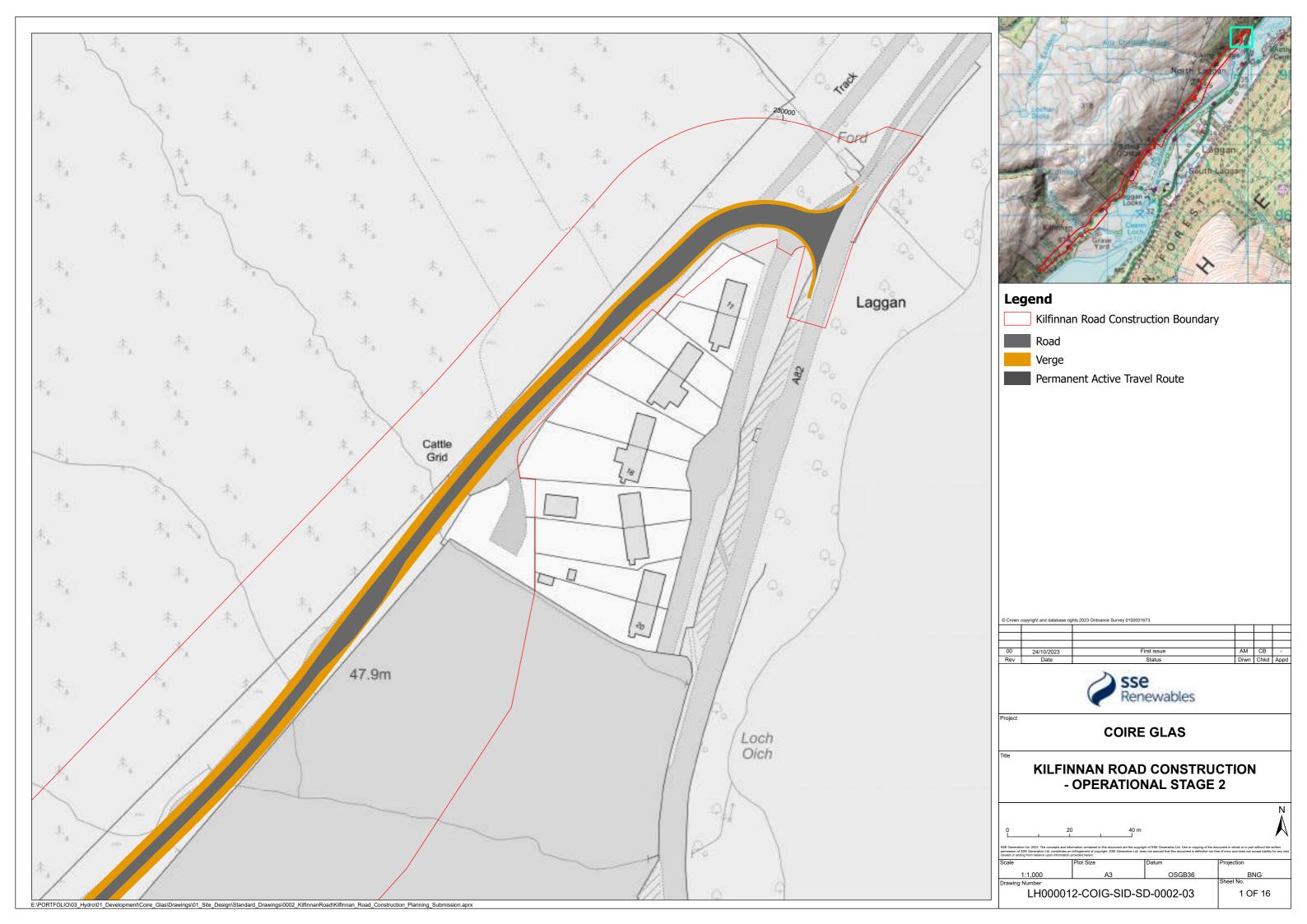


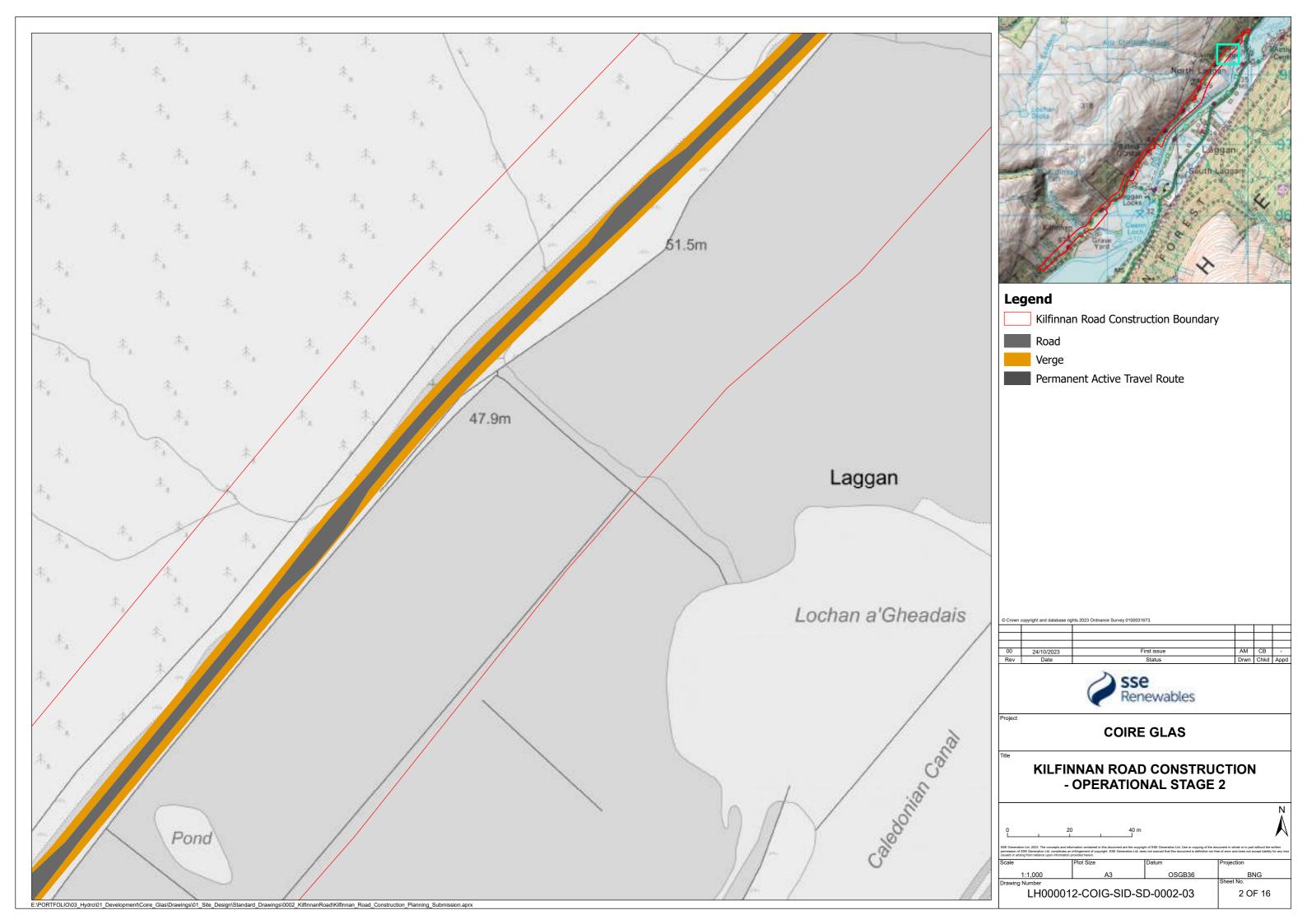




Appendix B: Outline Kilfinnan Road Construction Drawings

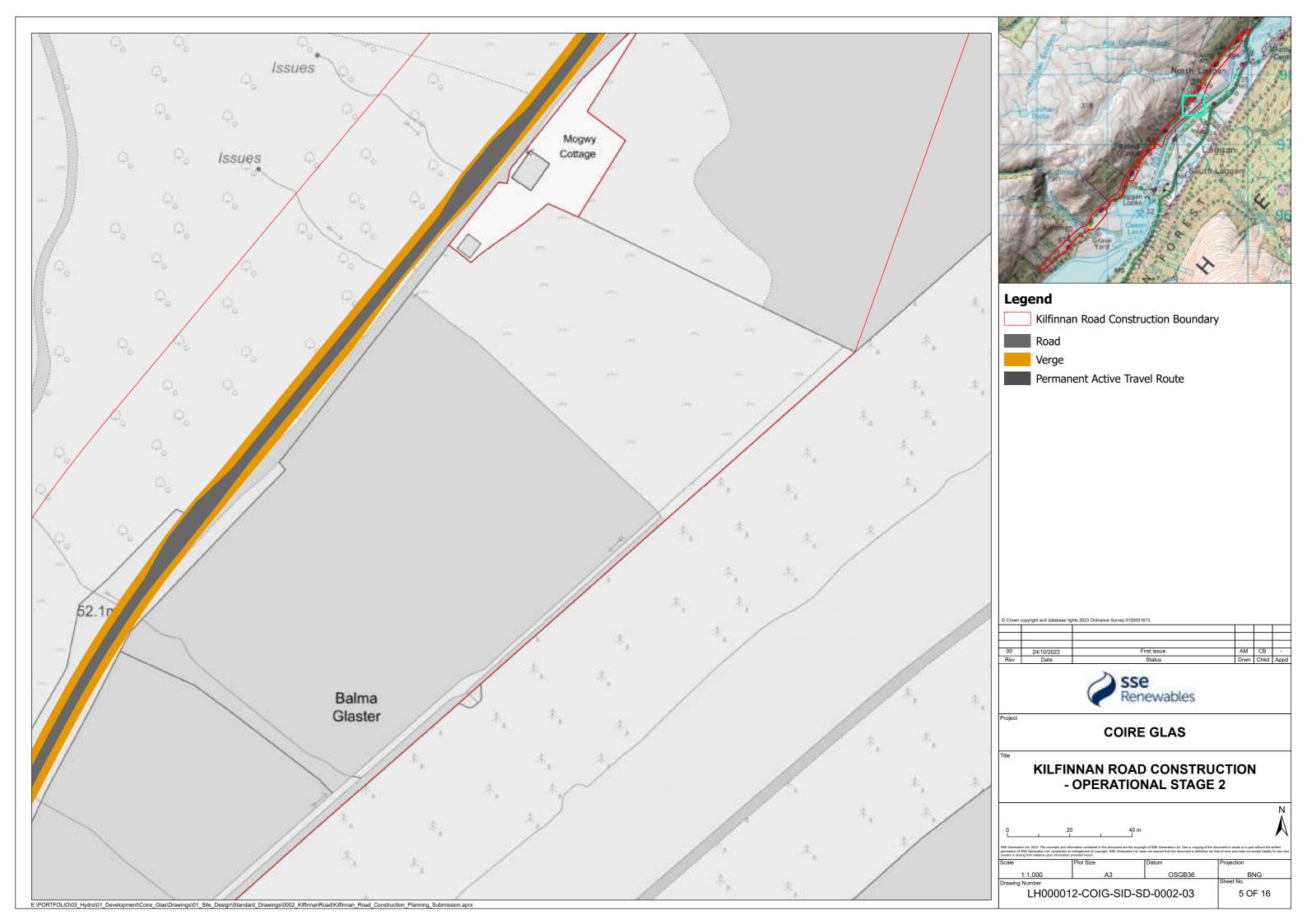
Appendix B: Outline Kilfinnan Road Construction Drawings

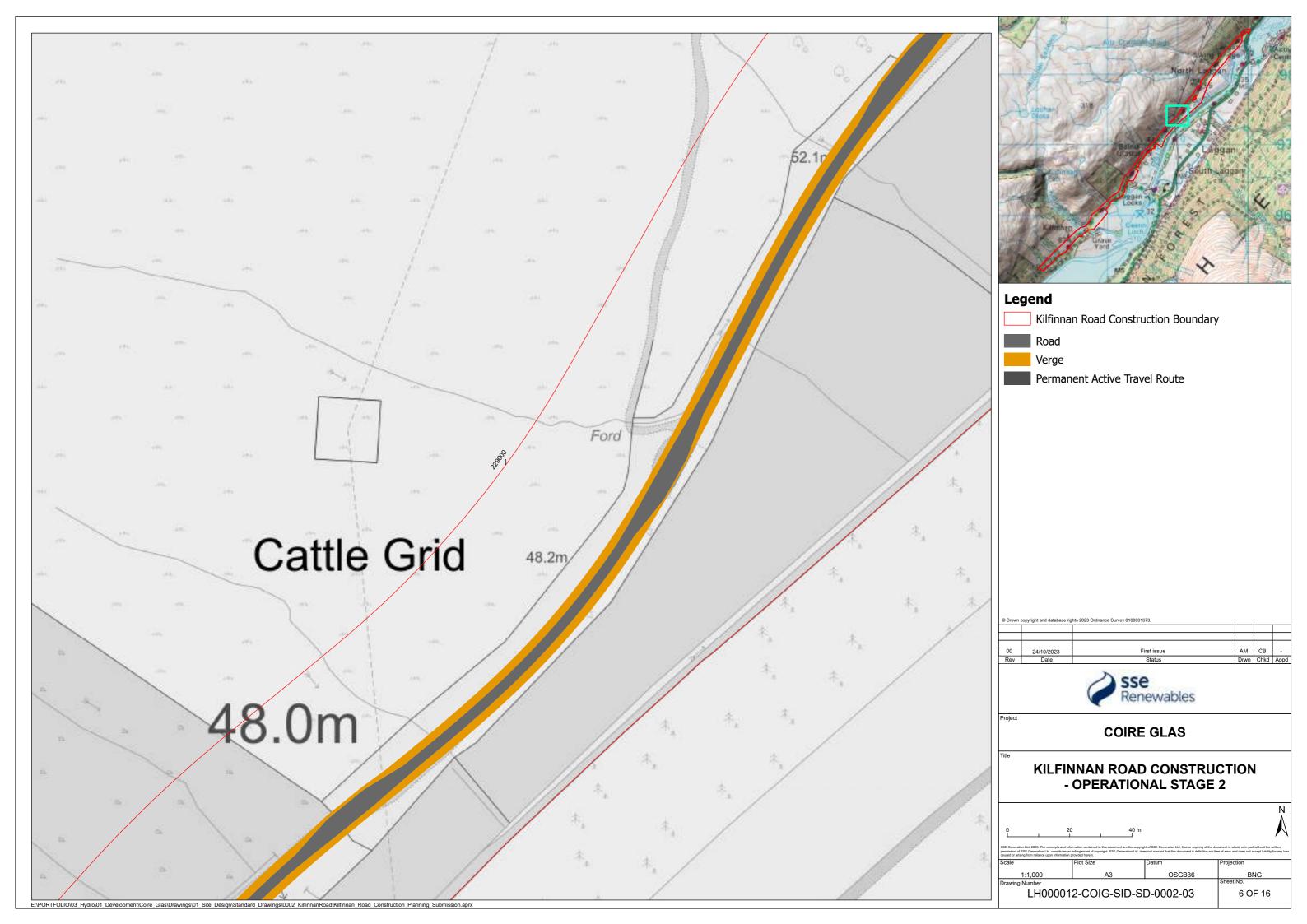




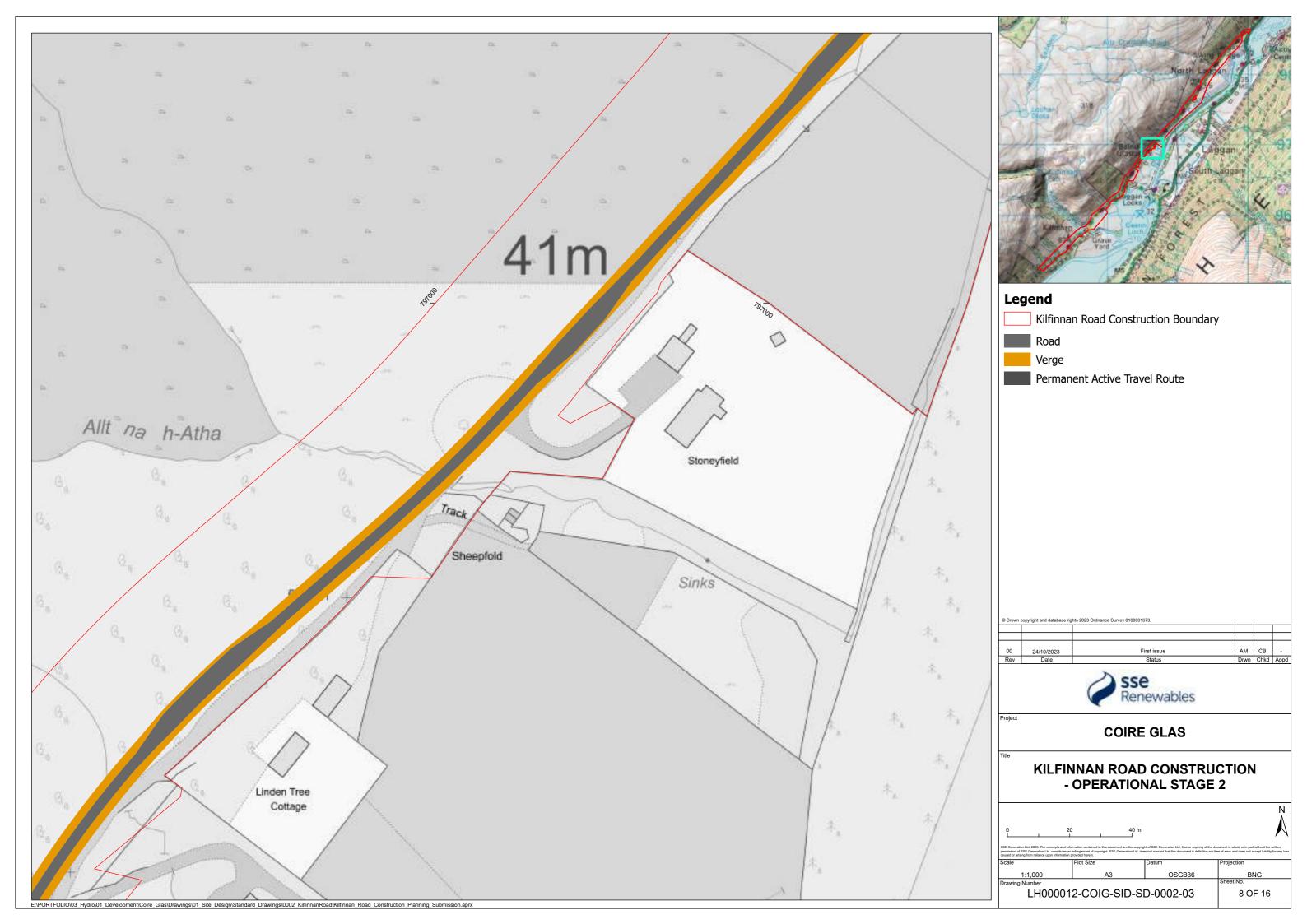


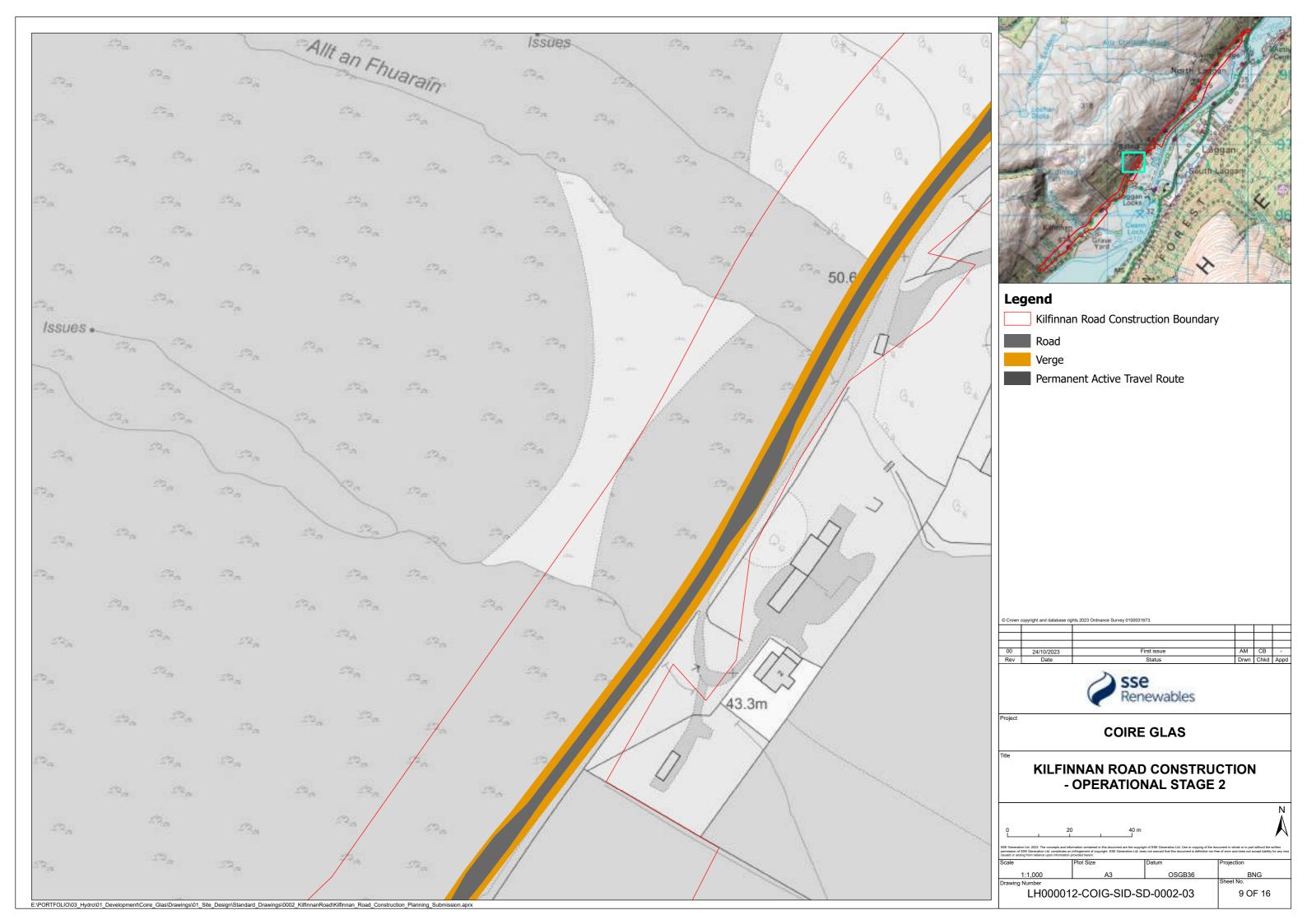


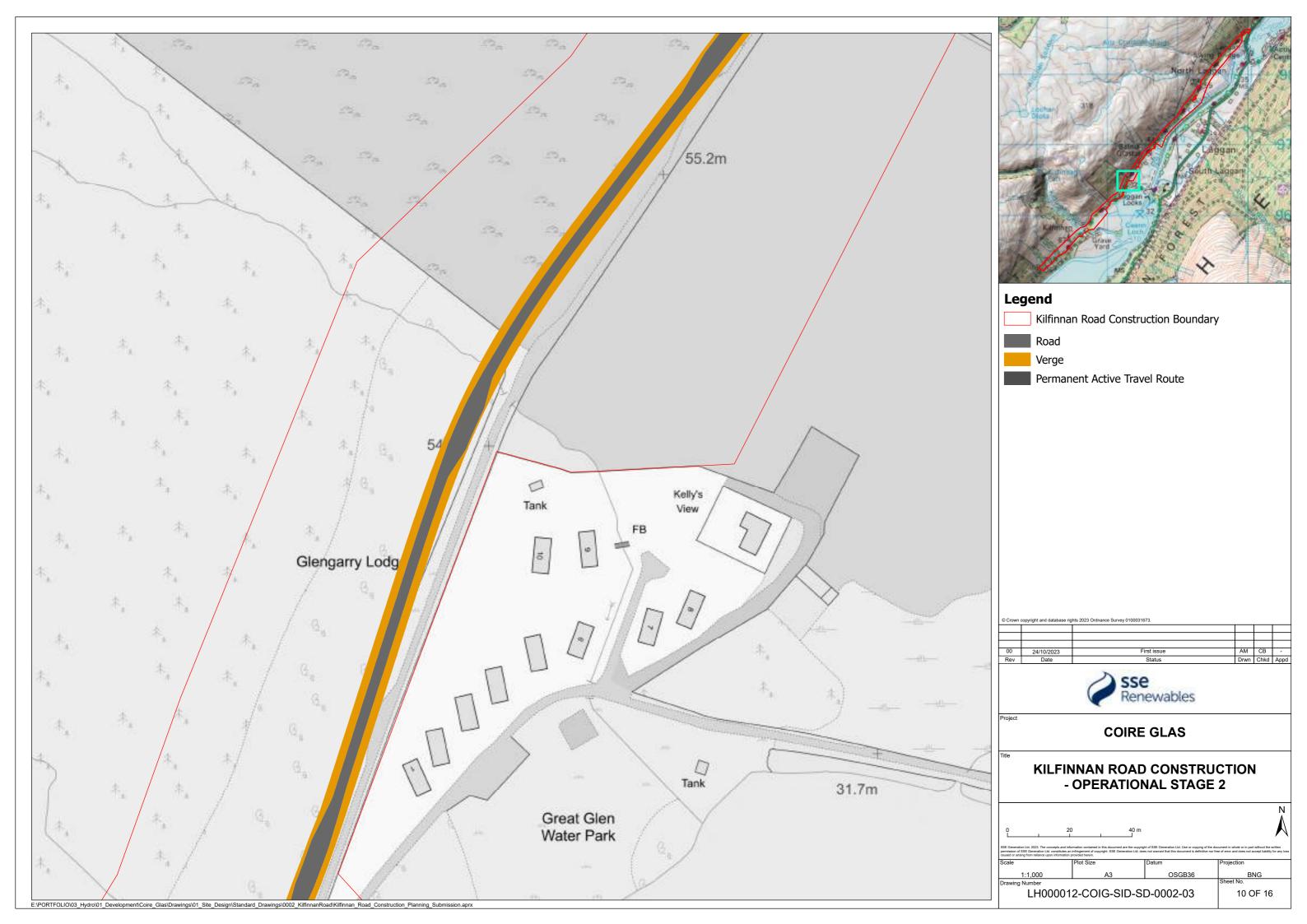


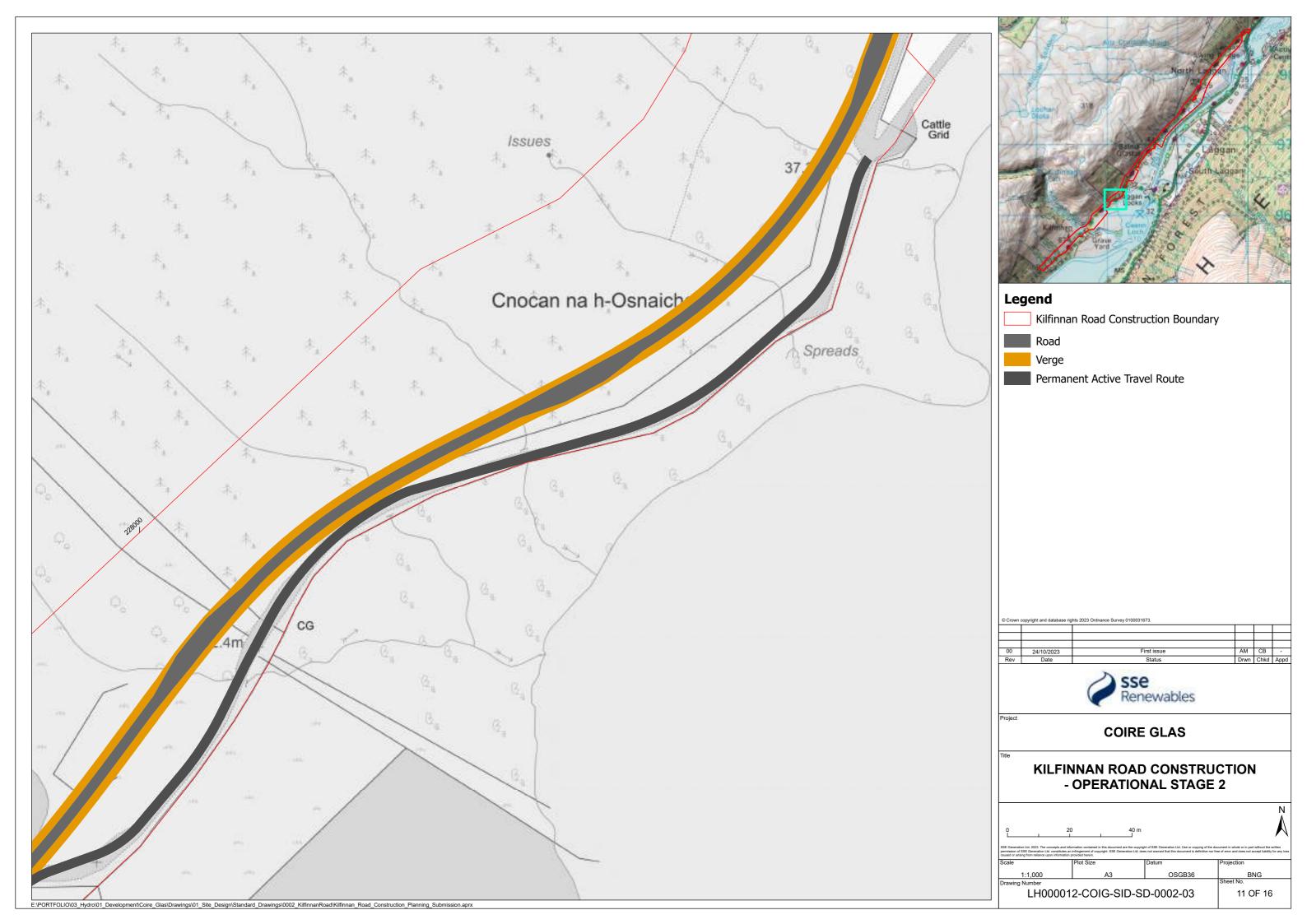


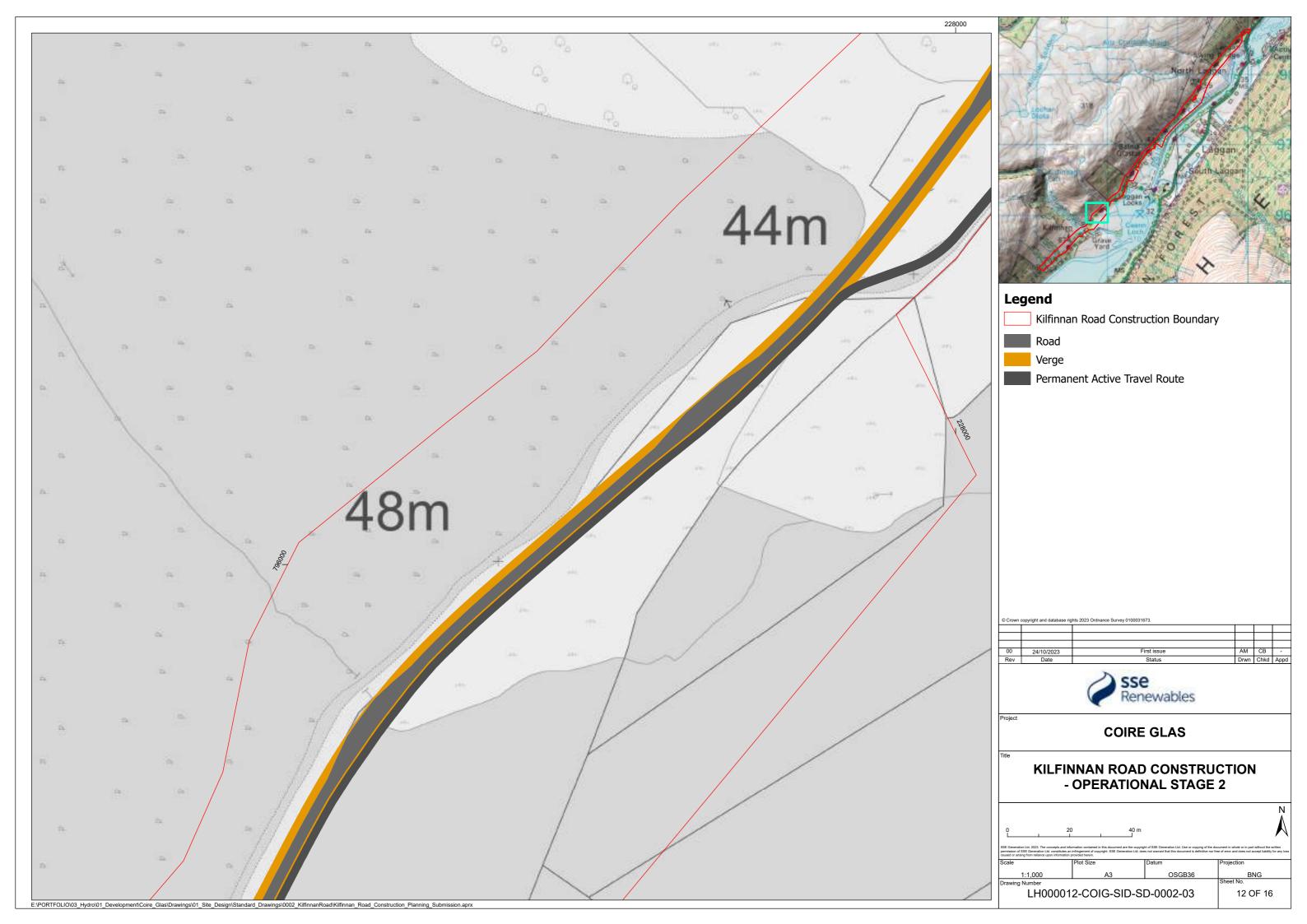


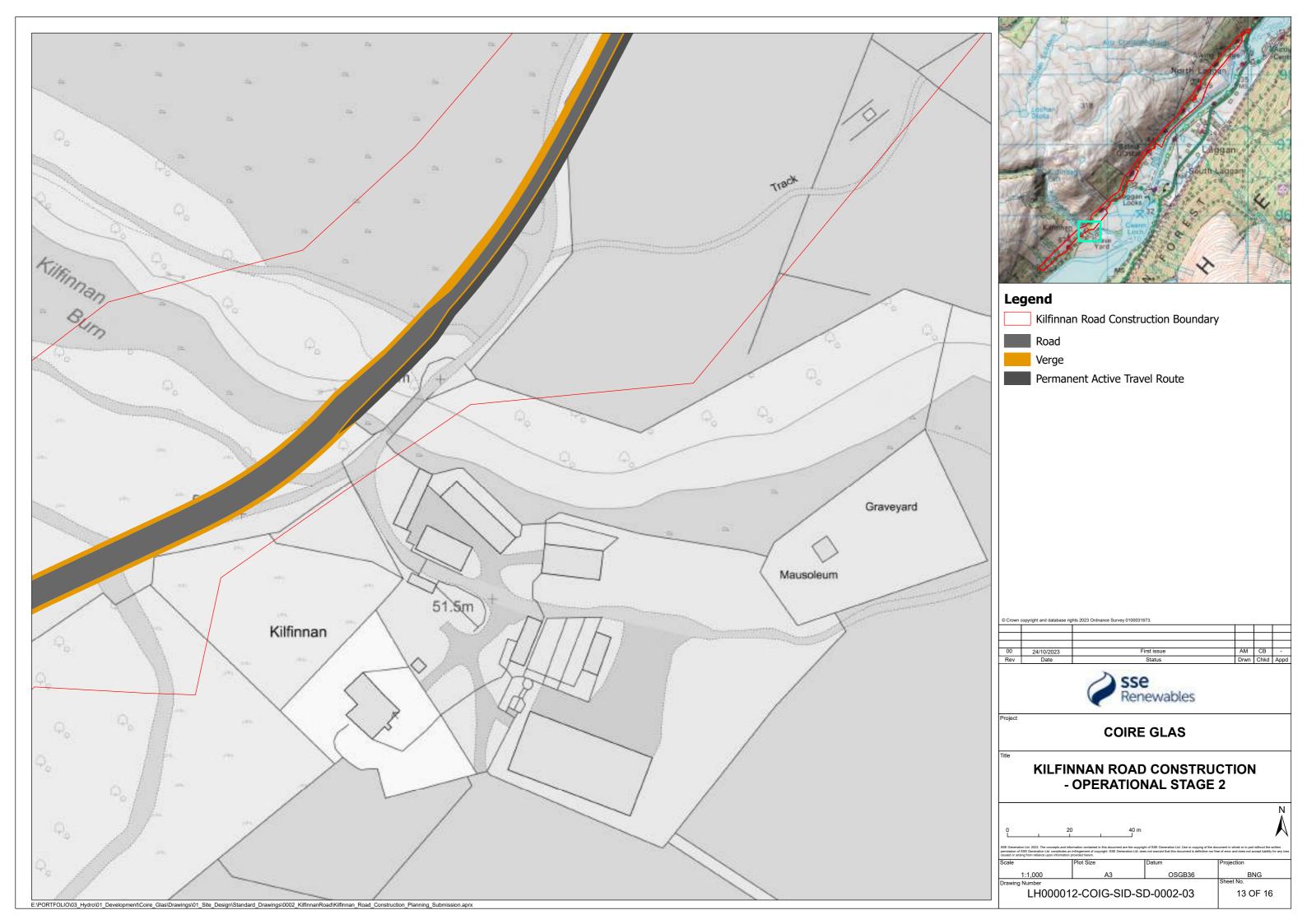


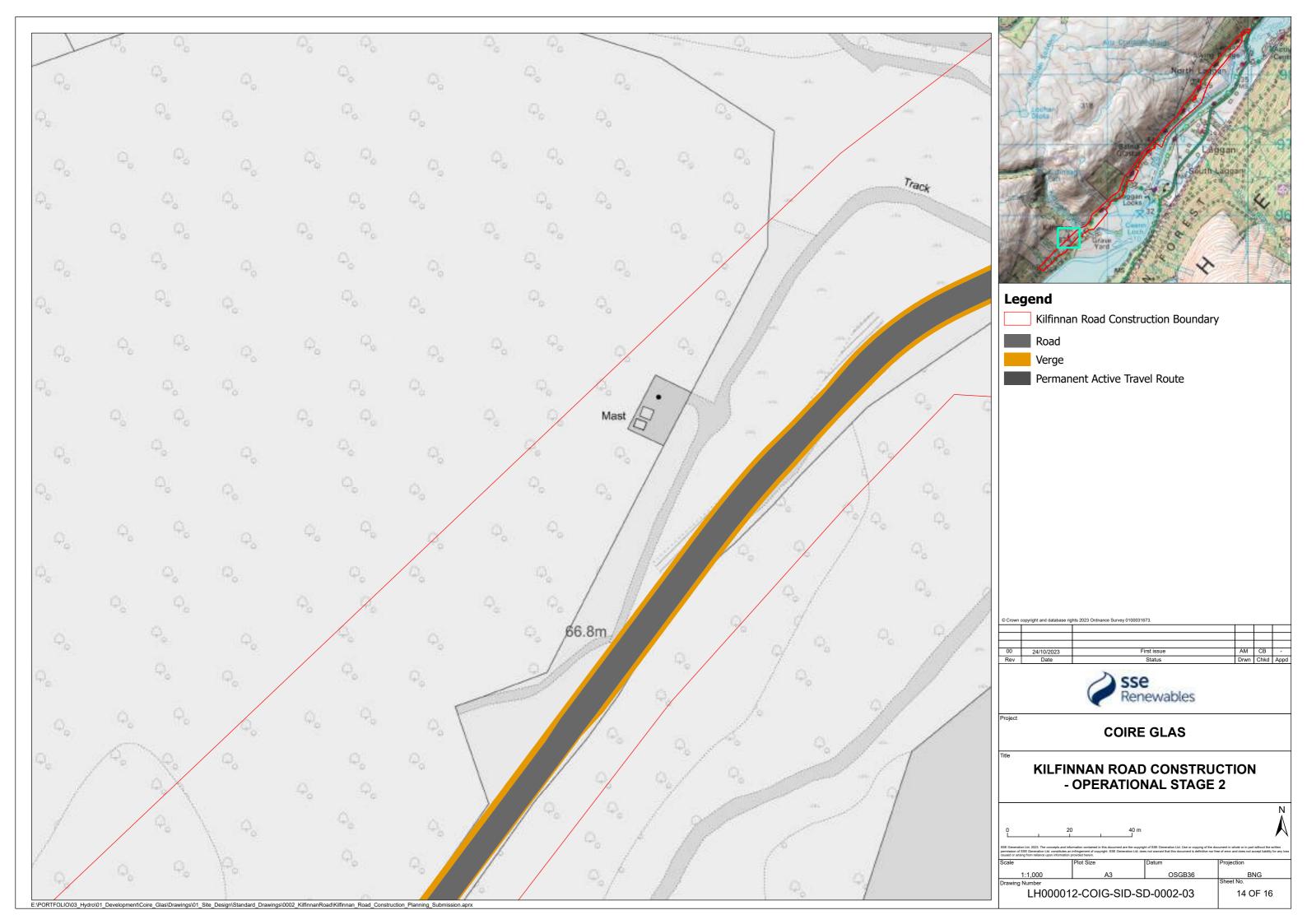


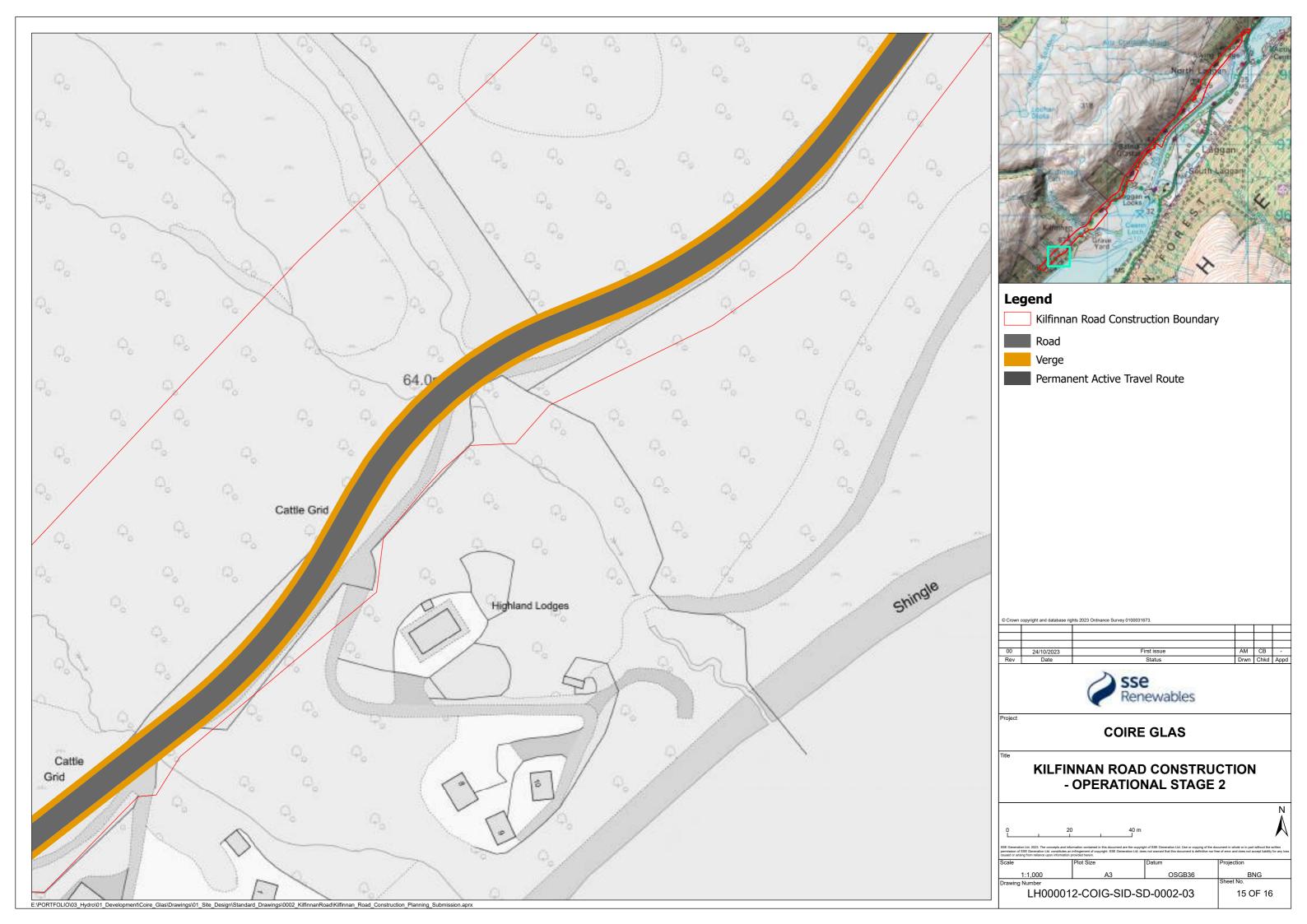


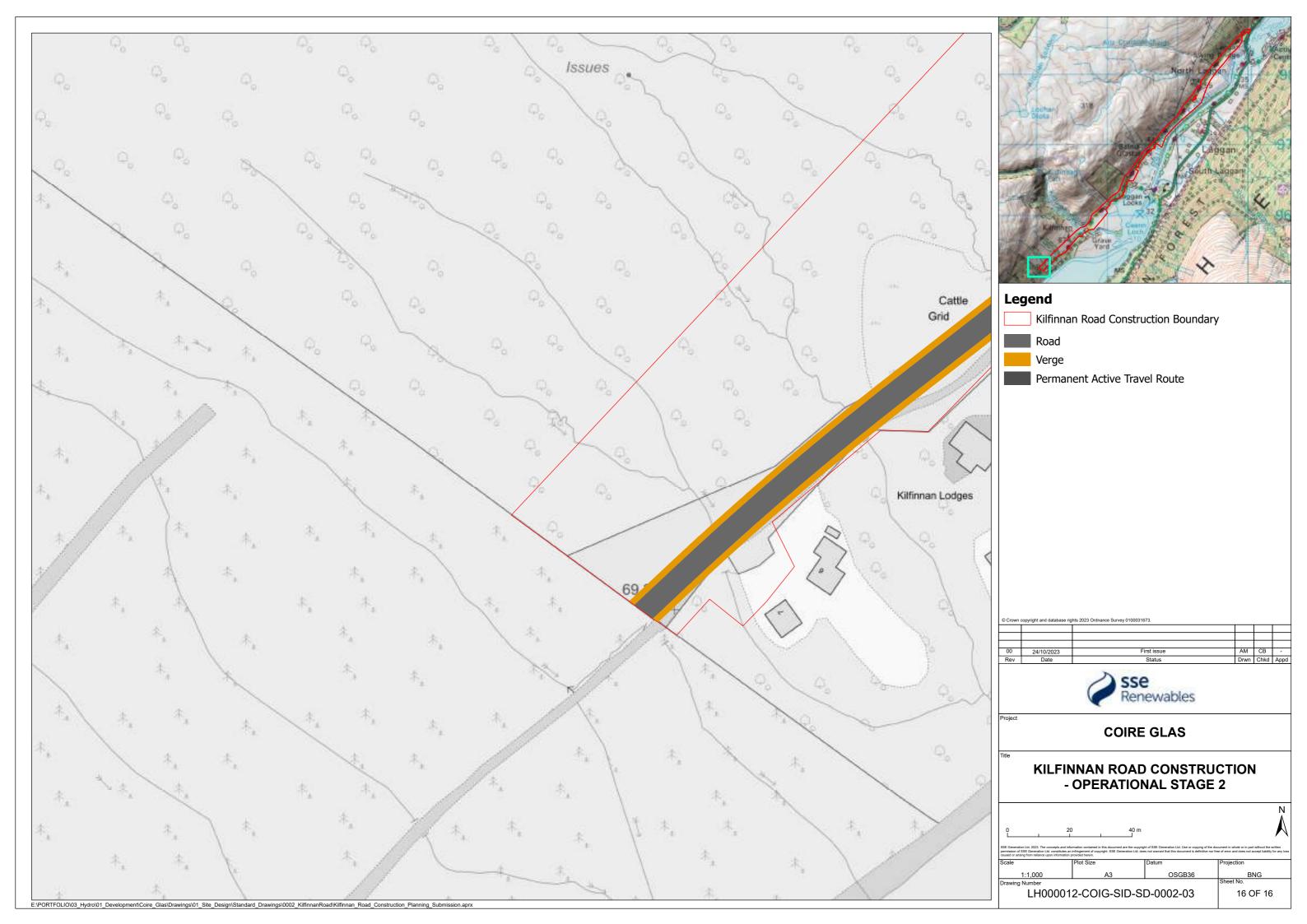












Appendix C: Total Estimated Construction Traffic

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									Мо	nth										
Activity	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	Total Movements	Vehicle Class
Mobilisation/demobilisation	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6	12	HGV
General site deliveries	32	32	32	32	32	32	32	32	32	32	31	31	31	31	31	31	31	31	568	HGV
Site servicing	26	26	26	26	26	26	26	26	26	26	26	26	26	26	26	26	26	26	468	LGV
Plant - Road Construction	24	0	0	12	0	0	0	0	12	0	0	24	0	0	0	0	0	0	72	HGV
Plant - Material Processing	5	0	3	0	0	0	3	0	5	0	0	0	0	0	0	0	0	0	16	HGV
Plant - Crane	0	0	0	0	0	0	4	0	4	0	4	0	0	0	0	0	0	0	12	HGV
Plant - Road Paver	1	0	1	0	0	0	0	0	0	0	0	0	1	0	1	1	0	1	6	HGV
Imported stone (Capping)	416	416	416	212	212	212	212	212	212	212	0	0	0	0	0	0	0	0	2732	HGV
Imported stone (Sub-base)	96	96	374	278	278	278	278	278	278	278	278	278	0	0	0	0	0	0	3068	HGV
Asphalt	62	62	62	0	0	0	0	0	0	0	0	0	133	133	133	133	133	133	984	HGV
Duct Deliveries	4	4	4	4	3	3	3	3	3	3	3	3	0	0	0	0	0	0	40	HGV
Ducting Sand	13	13	13	13	13	13	13	13	13	13	13	13	0	0	0	0	0	0	156	HGV
Drainage Deliveries	2	1	1	1	1	1	1	1	1	1	1	1	0	0	0	0	0	0	13	HGV

Drainage Bedding	2	2	2	2	2	2	2	2	2	2	2	2	0	0	0	0	0	0	24	HGV
Pre-cast	0	0	0	0	0	5	5	5	5	5	5	0	0	0	0	0	0	0	30	HGV
Fencing	7	7	7	0	0	0	0	0	0	0	0	0	9	9	9	9	9	9	75	HGV
Spoil Removal	0	0	0	0	0	0	0	1000	1000	1000	1000	1000	1000	1000	1000	1000	1550	1550	12100	HGV
Staff	312	480	649	649	818	818	987	1155	1324	1493	1324	987	987	987	987	987	818	649	16410	LGV
Total estimated movements	1008	1139	1590	1229	1385	1390	1566	2727	2917	3065	2687	2365	2187	2186	2187	2187	2567	2405	36786	LGV &
										3003	2001	2303	2101	2100	2101	2101	2301	2403	30700	HGV
Working Days	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30700	HGV
Working Days Daily Average	30	30	30 53	30	30 47		30 53	30 91											30700	HGV
						30			30	30	30	30	30	30	30	30	30	30	30700	HGV