Snowdonia Visual Impact Provision (SVIP) Project **23/06/2023**

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CONSTRUCTION TRAFFIC MANAGEMENT PLAN

SYSTRA

SNOWDONIA VISUAL IMPACT PROVISION (SVIP) PROJECT

CONSTRUCTION TRAFFIC MANAGEMENT PLAN

IDENTIFICATION TABLE	
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TABLE OF CONTENTS

LIST OF TABLES

1. INTRODUCTION

1.1 Preamble

1.1.1 This Construction Traffic Management Plan (CTMP) has been prepared on behalf of HOCHTIEF (UK) Construction Ltd (HTUK). HTUK are a Principal Contractor for the Snowdonia Visual Impact Provision (SVIP) Project ("the Project") being promoted by the Client, National Grid Electricity Transmission (plc) (NG). HTUK are responsible for the Tunnel & Cable contract element of the Project only. A separate contract for the Overhead Line (OHL) removal element of the Project will be awarded by National Grid.

1.1.2 Planning permission has been granted to National Grid for its stakeholder-driven proposals to reduce the visual impact of a section of electricity transmission line near the towns and villages surrounding the Dwyryd Estuary. The Project involves the removal of an approximately 3.5km section of the 4ZC 132kV and 400kV overhead line and replacing it within underground infrastructure.

1.1.3 Importantly, this CTMP is a 'living document' and focuses primarily on the activities associated with the construction of the Tunnel & Cable contract element of the Project. Any changes, or further information that becomes available during the detailed design and construction stages will be incorporated following consultation with the Highway Authorities as required.

1.1.4 This CTMP defines the HTUK approach to managing traffic during the main construction phase of the Tunnel & Cable contract. HTUK acknowledges that the effective management of traffic and the safety of road users are paramount to successful site preparation and construction. This CTMP describes and explains the approach undertaken to manage and mitigate the impacts of construction traffic. The primary consideration of this CTMP is to maximise safety for all road users and the workforce.

1.1.5 The mitigation measures presented within this CTMP have been informed by the findings of the assessment of construction traffic impacts carried out in the Environmental Appraisal of Traffic and Transport impacts. This CTMP sets out the location specific mitigation measures proposed alongside more generic mitigation measures to be adopted across the Project.

1.1.6 This CTMP will be implemented by HTUK to ensure that the impacts of construction traffic on the local community and other road users are minimised as far as reasonably practicable.

1.1.7 This CTMP forms Appendix 4 of the HTUK Construction, Environment & Sustainability Management Plan (CE&SMP).

1.1.8 CTMP revision P08 was previously submitted for approval to Gwynedd Council (GC) and Snowdonia National Park Authority (SNPA) to discharge planning conditions. Gwynedd Council part discharged their condition 4 on the 9th February 2023 and Snowdonia National Park Authority part discharged their condition 4 on the 27th April 2023. The part discharges were related to further information being provided when available for the routing of abnormal loads associated with the Tunnel Boring Machine (TBM).

1.1.9 Garth is the drive site for the TBM where it will be delivered to site, launched and supplied. It will be the primary construction compound for the Tunnel & Cable contract.

1.1.10 Cilfor is the reception site for the TBM where it will be recovered and removed from site. It will be the secondary construction compound for the Tunnel & Cable contract.

1.2 Background and Scope

1.2.1 The Project comprises the installation of a 3.5km cable tunnel to replace a section of the 4ZC 132kV and 400kV existing OHL underground. The tunnel extends from a location close to National Grid's existing Garth Sealing End Compound (SEC) on the western side of the Dwyryd Estuary, to Cilfor on the eastern side of the Dwyryd Estuary. Following the construction and fit out of the tunnel it will be necessary for others under a separate contract with National Grid to remove the existing OHL and pylons.

1.2.2 For the Tunnel & Cable contract, it will be necessary to provide Contractor's construction compounds, laydown areas, temporary access tracks, and a temporary off-site living accommodation facility for workers (Workers Accommodation) to support construction activities.

1.2.3 The key elements of the Tunnel & Cable contract are summarised below:

Garth - Western Side of the Dwyryd Estuary (Planning Jurisdiction of GC)

- Diversion of third-party utility assets, including the SPEN 11kV overhead line away from the construction area.
- Reconfiguration and extension of equipment at the existing Garth SEC including removal of the gantry.
- A Tunnel Head House (THH) over a tunnel shaft, with a permanent access road close to the existing Garth SEC. The ground will be raised out of the flood zone level.
- Permanent power and water supplies to the THH.
- Underground buried 400kV cables to connect to the SEC from the THH.
- Temporary laydown areas to facilitate construction activities.
- A section of cable tunnel of approximate total length 3.5km, with an internal diameter of 3.5m, at varying depths below the ground between Garth and Cilfor shafts.

Cilfor - Eastern Side of the Dwyryd Estuary (Planning Jurisdiction of SNPA)

- Diversion of third-party utility assets including the SPEN 11kV overhead line and the diversion/protection of Dŵr Cymru Welsh Water (DCWW) pipelines away from/within the construction area.
- A THH over a tunnel shaft, with a permanent access road. The ground will be raised to create a working platform out of the flood zone and will be regraded/ contoured.

- A new SEC adjacent to the THH required to connect the new underground cables from the tunnel/THH to the retained existing OHL.
- A permanent power and water supply to the THH.
- A foul cess pit from the THH.
- Temporary access route and laydown areas to facilitate construction activities.
- A section of the 3.5km tunnel.

Dwyryd Estuary (Planning Jurisdiction of Natural Resources Wales (NRW))

- Ground Investigation and asset monitoring along the route of the tunnel.
- A section of the 3.5km cable tunnel under the estuary**.**

1.3 CTMP Objectives

1.3.1 This CTMP sets out the good practice principles that will be implemented to mitigate, so far as reasonably practicable, the potential effects of traffic during the construction phase of the Tunnel & Cable contract.

1.3.2 The key objectives for the CTMP are as follows:

A. Ensure that movements of people, plant and materials are achieved in a safe, efficient, timely and sustainable manner.

B. Ensure that any impact to the local communities and local tourism industry is reduced so far as reasonably practicable.

C. Ensure construction traffic levels are acceptable.

D. Reduce and control construction vehicle trips where practical.

E. Ensure strategies and mitigation measures are implemented and adhered to through continued monitoring, review and improvement of the CTMP.

F. Limit the effects of construction traffic on the Local Road Network (LRN) and Strategic Road Network (SRN).

1.4 Scoping and Consultation

1.4.1 The Tunnel & Cable contract spans the administrative boundaries of GC, NRW, and SNPA. An Outline CTMP (OCTMP) was submitted to the respective planning authorities with the planning application for the Project with an invitation to provide comment.

1.4.2 In late 2017, consultation was undertaken with the Stakeholder Reference Group (SRG). At that time concerns were raised in relation to the potential volumes of additional traffic arising from an east to west direction of tunnel drive from Cilfor, and the potential impact upon Pont Briwet. As a consequence the west to east tunnel drive from Garth was explored and subsequently adopted in the interest of minimising the impact of traffic along Pont Briwet.

1.4.3 Subsequently, consultation was undertaken with GC highways officers on the 8th August 2018 to discuss the construction traffic routing and access arrangements, the likely traffic effects arising from the Project and the requirement for traffic management. Furthermore, public consultation events took place during late 2018. Members of the Traffic and Transport team attended an event in Penrhyndeudraeth in November 2018.

1.4.4 In April 2022 a meeting was held with GC highways officers to provide an overview of the latest Tunnel & Cable contract proposals. This was followed by a site meeting in the same month at the locations of the THH compounds to review the proposed construction phase traffic management measures. More recently, in July 2022 a meeting was held with GC highways officers to discuss increased HGV numbers a slight HGV routing amendment on Cambrian View and traffic management arrangements for Garth, including the NCR8 cycle route diversion and speed limit restrictions.

1.4.5 In October 2022 a meeting was held with North & Mid Wales Trunk Road Agency (NMWTRA) officers to discuss the CTMP proposals and gain /raise awareness of the proposals to temporarily divert the NCR8 cycle route along the A487 and A497. This meeting was subsequently followed up in November 2022 with a joint meeting between NMWTRA officers and officers of Sustrans, custodians of the National Cycle Network in the UK, to specifically discuss traffic management measure options for the section of the NCR8 impacted by the Project.

1.4.6 Consultation and stakeholder engagement will continue to be conducted as necessary throughout the lifetime of the Tunnel & Cable contract.

1.4.7 The mitigation measures outlined in Section 7 of this CTMP include the appointment of a Traffic Safety and Control Officer (TSCO). A key aspect of their role will be to act as a point of contact for the Tunnel & Cable contract throughout the construction phase and to liaise with local people, the local highway authorities, and any other relevant stakeholders.

1.5 Study Area

1.5.1 The 'Study Area' within this CTMP has been defined by the links that construction traffic will be required to use. The most appropriate and likely routes for vehicles were identified considering their likely origins and destination points and the type of vehicles. Section 3 of this CTMP describes the routing strategy.

1.5.2 The Study has been extended in this revision P09 to include the Penamser Road Contractor's compound, Cookes Field Contractor's compound, and the Blaen Cefn Workers Accommodation. The Penamser Road Contractor's compound is located outside of the original 'Study Area'. The Cookes Field compound and Blaen Cefn Workers Accommodation are both located within the original 'Study Area'.

1.5.3 The movement of Abnormal Indivisible Loads (AILs) will be subject to separate AIL route assessments and notifications and are excluded from the LGV and HGV general study area for this CTMP version. Various abnormal loads are anticipated for which the routes will be planned and notified using the Electronic Service Delivery of Abnormal Loads (ESDAL) portal. Additionally, the equipment associated with the TBM and large 400kV cable drums may fall under the 'Special Order' movement category and require further assessment. The other general AIL movements will typically only require the ESDAL route planning and notification process however some C&U and STGO loads may also require

further local route assessment. The part discharge of GC and SNPA planning conditions requires submission and approval of further information by the LPAs regarding the routing of abnormal loads associated with the TBM.

1.5.4 In terms of highway links the Study Area commences from Porthmadog High Street and the A487 Porthmadog Bypass to the west and terminates on the eastern side of the Dwyryd Estuary, approximately 500m north and south of Cilfor, on the A496.

1.5.5 In addition to this, the Study Area was extended to consider non-motorised infrastructure, including the National Cycle Network and Public Rights of Way (PROW).

1.5.6 The Study Area for this CTMP, including the identification of LGV and HGV construction routes is presented on Figure 1 below.

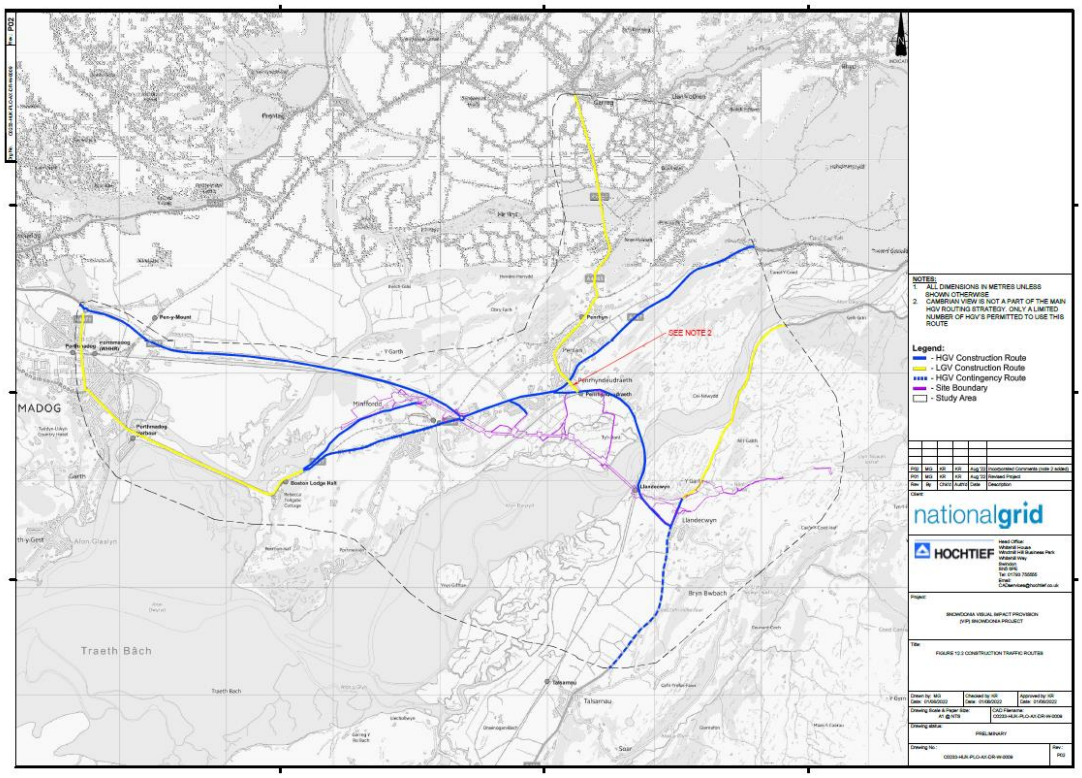

Figure 1 – Study Area and LGV and HGV Traffic Routing

1.6 Project Timescales

1.6.1 An indicative summary programme for the construction phase is provided for information in section 12, Appendices.

1.6.2 Preliminary and enabling works commenced in September 2022, with the shaft constructions at Garth and Cilfor planned to commence in July 2023 and August 2023 respectively. The TBM is planned to be delivered to the Garth site in February 2024 with the tunnel drive operation from Garth expected to start in April 2024 and be completed in April 2025. The TBM is expected to be removed from the Cilfor site in May 2025. The

peak volume of construction traffic movement will occur during the tunnel drive from Garth with the importation of tunnel segments and other materials and equipment, and the removal of extracted waste spoil material coinciding with the completion of the shaft at Cilfor.

1.6.3 The Tunnel & Cable contract main construction is scheduled for completion at the end of 2026. HTUK will then demobilise from site and later remobilise for the HTUK part of the OHL outage works in September 2028 to January 2029.

1.6.4 The Garth drive site and the Cilfor reception site have been working sites from February 2023 and May 2023 respectively , although some Preliminary Works occurred from September 2022. Following main construction demobilisation in December 2026, temporary traffic management measures will be removed. Traffic Management requirements during the OHL outage works will be coordinated with National Grid's OHL Contractor and agreed with the highway authorities.

1.7 Changes since revision P08

1.7.1 An additional Contractor's compound will be utilised at Penamser Road, Porthmadog. This compound will be used for the storage of equipment and materials only. HGV access requirements are expected to be infrequent.

1.7.2 An additional Contractor's compound will be utilised at Cookes Field, Penrhyndeudraeth. This compound will be used by HTUK's Ground Investigation subcontractor as a base during the enabling works phase and by HTUK during the main development phase as an ancillary compound providing additional capacity to support the Garth and Cilfor compounds.

1.7.3 A temporary off-site living accommodation facility for workers will be provided at Blaen Cefn subject to planning consent being obtained. A Transport Statement was carried out and submitted as part of the Pre-Application Consultation (PAC).

1.7.4 The layout of the Garth compound has been updated.

1.7.5 The layout of the Cilfor compound has been updated.

1.7.6 Gwynedd Council Highway Unit comments dated 7th March 2023 have been incorporated.

2. CONSTRUCTION VEHICLE CLASSIFICATION

2.1 Overview

2.1.1 A variety of LGV, HGV and AIL vehicles will be used for the construction of the Tunnel & Cable contract. Vehicles will be required to transport people, equipment and materials, including excavated material from the tunnel drive.

2.1.2 Construction vehicles have been classified as follows, in accordance with the Driver and Vehicle Standards Agency Lorry types and weights guide[1]:

- LGV = Vehicles 3.5 tonnes (t) or below in gross weight; and
- HGV = Vehicles above 3.5 t in gross weight.

2.1.3 Table 1 outlines the vehicle classification and typical vehicle types that will be required for the construction of the Tunnel & Cable contract.

Table 1. Project Vehicle Classification

VEHICLE CLASSIFICATION	EXAMPLE
LGV (i.e. 3.5 t or below)	Car, van, 4x4, pick up, welfare van, mini-bus
HGV (i.e. over 3.5 t)	Excavator, HIAB/winch tractor, tractor and trailer, 10m and 12m rigid vehicles, 20t tippers, concrete mixers, 14m and 16.5m articulated vehicles, low loaders, small and large cranes.

2.1.4 An abnormal load is a vehicle that has any of the following:

- A weight of more than 44,000 kilograms.
- An axle load of more than 10,000 kilograms for a single non-driving axle and 11,500 kilograms for a single driving axle.
- A width of more than 2.9 metres.
- A rigid length of more than 18.65 metres.

2.1.5 Peak traffic volumes are described below in order to provide an indication of traffic volumes of HGVs and LGVs during the tunnel construction. Please refer to Table 12:13 in section 12, Appendices for further information.

[1] https://www.gov.uk/government/publications/guide-to-lorry-types-and-weights

2.1.6 The peak construction phase in terms of works traffic generation will relate to the tunnel drive operated from Garth overlapping with the shaft construction at Cilfor. Tunnelling works are programmed to take place over 18 months including launch and demobilisation. Tunnelling will generate in the order of 30 loads per day of waste spoil, (60 two-way HGV movements) undertaken by vehicles with a load carrying capacity of 8 m3 (undisturbed soil volume in the ground) (20t tippers). Also during this period it will be necessary to import tunnel segments on articulated vehicles and other required materials and plant to support the tunnelling drive. Total HGV movements at Garth are estimated to be a maximum of 46 loads per day (92 two way HGV movements). In all instances there will be no movement of excavated material offsite during weekends and no HGV deliveries outside of the core working hours. During the tunnel drive, worst-case forecasts indicate that activities could also generate 122 LGV movements per day (244 two way LGV movements) spread across three shifts. At Cilfor, the peak construction activity in terms of traffic generation will relate to the site establishment and shaft construction which is estimated to be a maximum of 30 loads per day (60 two way HGV movements) with an average of 10 loads per day over the course of the Tunnel & Cable contract.

2.1.7 Construction traffic movements will be scheduled and managed to minimise the convoying of vehicles to/from the site.

2.1.8 In addition to LGVs and HGVs, there will be a general requirement for the movement of AILs associated with earthworks plant, piling plant, and cranes. The movement of these loads are defined as AILs due to the vehicles falling outside the provisions contained within The Road Vehicles (Construction and Use) Regulations 1986[2] and The Road Vehicles (Authorised Weight) Regulations 1998[3].

Vehicles complying with The Road Vehicles (Authorisation of Special Types) (General) Order 2003 (STGO) may also be utilised. There are three weight categories of STGOs.

- Category 1 – maximum gross vehicle weight N/A and maximum category gross weight 50,000 kilograms.
- Category 2 – D x 7,500 kilograms and maximum category gross weight 80,000 kilograms.
- Category 3 – D x 12,500 kilograms and maximum category gross weight 150,000 kilograms.

(where D = the distance in metres between the foremost and rearmost axles of the vehicle carrying the load; or, in the case of articulated vehicles the kingpin and the rearmost axle on the semi-trailer; or, in the case of any other description of combination, the foremost axle and the rearmost axle of the group comprising of all the vehicles in the combination that are carrying a load)

2.1.9 Other specific AIL movements will include the mobilisation and demobilisation of the TBM and associated equipment, and large 400kV cable drums. These AILs may also need 'Special order movements' due to the size and/or weight and will require further route assessment. Some C&U and STGO loads may also require further local route assessment.

[2] The Road Vehicles (Construction and Use) Regulations 1986. SI 1986:1078 (as amended)
[3] The Road Vehicles (Authorised Weight) Regulations 1998. Si 1998:3111 (as amended)

2.1.10 Special Orders will be required for loads where:

- Gross weight of vehicle carrying the load exceeds 150,000 kilograms.
- Width exceeds 6.1 metres.
- Maximum length exceeds 30 metres.

2.1.11 The movement of all AILs will follow the ESDAL notification process. Under the process advanced warning will be given to:

- The police.
- Highway authorities
- Bridge and structure owners, for example Network Rail.

2.1.12 Form VR1 will be issued for loads of width exceeding 5 metres up to 6.1 metres.

2.1.13 An aide memoire for notification requirements for the movement of AILs or vehicles by road when not complying with The Road Vehicles (Construction and Use) Regulations 1986 is included in Appendix 17.

2.1.14 Whilst an assessment of AIL movements has been considered and reported previously during the planning application stage, specific AIL assessments will be undertaken following the completion of the design and procurement of the TBM and associated equipment, and HV cable drums which is scheduled for Summer 2023. The AIL assessments will be undertaken in a timely manner in consultation with the Highway Authorities. The resulting AIL assessment reports will be provided to Gwynedd Council and Welsh Government/NMWTRA for approval.

2.1.15 The suppliers hauliers responsible for the transportation of equipment requiring AILs will enter and notify all AIL movements using the ESDAL system.

2.1.16 The shaft constructions will require large individual concrete pours, particularly for the base and cover slabs. The Cilfor base slab is foreseen to be the largest at 600m3 and is likely to extend outside of the core working hours. The relevant stakeholders will be informed a minimum of 2 weeks in advance of each occurrence if the number of HGVs in section 2.1.5 and 2.1.6 above will be exceeded and further mitigation measures agreed and implemented as necessary.

2.1.17 Fracht Group have been appointed by HTUK's TBM supplier Herrenknecht as the haulier to transport the TBM to and from site. Fracht Group will be responsible for the provision of detailed route assessments, ESDAL notifications and transport resources.

3. CONSTRUCTION TRAFFIC ROUTES

3.1 General

3.1.1 The highway network within the Study Area comprises of the Strategic Road Network (SRN) and the Local Road Network (LRN).

3.2 Road Hierarchy

3.2.1 The North and Mid Wales Trunk Road Agent (NMWTRA) on behalf of Welsh Government are responsible for managing the SRN within the Study Area and Gwynedd Council are responsible for managing the LRN.

3.2.2 In order to provide vehicular access and facilitate construction, there are two types of road network to be utilised (road hierarchy).

Table 2. Road Hierarchy

TYPE	DESCRIPTION
Type 1 – Strategic Road Network (SRN)	Within the Study Area, this comprises the A487 running east-west from the commencement of the Porthmadog Bypass to the north east of Penrhyndeudraeth.
Type 2 – Local Road Network (LRN)	Within the Study Area, this comprises the Gwynedd Council maintained LRN.

3.3 Strategic Road Network

3.3.1 Construction traffic is required to enter and leave the Study Area network via the SRN. The LRN will provide access between the SRN and construction traffic access points. HGV and LGV construction traffic routes are presented in Figure 1 above. Please note the routes to the Penamser Road Contractor's compound are not shown on Figure 1.

3.4 Local Road Network

3.4.1 Use of the LRN will be restricted for HGV traffic to a limited number of routes. Construction traffic routes have been identified in order to provide the most safe and suitable access for HGVs and LGVs along the LRN as far as reasonably practicable, with the intention of avoiding, for example, residential areas and sections of road sensitive to increases in traffic flows. Please note the routes to the Penamser Road Contractor's compound are not shown on Figure 1.

3.5 Temporary Access Tracks

3.5.1 In addition to SRN and LRN routes, temporary access tracks will provide access to and within work sites from the LRN. The design and construction of temporary access tracks will be informed by the works vehicle types, other road users, usage, and ground conditions in each location. The layouts for the Garth and Cilfor compounds are provided in section 12, Appendices.

3.5.2 The temporary access track to the eastern THH at Cilfor will be modified following the construction phase to a permanent construction for the operational phase. This is discussed further in Section 4 of this CTMP.

3.6 Routing Strategy

3.6.1 The routing strategy is based on the following key principles:

- Provide safe and efficient construction access;
- Reduce, so far as reasonably practicable, and mitigate to acceptable levels disruption to the public;
- Prevent use of the A497 through Porthmadog by HGVs; (Refer also to section 3.6.2 Penamser Road compound routing for exception)
- Prevent use of the northern section of the A496 by HGVs;
- Where practical use the shortest route between the access point and the SRN;
- So far as reasonably practicable avoid sensitive receptors; and
- HGV traffic will be required to enter the road network from the SRN (i.e. the A487). HGVs will then be required to follow prescribed routes to and from working areas. HGV routes will also be used by LGV construction traffic.

3.6.2 The roads to be used by HGV and LGV construction traffic are listed in Table 3, which sets out the links that form part of construction traffic routes. These are also presented in Figure 2.

Please note the routes to the Penamser Road Contractor's compound are not shown on Figure 2.

The preferred route for HGVs to access and egress the Penamser Road compound will be from the A487 Porthmadog Bypass using the A498 and A497. However, there is a 4.0m height limit on the heritage railway overbridge on the A498. HGVs that exceed the bridge height limit will access and egress the compound from the A487 Porthmadog Bypass using the High Street and the A497.

The Cookes Field compound and the Blaen Cefn Workers Accommodation are both located on permitted HGV routes.

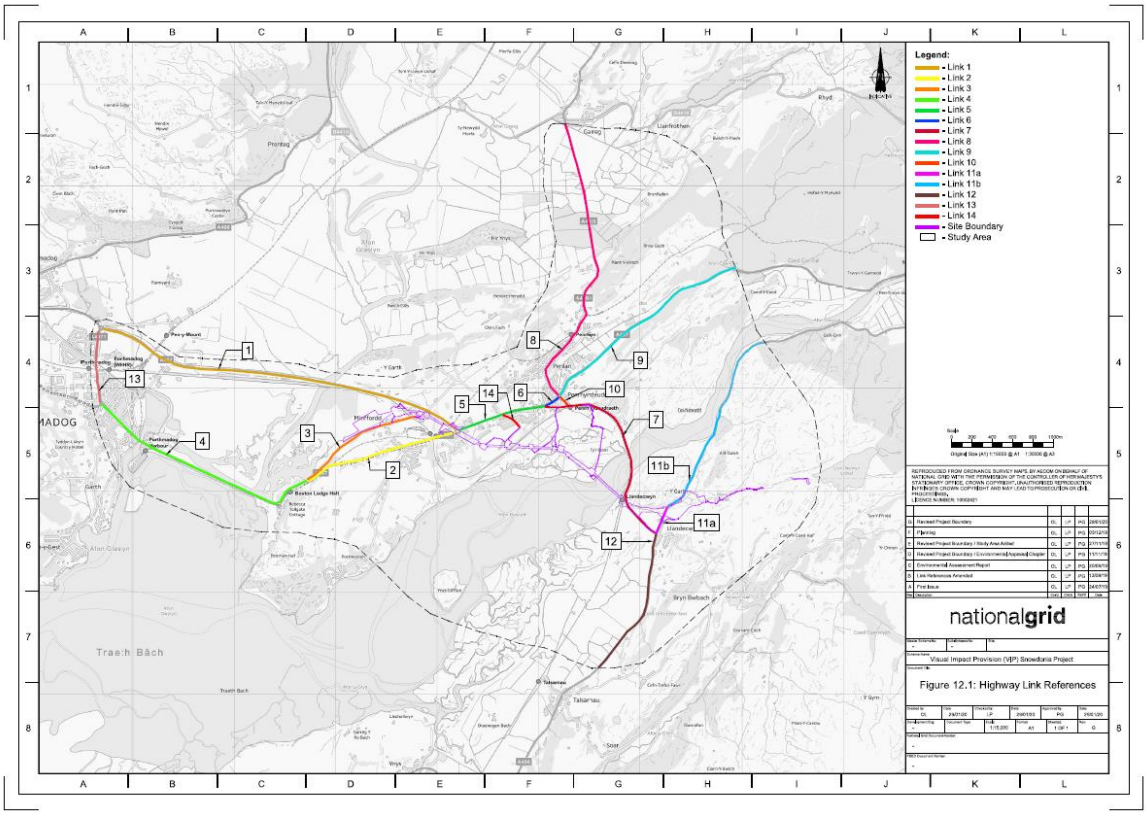

Figure 2 – Highway Link References

Table 3. Project Link References

REF	ROAD	DESCRIPTION	LRN/SRN	HGV/LGV
1	A487	Porthmadog Bypass	SRN	HGV
2	A497	Minffordd Roundabout to NCR8	LRN	HGV
3	NCR8	Between A497 and Existing Garth SEC Compound	LRN	HGV
4	A497	Britannia Terrace	LRN	LGV
5	A487	Between Minffordd Roundabout and Pont Briwet	SRN	HGV
6	A487	Between Pont Briwet and Cambrian View	SRN	HGV
7	Pont Briwet	Between Bron Meirion Surgery and A496	LRN	HGV
8	A4085	North of A487/ School Street Junction	LRN	LGV
9	A487	East of Cambrian View	SRN	HGV
10*	Cambrian View	Between A487 and Pont Briwet	LRN	HGV*

REF	ROAD	DESCRIPTION	LRN/SRN	HGV/LGV
11a	A496N	North of Pont Briwet Junction to Access B9	LRN	HGV
11b	A496N	North of Access B9	LRN	LGV
12**	A496S	South of Pont Briwet Junction	LRN	HGV**
13	A497	Porthmadog High Street	LRN	LGV
14**	Unclassified	Serving Maes Hendre, Adwyddu, and Maes Teg	LRN	LGV
N/A	A498 & A497	Preferred HGV access to Penamser Road compound.	LRN	HGV
N/A	Porthmadog High Street & A497	Secondary HGV access to Penamser Road compound (avoiding low bridge on A498)	LRN	HGV

* Link Ref 10 Cambrian View is not part of the main HGV routing strategy. Only a limited number of HGVs are permitted to use this route.
** A496S Contingency Route: This link will only be used if all other possible construction traffic routes are unavailable for example due to an emergency event on the highway network.

3.6.3 HTUK will ensure that HGV traffic only use designated construction traffic routes during construction. HTUK will manage this by using a logistics tracker to schedule deliveries, log materials, identifying planned routing, constraints and delivery requirements. The logistics tracker system are still being procured.

3.6.4 Notwithstanding the use of a logistics tracker, the routes are generally the most direct, and therefore most likely to be used by HGVs, minimising any possible breaches of the prescribed routing.

3.6.5 The assessment of the LGV and HGV routes has followed the methodology in the Environmental Appraisal Chapter 12 Traffic & Transport paragraphs 12.2.47 to 12.2.50 and represents a robust, worst case, assessment for HGVs.

3.7 Highways Constraints and Considerations

3.7.1 Site visits and audits have taken place along the proposed construction traffic routes and at construction access points. Matters which have been considered to inform the construction traffic routing are as follows:

- Height and weight restrictions;
- Highway classification;
- Highway structures;
- Highway layout (width and horizontal/vertical alignments);
- Traffic calming measures;

- Built environment indicators (BEIs) adjacent to the highway;
- Visibility constraints;
- Speed limits and surveyed traffic speeds;
- PRoW; and
- Other road users (pedestrians, cyclists and equestrians).

3.7.2 In order to minimise the potential environmental effects and in accordance with the CTMP objectives, mitigation measures were embedded into the design. In addition to the routing strategy, these include:

- Access Location - Access locations have been selected to be located along routes that are suitable for the category of traffic.
- Access Design - Accesses have been designed to accommodate the category of traffic to be served from each access. Visibility splays have been provided in accordance with TAN18 requirements and informed by speed survey data where relevant.

3.7.3 The mitigation measures during the construction phase of the Tunnel & Cable contract are highlighted in Table 4 and detailed in Section 7 of this CTMP and includes additional best-practice measures to ensure effects across the Study Area arising from construction traffic are minimised so far as reasonably practicable.

3.7.4 All mitigation measures are discussed in more detail in Section 7 of this report.

Table 4. Road Network Constraints and Considerations

STAGE OF MITIGATION	CONSTRAINT/ CONSIDERATION	MITIGATION
Construction Traffic Routing and Access Planning Stage	Urban areas (villages, towns, schools)	Construction traffic routes avoid sensitive areas so far as reasonably practicable.
	Narrow local roads and junction constraints	Avoid unsuitable LRN where practical.
Construction Traffic Routing and Access Planning & Construction Stage	Existing highway conditions	Appropriate inspections and condition surveys to be agreed with Local Highways Authorities (Highway Authority).
	Existing highway structures	Structure locations identified and avoided where practical. Appropriate surveys to be undertaken (to be agreed with Highway Authority)
	Visibility at access points	Visibility based on Technical Advice Note (TAN) 18. Appropriate vegetation clearance, traffic management and speed reduction

STAGE OF MITIGATION	CONSTRAINT/ CONSIDERATION	MITIGATION
		measures to be implemented to achieve safe access.
	Impact on pedestrians and cyclists	Construction traffic routing strategy. Appropriate traffic management, signage and communications.
	Road safety	Construction traffic routes and temporary access design. Suitable traffic management, signage and communications. Road safety awareness amongst contractors and continued liaison with Highway Authority and emergency services.

3.8 Contingency Routes

3.8.1 In order to ensure that construction activities are not unduly disrupted by unforeseen events on the road network (e.g. closures and diversions) it is considered necessary to provide alternative routes for HGV construction traffic. Consequently, the southern section of the A496 (Link Ref 12) has been identified as a 'Contingency Route'.

3.8.2 Contingency routes will only be used if one of the preferred construction traffic routes become unavailable. A route is considered to be 'unavailable' if it is either closed (by the Highway Authority or the police) or becomes subject to a restriction making it unsuitable for construction traffic (for example a weight or height restriction).

3.9 Workforce Travel & Parking

3.9.1 It is anticipated that a peak daily workforce of up to 275 personnel could be present on site across the Tunnel & Cable contract during the busiest periods.

3.9.2 Tunnelling activities at the Garth construction compound will take place over three shifts during a 24-hour period seven days a week. Generally, the TBM drive will be carried out Monday to Saturday with maintenance activities taking place on Sunday's. During other stages of the project and at Cilfor, a single shift will be worked Monday to Friday 0800 to 1700 for general construction works. Any general construction works Monday to Friday 1700 to 1800, and Saturday 0800 to 1300 will be subject to the approval of the National Grid Project Manager. There will be no working on a Sunday without prior approval from the National Grid Project Manager and the Local Planning Authority.

3.9.3 A dedicated staff compound and car park will be provided at both the Garth and Cilfor sites during the construction phase. HTUK are currently applying for planning consent for the Blaen Cefn Workers Accommodation, which will then provide additional workforce parking there with shuttle bus runs to sites.

3.9.4 Notwithstanding the above, it is expected that much of the workforce will be residing locally and will therefore share car journeys, as appropriate. Whilst it is not expected to occur, obstructive and inconsiderate parking on the adjacent highways will impede construction activities and cause inconvenience and nuisance to local communities. It will therefore be monitored and enforced against as part of the HTUK management of each working location.

3.9.5 In order to manage staff, travel patterns, minimise the impact upon the LRN, limit the demand for on-site parking, and to avoid on-street parking near work sites, HTUK will actively promote the use of bus and train public transport, car sharing and implement measures to minimise single-occupancy car trips to worksites.

4. CONSTRUCTION TRAFFIC ACCESS

4.1 Access Locations

4.1.1 Vehicular access associated with the Tunnel & Cable contract main worksites will be located at the two THH locations at Garth and Cilfor.

4.1.2 Temporary Access locations and Permanent Access locations associated with the Tunnel & Cable contract are defined as follows:

- **Temporary Access Locations** - those to be used during the construction phase by construction traffic.
- **Permanent Access Locations** - those to be used during the operation and maintenance phase.

4.1.3 Accesses have been located and designed in order to reflect the type and frequency, of vehicular access required during the construction, and operation and maintenance phases.

4.1.4 Swept path analysis has been undertaken at each location for the largest anticipated vehicle type. HTUK are currently undertaking the detailed design of the access locations.

4.1.5 Traffic management measures will be implemented to minimise the need for the time and disruption associated with physical highway works. The approach to traffic management is discussed in detail in Section 5 of this CTMP.

4.1.6 The Penamser Road Contractor's compound will utilise the existing highway access.

4.1.7 The Cookes Field Contractor's compound will utilise the existing highway access.

4.1.8 At the Blaen Cefn Workers Accommodation an existing highway access will be widened and improved to provide visibility splays. The access will be separate to and located 400m from the existing access to the Caravan Park.

4.2 Temporary and Permanent Access

4.2.1 The access requirements for the Tunnel & Cable contract are described in Table 5. In addition to stating whether the access location is temporary or permanent, Table 5 indicates where an access location is new or will involve the use of an existing access location. Section 184 consents will be obtained from Gwynedd Council for the new accesses.

Table 5. Construction Access Schedule

REF	ELEMENT SERVED	EXISTING	DESCRIPTION	STATUS	START DATE
A1a/A1b	Garth construction compound	No	New Access required in approximate location of a field gate during construction to accommodate larger vehicles and facilitate two-way working. This will be located immediately adjacent the permanent access.	Temporary (New)	February 2023
A1b	Garth THH	No	New Access required in approximate location of a field gate to provide access and egress to the THH during the operational phase.	Permanent (New)	April 2026
A1c	Garth SEC	Yes	Existing access to Garth SEC	Permanent (Existing)	October 2028
A2	Cilfor Construction Compound, THH & SEC	No	New Access. Upgraded access to be retained for operational phase.	Permanent (New)	May 2023
N/A	Penamser Road Contractor's compound	Yes	Existing access	Temporary (Existing)	May 2023
N/A	Cookes Field Contractor's compound	Yes	Existing access	Temporary (existing)	January 2023

REF	ELEMENT SERVED	EXISTING	DESCRIPTION	STATUS	START DATE
N/A	Blaen Cefn Workers Accommodation	Yes	Existing access to be upgraded	Permanent (upgraded)	October 2023

4.3 Visibility Splays

4.3.1 Details of visibility splays at the Garth THH for construction and operational access have been considered and accepted by the Highway Authority at the planning stage. Refer to Figure 3 below.

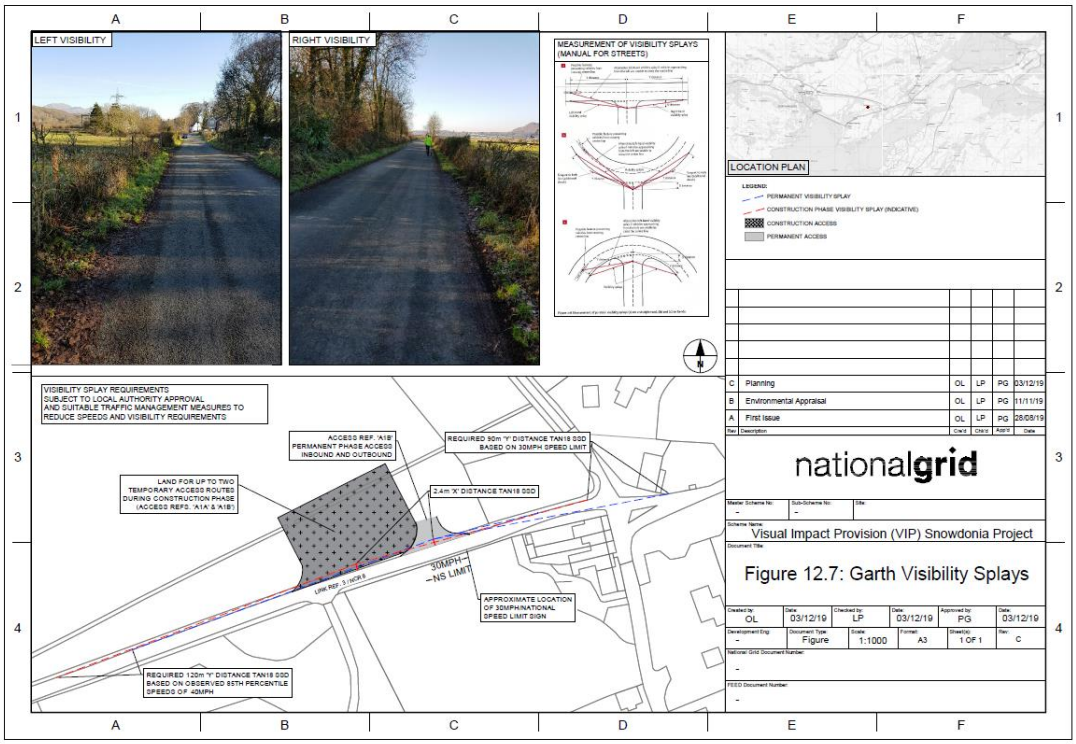

Figure 3 – Garth Visibility Splays

4.3.2 Details of visibility splays at the Cilfor THH for construction and operational access have been considered and accepted by the Highway Authority at the planning stage. Refer to Figure 4 below.

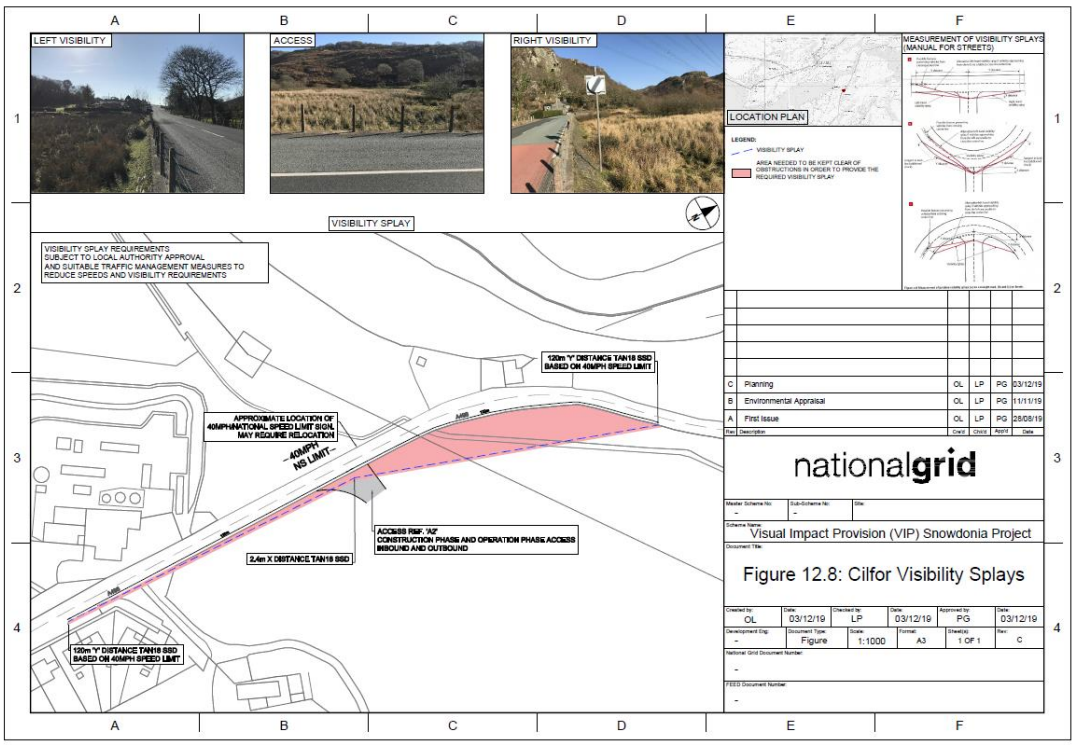

Figure 4 – Cilfor Visibility Splays

4.3.3 At the Blaen Cefn Workers Accommodation visibility splays will be provided and swept path analysis has been carried out on the proposed site access. Refer to Figure 5 below.

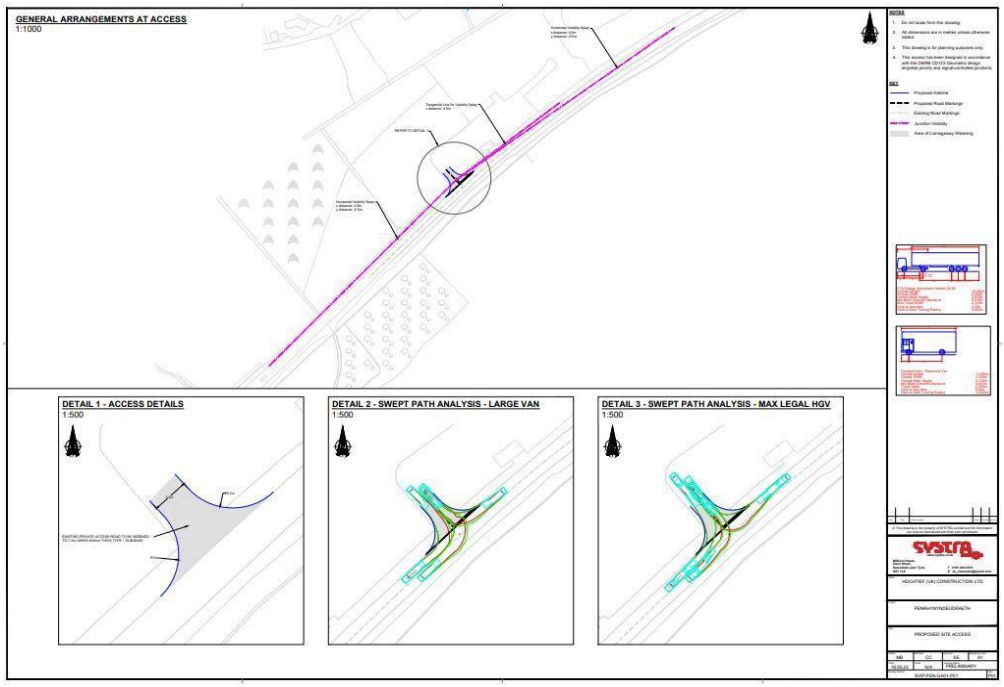

Figure 5 – Blaen Cefn Workers Accommodation visibility splays

4.3.4 During the construction phase HTUK will ensure that visibility splays are managed and maintained in accordance with the approved plans including the cutting of vegetation such that sight lines are not obscured.

4.3.5 In the event that there are locations where visibility standards cannot be met or where other environmental consideration are required to be taken into account (e.g. loss of habitat/ vegetation clearance), HTUK will provide mitigation in agreement with the relevant Highway Authority.

4.4 Temporary Access Tracks

4.4.1 Temporary access tracks will be provided as required between access points and working areas at each THH. HTUK will be responsible for ensuring the management and safe operation of vehicular movements along these access tracks. Measures will be installed to control the risks from vehicle/people interfaces.

4.4.2 Traffic management along temporary access tracks is discussed in more detail in Section 5.

4.5 Operational Traffic Access

4.5.1 Activities during the operational and decommissioning phases are outside the scope of this CTMP. However, maintenance and inspection activities associated with the Project are typically very infrequent and are associated with considerably less vehicular traffic than the construction phase.

4.6 Access Summary

4.6.1 Figure 6 provides a summary of the link references and access locations, which are prefixed with an "A" for the Tunnel & Cable contract. Table 6 provides a summary of proposed access arrangement for each element of the Project during construction and operation.

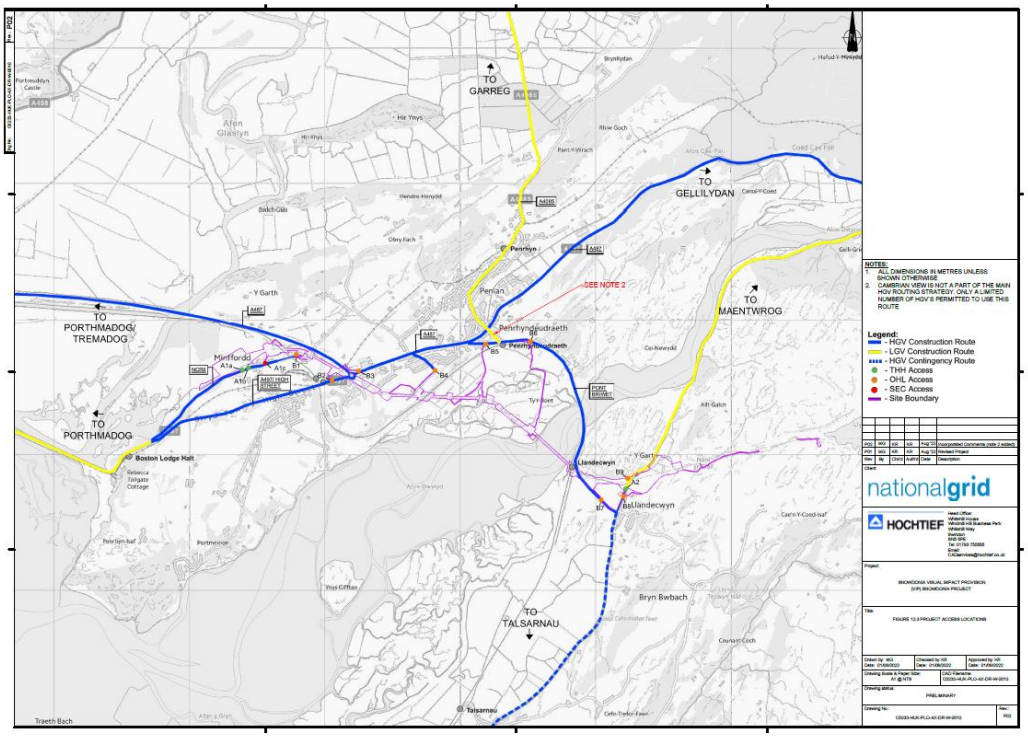

Figure 6 – Highway Link references and Access Locations

Table 6. Project Elements: Construction and Operation Access

PROJECT ELEMENT	PHASE	LOCATION	ID	DESCRIPTION
THH & Construction Compound	Construction	Garth	A1a/A1b	Temporary access at the Garth THH and construction compound will be provided by a new access from Link Ref. 3. This will serve as an entry access. The access will be removed and reinstated following the construction phase.
THH & Construction Compound	Construction	Garth	A1a/A1b	Temporary egress at the Garth THH and construction compound will be provided by a new exit onto Link Ref. 3. The egress will be removed and reinstated following the construction phase.

PROJECT ELEMENT	PHASE	LOCATION	ID	DESCRIPTION
SEC	Construction	Garth	A1a/A1b	Access to the SEC for cable laying/reconfiguration works will be taken via the Garth compound access during the construction phase.
THH, SEC & Construction Compound	Construction	Cilfor	A2	Temporary access and egress will be provided by a new access from the A496N, Link Ref. 11a. The access will operate as right turn in/left turn out for HGVs in accordance with the designated construction traffic routes. Appropriate signage will be installed, along with Traffic Marshall(s)/Gateman to ensure compliance and the safe movement of vehicles. The existing 30mph speed limit on the A496 is proposed to be extended with an advisory speed limit.
Ancillary Works	Construction	Tunnel Route	Various	Various approved accesses will be utilised for ancillary works, for example ground investigation and asset monitoring, along the tunnel route.
Penamser Road Contractor's compound	Construction	Penamser Road, Porthmadog	N/A	Temporary access and egress will be provided using the existing access on Penamser Road.
Cookes Field Contractor's compound	Construction	Penrhyndeudraeth	N/A	Temporary access and egress will be provided using the existing access on Pont Briwet.
Blaen Cefn Workers Accommodation	Construction	Penrhyndeudraeth	N/A	Temporary access and egress will be provided using an upgraded

PROJECT ELEMENT	PHASE	LOCATION	ID	DESCRIPTION
				existing access on the A487.
THH	Operation	Garth	A1b	Operational access to the THH will be provided from a new permanent access A1b.
SEC	Operation	Garth	A1c	Operational access to the SEC will be provided from the existing arrangement.
THH & SEC	Operation	Cilfor	A2	Operational access to the THH & SEC will be provided from access A2 by upgrading and modifying the temporary construction access.

5. TRAFFIC MANAGEMENT

5.1 General

5.1.1 There is a requirement for traffic management and control methods in order to achieve the objectives of the CTMP. Traffic Signs Manual Chapter 8 states:

- The complexity of traffic management arrangements varies from scheme to scheme but the primary objective is;
  - ***'to maximise the safety of the workforce and the travelling public'***
- The secondary objective is;
  - ***'to keep traffic flowing as freely as possible'***[4].

5.1.2 Where constraints on the highway network have been identified, traffic management has been identified as the preferred solution rather than, for example, physical highway works or the removal of trees and hedges. The HTUK Tunnel & Cable contract with National Grid excludes physical highway works.

5.1.3 Traffic management on all routes will comply with the UK Government's Code of Practice 'Safety at Streetworks and Roadworks' (DfT, 2013)[5] or other relevant legislation and guidance as appropriate at the time of implementation.

5.1.4 Traffic management signage will be in accordance with the Traffic Signs Regulations and General Directions (TSRGD) 2016 and Traffic Signs Manual Chapter 8.

5.1.5 Traffic management associated with the Tunnel & Cable contract will comply with all requirements of the Highway Authorities and the Police.

5.1.6 The works will be organised so that the interference with vehicles and pedestrians using the highway and footpaths is kept to a minimum.

5.1.7 Traffic management measures will provide, maintain and remove adequate protection in the form of barriers, hoardings, lights, etc.

5.1.8 Vehicles crossing footways to enter or leave the site will only be permitted to do so under supervision of a suitably trained Traffic Marshall.

5.1.9 All vehicles over 3 tonnes gross vehicle weight on site which are required to reverse will be fitted with reversing cameras, visual and white sound audible alarms. This will also be a requirement of all subcontractors' and suppliers' vehicles. Banksmen will be provided where required by the risk assessment.

5.1.10 All temporary traffic signs and road markings required will be installed prior to work taking place on site and non-illuminated signs will be reflective and maintained in a clean state throughout the period of works. Care will be taken to reposition, alter or remove

[4] Traffic Signs Manual Chapter 8

[5] Department for Transport (2013) 'Safety at Street Works and Road Works; Code of Practice'. Available from: https://www.gov.uk/government/publications/safety-at-street-works-and-road-works

any signs and markings that become obsolete due to operations and new signs and marking provided on reinstatement of working areas.

5.1.11 All vehicles will be required to be reverse parked.

5.1.12 The site gates will be set back such that encroachment of traffic onto the public highway will not occur.

5.1.13 HTUK have appointed an approved Traffic Management subcontractor, Amberon, to design, implement, inspect, maintain, and remove traffic management schemes.

5.1.14 An inspection, maintenance, and call out regime will be agreed with the Highway Authority including outside of working hours.

5.1.15 Implemented traffic management measures will be monitored and reviewed with improvements and amendments made if required subject to the approval of National Grid and the Highway Authorities.

5.2 Construction Traffic Routes and Access Signage

5.2.1 HTUK will prepare a 'Driver Information Pack' which will include a copy of the access route plans. These will be provided to all suppliers and haulage operators when orders are placed to ensure that drivers are fully briefed on the required routes. The supplier will be made aware that these routes are required to be followed at all times unless agreed or alternate diversions are in place, for example the use of the contingency route.

5.2.2 Temporary signs providing route information for contractors will be erected, subject to the permission of the Highway Authority, at key locations along the construction traffic routes on the LRN and the SRN.

5.2.3 All signs will be bi-lingual, with messages written in Welsh above English on the sign face.

5.2.4 Consistent signage at access locations will be installed during use in order to provide relevant warnings and information to other road users of the presence of construction traffic. If required by the Highways Authority, these signs can be removed or covered when the temporary access is not in use.

5.2.5 Suitable offsite locations will be considered for temporary holding areas for HGV's to wait until called in by the Traffic Marshalls. The location of holding areas will be agreed with the Highways Authority. Any associated drawings will be updated and details of the holding areas will be included within the Driver Information Packs.

5.3 Temporary Access Tracks

5.3.1 HTUK will provide signage on temporary access tracks within the worksites, as appropriate, to assist operation to be undertaken safely and efficiently. This will include information such as: safety messages; advisory speed limits; typical and site-specific hazards; distance to the LRN; area of potential vehicle conflicts; pedestrians, cyclists and the presence of nearby PROWs.

5.3.2 Site access tracks will be designed to minimise the reversing of vehicles by utilising where practicable one way systems and turning circles.

5.3.3 Pedestrians routes will be segregated from vehicular routes with physical measures such as kerbs, fences, and barriers. Separate pedestrian and vehicular accesses will be provided. Pedestrian crossing points will be provided.

5.4 Location – Specific Traffic Management

5.4.1 At the access locations, specific traffic management is required as additional mitigation and these are discussed in the sections below.

5.4.2 The type of traffic management required is dependent on a number of factors including traffic type, speeds, volume, road widths, visibility, vulnerable road users, and site characteristics.

Garth Tunnel Head House & SEC

5.4.3 NCR8 (Link Ref 3) will operate as the route for the transportation of imported and exported plant and materials arising from the works. Link Ref 3 joins the A497 (Link ref 2) east of Porthmadog and will provide access and egress to the Garth construction compound.

5.4.4 The route is anticipated to see regular movements of HGVs. Movements will predominantly be 20t tipper vehicles for transporting excavated material from site, ready mix concrete lorries, steel reinforcement deliveries, tunnel segment deliveries, and other deliveries of general plant and materials. Desktop studies and on-site assessments have identified that HGVs will require the full road width to manoeuvre at the A497 junction, along with areas where there is localised narrowing. These issues were discussed at a meeting with Highway Authority officers and has informed the traffic management proposals for this location to minimise the impacts from construction traffic.

5.4.5 The traffic management measures proposed to be implemented for the duration of the works are presented in Figure 7 and Figure 8 and comprise:

- Link Ref 3 will be closed to all motor vehicles, except construction traffic, access for residents and emergency vehicles. This will reduce the potential conflict of movements between construction traffic and other road users. The impact of the closure and diversion route will be continuously monitored and liaison with the Highway Authority will determine if a part-time arrangement is considered appropriate. The proposed diversion is shown in Figure 9.

- Following consultation with Sustrans, access along Link Ref 3 will be retained for cyclists using this section of the NCR8. Access for cyclists will however only be permitted in a controlled manner, under the direction of the Traffic Marshall(s).

- Traffic management measures to safeguard cyclists along this section of the NCR8 will include ensuring that no HGV movements will pass cyclists. This will be achieved by either clearing the route of all HGV traffic before cyclists are permitted

to pass along the route, or by HGV traffic travelling in convoy ahead, or behind cyclists. Cyclists will be directed to a safe holding place by the Traffic Marshall(s) to be advised to wait until safe to pass. The use of an escort vehicle for cyclists may also be deployed if considered appropriate.

- It will be necessary to close the rear, northern pedestrian access of the cemetery from NCR8.
- A 20mph advisory site speed limit will be implemented on the closed section of Link ref 3.
- A 20mph advisory speed limit will be implemented on the A497 (Link ref 2) from Minfford village past the A497 / NCR8 junction.
- 2-way traffic signals/manual control/priority system will be implemented on Link Ref 3 where the carriageway width is less than that required for 2-way HGV traffic. Traffic Marshalls will be present at all times.
- A welfare facility will be provided for the Traffic Marshall(s) at the A497/NCR8 junction for which a consent will be obtained from Gwynedd Council if required.
- When necessary, 3-way part time traffic signals will be installed during working hours at the A497/NCR8 junction to aid the sweep of HGVs when turning into and out of NCR8. Initially the traffic management will be operated without 3-way traffic signals. Subject to the effectiveness of traffic management arrangements and the steady increase in HGV traffic during the first two years of the scheme the 3-way traffic signal arrangement may be introduced if this is found to be necessary.

5.4.6 The above measures have been guided by an iterative risk assessment process and agreed following consultations with Gwynedd Council, NMWTRA and Sustrans.

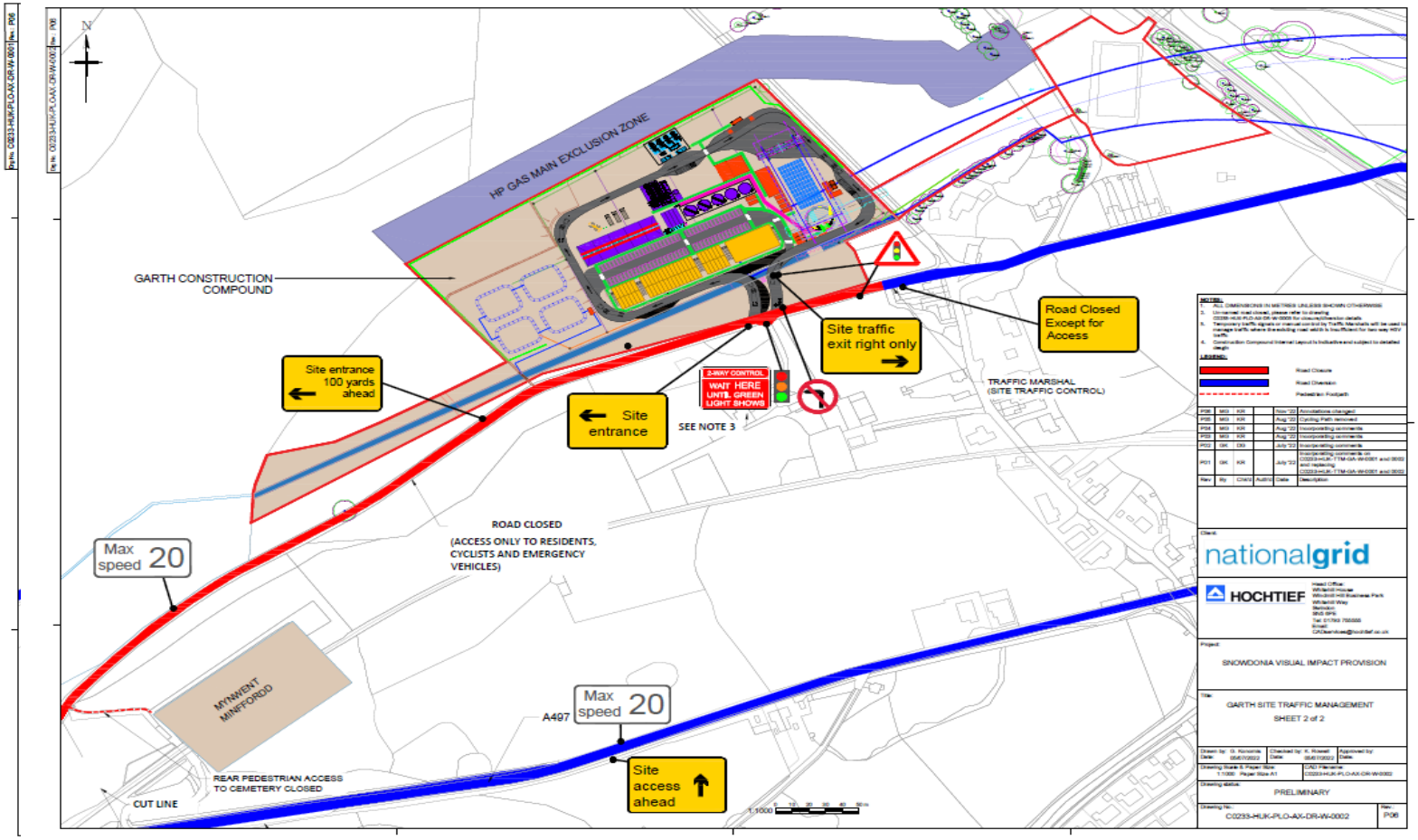

Figure 7 – Garth Traffic Management (1 of 2)

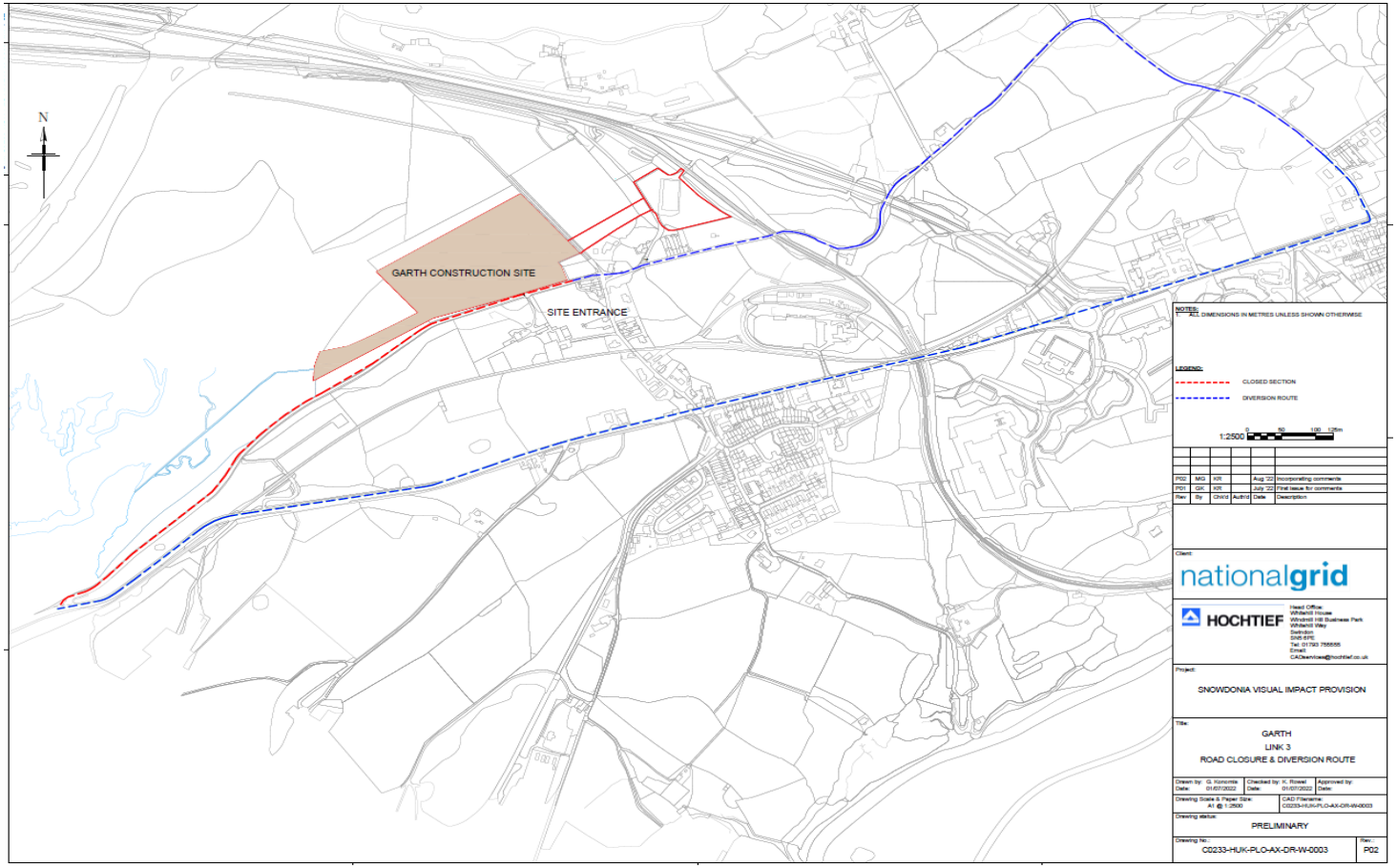

Figure 8 – Garth Traffic Management (2 of 2)

Figure 9 – Garth Link 3 Road Closure & Diversion Route

Cilfor Tunnel Head House & SEC

5.4.7 Access to the Cilfor THH will be taken directly from the A496 (Link 11a) via a right-turn in, left-turn out arrangement for HGVs. In the immediate vicinity of the site access location, the existing speed limit on the A496 changes from 30mph to a derestricted national speed limit. Whilst compliant visibility splays can be achieved, through discussions with Highway Authority officers on site, it is proposed to extend the 30mph speed limit further northwards with an advisory speed limit as an additional safety measure. In addition to offering safer operations for site and public traffic, wider safety benefits are also realised for the village community during the construction period by reducing the speed limit earlier for southbound vehicles approaching the site and the village.

5.4.8 A Traffic Marshall/Gateman will be present at the site access at all times during working hours to ensure the safe movement of vehicles in and out of the site. Their typical responsibilities will include, but may not be limited to:

- Maintaining security and surveillance on site.
- Recording deliveries and managing visitor logbook.
- Conducting visitor safety briefings and ensuring correct PPE is worn.
- Ensuring that drivers adhere to health and safety requirements on site.
- Facilitating the movement of vehicles on-site.
- Ensuring the safe movement of vehicles into and out of the site.

A847/Point Briwet/Cambrian View

5.4.9 On-site observations have identified that the route from Pont Briwet (Link Ref 7) has a reduced carriageway width approximately 50m east of the Bron Meirion Surgery.

5.4.10 However, HGVs currently use this route and no collisions have been recorded at this location in the past 10 years. Gwynedd Council highways officers have advised that whilst the potential risk of conflict between HGVs along this section is acknowledged, the risk is suitably low and represents a more favourable route than HGVs passing along Cambrian View (Link Ref 10), which has a greater level of residential frontage.

5.4.11 All HGVs travelling eastbound on the A487 will turn right onto Pont Briwet (Link Ref 7) and vehicles travelling westbound will be required to join the SRN via Pont Briwet, at its junction with the A487 adjacent to Bron Meirion Surgery.

5.4.12 HTUK will monitor and review traffic movements and route amendments over the construction period in consultation with the relevant Highway Authorities and/or through feedback from local stakeholders and implement improvements/amendments if required.

Penamser Road Contractor's compound

5.4.13 The Contractor's compound is located on the A497 Penamser Road. The nearest postcode is LL49 9NX.

5.4.14 The compound is an additional facility that was not considered during the Snowdonia VIP planning application process and is subject to a land rental agreement with the landowner who has an existing planning consent.

5.4.15 The compound will be used for the storage of equipment and materials. In particular, tunnelling equipment that has been purchased from another HOCHTIEF and National Grid project will be temporarily stored there until required for deployment on Snowdonia VIP.

5.4.16 The existing highway access off the A497, Penamser Road will be utilised.

5.4.17 The compound will require infrequent HGV access.

5.4.18 The preferred route for HGVs to access and egress the Penamser Road compound will be from the A487 Porthmadog Bypass using the A498 and A497. However, there is a 4.0m height limit on the heritage railway overbridge on the A498. HGVs that exceed the bridge height limit will access and egress the compound from the A487 Porthmadog Bypass using the High Street and the A497.

5.4.19 AIL loads will be routed as required by the ESDAL system.

Cookes Field Contractor's compound

5.4.20 The Contractor's compound is located on Pont Briwet (Link Ref 7) at Penrhyndeudraeth. The nearest postcode is LL48 6LL.

5.4.21 The compound is an additional facility that was not considered during the Snowdonia VIP planning application process and is subject to a land rental agreement with the landowner.

5.4.22 The compound will be used by HTUK's Ground Investigation subcontractor as a base during the enabling works phase and by HTUK during the main development phase as an ancillary compound providing additional capacity to support the Garth and Cilfor compounds.

5.4.23 The existing highway access off Link Ref 7 will be utilised.

5.4.24 The compound is situated on a permitted project HGV route and vehicles will follow the Cilfor compound routing.

Blaen Cefn Workers Accommodation.

5.4.25 The facility will provide temporary living accommodation for approximately 100 Snowdonia VIP project workers.

5.4.26 The facility, subject to planning consent, will be located on the A487 on land owned by Blaen Cefn Caravan Park, Penrhyndeudraeth.

5.4.27 The facility was not considered during the Snowdonia VIP planning application process and will be subject to a HTUK planning application.

5.4.28 A Transport Statement has been prepared by Systra as part of the Pre-Application Consultation (PAC).

5.4.29 An existing access approximately 400m west of the site access to Blaen Cefn Caravan Park will be improved. Improvements will include widening and the provision of visibility splays.

5.4.30 An internal access road will be constructed.

5.4.31 A drop off and delivery point is proposed to allow for the safe delivery of services and goods.

5.4.32 An existing public footpath at the rear will provide a safe connecting link into Penrhyndeudraeth.

Working Hours

5.4.33 The core working hours for general construction works (including but not limited to, site establishment, shaft construction, headhouse and sealing end compound construction and reinstatement) will be limited to between 0800 and 1700 Monday to Friday. Works Monday to Friday 1700 to 1800 and Saturday 0800 to 1300 Saturday will be subject to the approval of the National Grid Project Manager. There will be no working on a Sunday or Bank Holiday, unless otherwise approved by the National Grid Project Manager and the relevant local planning authority. Piling will be undertaken between 0900 and 1700 during weekdays only.

5.4.34 HGV routes avoid sensitive parts of the network, such as schools, however HTUK will continue to liaise with the Highway Authority and consider further restrictions in areas where construction traffic may give rise to concern to school operations.

5.4.35 Tunnelling activities will be a continuous operation seven days a week and 24 hours a day. They will involve above ground support plant and equipment, testing of machinery, excavation, operation, and maintenance of the TBM and associated excavation systems and plant.

5.4.36 The following operations may take place outside the core working hours referred to above (exempt activities):

- Tunnelling, including associated above ground plant and equipment required to enable this activity. This can be 24 hours 7 days per week;
- completion of operations commenced during the core working hours which cannot safely be stopped;
- any highway works requested by the Highway Authority or requested by third parties such as Network Rail;
- security monitoring;

- the completion of works delayed or held up by severe weather conditions which disrupted or interrupted normal construction activities; and,

- cable jointing and installation and associated works inside the completed shaft and tunnel.

5.4.37 The core working hours referred to above exclude start up and close down activities up to one hour either side of the core working hours.

5.4.38 In all instances there will be no movement of excavated material offsite during weekends and no HGV deliveries outside of the core working hours.

6. NON-MOTORISED USERS

6.1 Public Rights of Way

6.1.1 The construction activities associated with the Tunnel & Cable contract are not expected to significantly interact with any PROW and no permanent closures or diversions are proposed.

However, Talsamau FP 52 is directly adjacent to the Cilfor site and will be considered in risk assessments with control measures implemented as necessary. Any control measures effecting the PROW will be agreed with the highway authority.

6.2 Wales Coast Path & Other Recreational Routes

6.2.1 Sections of the Wales Coast Path (WCP) are located within the Study Area, namely along Pont Briwet (Link Ref 7) and the A487 (Link Refs 5,6, and 9)

6.2.2 It is also noted that a number of other recreational long-distance walking routes are located within the Study Area, including Snowdonia Way, Taith Ardudwy Way, O Fon I Fynwy, Mawddach-Ardudwy Trail, and Meirionydd Coast Walk.

6.2.3 Despite the proximity to the Project, it is not expected that construction traffic will directly interact with users of the WCP during construction. Where access points are located along links shared with the WCP, route information signs, project information boards and any Chapter 8 signage associated with traffic management will be in place to alert pedestrians to the presence of HGVs. Additionally, Traffic Marshalls will be utilised in such locations where required to hold site traffic at crossing points.

6.3 Cycle Routes

6.3.1 National Cycle Route 8 (NCR8) and NCR82 are located within the Study Area. In parts, they are located along designated construction traffic routes.

National Cycle Route 8

6.3.2 NCR8 is located along a number of the links within the Study Area. The route is comprised of sections of shared routes and sections where cyclists and vehicular traffic are segregated.

6.3.3 As outlined previously, as part of the activities associated with the Garth THH, it is proposed the section of the NCR8 passing along Link Ref 3 will be subject to enhanced traffic management measures to ensure that HGVs do not pass cyclists. The traffic management measures for cyclists will be publicised to raise awareness and appropriate signage implemented. Consultation with Sustrans will continue during the project as required to monitor the effectiveness of the control measures.

6.3.4 Classified Automatic Traffic Counts were undertaken over two-week periods in August 2016, in order to capture the peak local tourist period. These provided data on the number of cyclists using this route, identifying a weekday average of 31 cyclists, with a maximum of 5 cyclists in an hour.

National Cycle Route 82

6.3.5 NCR82 is located along the northern section of the A4085 (Link Ref. 8), adjoining NCR8 via an unclassified road to the west of the A4085. The A4085 (Link Ref. 8) is designated as an LGV route and is expected to cater for minimal increases in traffic as a consequence of the Project. No specific measures are therefore proposed on this route.

6.4 Mitigation for Other Non-Motorised Users

6.4.1 An existing footpath access off NCR8 (Link Ref 3) serves the cemetery. This is a secondary access for pedestrians only, with the main access from the A497. HTUK propose to close the rear access gate and path to the cemetery to mitigate any potential impact between pedestrians and construction related traffic.

7. MITIGATION MEASURES

7.1 Overview

7.1.1 This section sets out the mitigation measures identified for the Tunnel & Cable contract that HTUK will implement, in agreement with the Highway Authorities and relevant stakeholders.

Table 7. Mitigation Measures

MITIGATION MEASURE	CTMP OBJECTIVE
Prescribed HGV Construction Traffic Routes	A/B
Only prescribed construction traffic routes will be used.	
A logistics tracker will be used to schedule expected deliveries identifying planned routing, constraints and delivery requirements	
Self-enforcement and monitoring measures will be provided to reduce the need for the Highway Authorities and North Wales Police to enforce and monitor. These measures will include contractual clauses in supplier orders, and patrols.	
Physical Highway Improvements	F
Physical highway improvements to be implemented where considered necessary at access locations only, including for example amendments to existing accesses to accommodate the swept path of construction vehicles.	
Road Safety Information	A/B
HTUK and National Grid in consultation with the Highway Authorities, will promote and publicise appropriate road safety information during the construction.	
Community Engagement and Public Information	B/D
Information regarding construction traffic activities and movements will be provided to the public. The means of communication will include online updates, letter drops, information boards and details of key contacts.	
Traffic Management and Diversion Routes	A/B/F
Where required, suitable traffic management will be implemented to ensure safe operation and to reduce as far as reasonably practicable the impact of construction vehicles on the highway network.	
Temporary Traffic Regulation Orders	A/B/F
Temporary Traffic Regulation Orders will be required to allow enforcement of reduced and extended speed limits, road closures and parking restrictions.	
Vegetation Management	A/B/F
Where deemed hazardous, overgrown vegetation and grass verge encroachment onto the edge of carriageway along key construction traffic routes and on visibility splays will be managed during construction traffic route use in consultation with the HTUK Ecological Clerk of Works (ECoW).	
Wheel Cleaning Facilities	

MITIGATION MEASURE	CTMP OBJECTIVE
Appropriate facilities will be installed at access locations to allow removal of debris from construction vehicles before they are allowed to egress onto the highway.	F
Street Cleaning Schedule	F
Road sweepers will be provided as required to keep the highways and access roads clean.	
Delivery Management System	ALL
Delivery records will be kept at the construction compounds at Garth and Cilfor. Delivery records will allow vehicular activities to be recorded, monitored and managed throughout the construction to ensure compliance with the CTMP.	
HGV Traffic Movement and Timing Restrictions	C/D/F
HGVs will only be permitted to use predefined routes to/from the site and must adhere to the timing restrictions identified in this CTMP. HGV deliveries will be limited to between 08:00 and 18:00 Monday to Friday, and 0800 to 1300 Saturday. There will be no movement of excavated material offsite at weekends.	
HGV Emissions and Safety Features	A/B
Typical HGVs used for the construction will be to the required Euro Class and could have additional cycle friendly measures such as cameras, sideguards, full length door windows, blind spot warning systems and additional mirrors (class V and VI).	
Abnormal Indivisible Loads (AILs)	A/B/E/F
Temporary traffic management will be provided during AIL deliveries where required, along with appropriate communications with the local community.	
The Department for Transport ESDAL system will be used for notifications.	
Night deliveries will be undertaken where required, to reduce disruption and maintain safety on the LRN and SRN.	
AIL assessments for the TBM and HV Cable Drums will be undertaken in a timely manner in liaison with the highway authorities. AIL assessment reports will be provided to Gwynedd Council and Welsh Government for approval.	
Some C&U and STGO loads may require further local route assessment as above.	
Traffic Marshalls	A
Suitably qualified personnel will be present at key locations and times during construction to guide traffic, pedestrians and cyclists and to enhance safety. They will be easily visually identifiable on site by their PPE, for example specific colour hard hats and/or high visibility upper body clothing with “TRAFFIC MARSHALL” on back.	
Highway Condition Surveys, Maintenance and Repair	F
A highway inspection, monitoring and repair strategy, to be deployed during the construction of the Tunnel & Cable contract will be agreed in advance with the Highway Authority. An Extraordinary Traffic Agreement under Section 59 of the Highways Act 1980 will be entered into.	

MITIGATION MEASURE	CTMP OBJECTIVE
Traffic Safety and Control Officer (TSCO)	A/B/F
HTUK will assign a TSCO for the duration of the construction of the Tunnel & Cable contract. Their details were confirmed to the Highway Authorities prior to the commencement of the traffic management. They will act as the main point of contact with the Highway Authorities and emergency services and undertake the following duties:	
• Check and approve all traffic management drawings prior to issue.	
• Ensure sufficient resource available to maintain traffic management on site.	
• Monitor traffic management to ensure effectiveness and safety to workers and public.	
• Communicate with Highway Authority officers and emergency services, potentially via the TLG.	
• Provide a visible presence at site.	
• Manage Traffic Marshalls and Traffic Management subcontractor.	
Staff Travel Planning	C/D/F
HTUK will introduce measures to reduce the volume of traffic travelling to work sites. These measures will include the use of minibuses to collect workers from local accommodation, a lift sharing scheme, and reduced/ controlled parking at work sites.	
Driver Information Pack	All
HTUK will produce a Driver Information Pack, which will include permitted route plans, specific site details and requirements (i.e. speeds, PPE etc), timing schedule, emergency contact details in the event of an incident and procedures and details of the nearest hospitals. The Driver Information Pack will be available in non-English languages as required.	
Winter Maintenance	
Winter maintenance measures (gritting) on the closed section of NCR8 will be agreed with the Highway Authority.	
Lighting	
Temporary lighting will be considered in the design of traffic management and agreed with the Highway Authority.	
Site access tracks and construction compounds	
Site specific layout designs shall be carried out for the Garth and Cilfor compounds with specific traffic management health, safety, and environmental control measures provided following an assessment of the risks. Control measures shall include the following subject to the risk assessment:-	

MITIGATION MEASURE	CTMP OBJECTIVE
One way traffic systems will be provided where practicable to reduce the reversing of vehicles. Banksmen shall be provided where the reversing of vehicles in areas with pedestrian access cannot be avoided. Separate vehicle and pedestrian routes will be provided. Vehicles and pedestrian routes will be segregated by physical measures such as kerbs, rigid barriers, and fences. Separate access points and gates will be provided for vehicles and pedestrians. Pedestrian crossing points will be provided across access tracks. The surface of pedestrian routes will be suitable to prevent slips, trips and falls. The surface of vehicle routes will be suitable for the vehicles using them. Winter maintenance measures will be carried out to prevent surfaces being frozen, snow covered and slippery. Surfaces shall be kept clean and free from mud, debris and dust. Car parking areas shall be provided. Cars will be reversed parked. Safe pedestrian routes will be provided to and from car parking areas. Emergency vehicle parking areas shall be marked and kept clear. Direction, information, safety and warning signs shall be provided where required. Road markings shall be provided where required. Site speed limits will be provided. Traffic Marshalls/Gatepersons/Security Guarding will be provided where required to control access and to assist in the management of traffic. Lighting will be provided where required.	
New Legislation	
New legislation from Welsh Government means that the default national speed limit will fall from 30mph to 20mph on restricted roads. The legislation will come into force across Wales on 17th September 2023. From that date, the maximum speed you can legally travel on restricted roads will be 20mph.	

7.2 Location Specific Mitigation

7.2.1 Table 8 presents the location-specific mitigation proposed during the construction phase of the Tunnel & Cable contract, to reduce impacts and potential environmental effects arising as a result of the increases in traffic volumes.

Table 8. Proposed Mitigation During Construction

LINK REF	LOCATION	LOCATION SPECIFIC MITIGATION PROPOSED
Garth		

2	A497	Traffic management on the approach to the A497/NCR8 junction. This will include an advisory 20mph speed limit from Minffordd, 3-way temporary part time traffic signals, and advanced warning signage. Initially the traffic management will be operated without 3-way traffic signals. Subject to the effectiveness of traffic management arrangements and the steady increase in HGV traffic during the first two years of the scheme the 3-way traffic signal arrangement may be introduced if this is found to be necessary.
3	Link 3	Traffic management along route to include a closure to all motor vehicles except residents and emergency vehicles, temporary advisory site speed limit of 20mph, traffic signals/Traffic Marshall control, and advanced warning signage to increase awareness of the potential presence of cyclists and pedestrians. The use of Traffic Marshalls located at the THH access and A497/ Link 3 junction to communicate presence of local access traffic, or to hold release of HGVs from site compound. Enhanced traffic management will be implemented along the route when cyclists wish to pass along this section of the NCR8 to ensure that HGVs do not pass cyclists. HGVs being managed by Traffic Marshals and priority given to residential traffic and cyclists. HGVs not permitted to pass cyclists – Information will be passed to delivery companies to pre-warn drivers of the cycle route and extra care needed in this area. Closure of pedestrian rear access to Cemetery.
Cilfor		
11a	A496N	Traffic management along route to include advanced warning signage and extension of existing 30mph speed limit northwards with an advisory speed limit. The existing terminal speed limit signs are located within the area of the proposed access. Subject to agreement with Gwynedd Highways the terminal signs will be relocated.
Penamser Road Contractor's compound		
N/A	A497	Chapter 8 works access signage will not normally be necessary for normal operations. For AIL loads traffic management will be provided where agreed with the highway authority.
Cookes Field Contractor's compound		
7	Pont Briwet	Chapter 8 works access signage will not normally be necessary for normal operations. For exceptional operations Chapter 8 works access will be provided where agreed with the highway authority.
Blaen Cefn Workers Accommodation		

9	A487	Chapter 8 works access signage will be provided on the A487 during the construction and demobilisation stages. During the operational stage signage will be as per the planning consent.

8. MONITORING, REVIEW, & COMMUNICATION

8.1 Communication

8.1.1 As a 'live' document, the management and mitigation measures included in this CTMP will be developed during the design and construction phase.

8.1.2 The HTUK Traffic Safety and Control Officer (TSCO), will be expected to continually engage with key stakeholders and the community as necessary and relevant.

8.1.3 It will be the role of the TCSO to act as an intermediary between National Grid and key stakeholders to maintain open and regular channels of communication so that any effects on the transportation network associated with the Tunnel & Cable contract may be addressed as soon as reasonably practicable.

8.1.4 Through effective and regular communication between National Grid, HTUK and stakeholders, the TCSO will:

- Communicate and monitor the CTMP and its mitigation measures;
- Ensure records of HGV movements are maintained and reported;
- Act as the first point of contact for the public, stakeholders and contractors;
- Hold regular update meetings with Highway Authority and relevant stakeholders;
- Record near misses, incidents and hazards and resolve issues as informed by contractors, stakeholders and the public; and
- Monitor, review and improve, where necessary, the CTMP and associated mitigation measures.

8.1.5 The key contents of the CTMP will be briefed to the workforce at site induction, and included in Supplier orders and the Driver Information Packs. Communication methods will include for non-English languages as required.

8.2 Non compliance

8.2.1 HTUK will continuously monitor the compliance of the measures identified in this CTMP and enforce as necessary. Non-compliance with the measures within this CTMP will be addressed via an escalated warning, culminating in a termination of contract for persistent breaches.

8.3 Traffic Safety and Control Officer

8.3.1 The HTUK TSCO will be supplied via the Traffic Management subcontractor, Amberon:

- Name: Steven Roberts
  Tel: 07957 854085

9. GOVERNANCE

This document will be reviewed as a minimum twelve monthly or when there is significant change.

Significant changes will be agreed with National Grid and the Highway Authorities prior to implementation.

10. TERMS AND DEFINITIONS

The table below defines frequently used acronyms and abbreviations within this document.

Table 9. Terms and Definitions

ABBREVIATION/ACRONYM	DEFINITION
AIL	Abnormal Indivisible Load
CE&SMP	Construction Environmental & Sustainability Management Plan
CTMP	Construction Traffic Management Plan
C&U	The Road Vehicles (Construction and Use) Regulations 1986
DCWW	Dŵr Cymru Welsh Water
ECoW	Ecological Clerk of Works
ESDAL	Electronic Service Delivery for Abnormal Loads
GC	Gwynedd Council
HGV	Heavy Goods Vehicle
HTUK	HOCHTIEF (UK) Construction Ltd
LGV	Light Goods Vehicle
LRN	Local Road Network
NCN	National Cycle Network
NCR	National Cycle Route
NG	National Grid
NMWTRA	North and Mid Wales Trunk Road Agency
NRW	Natural Resources Wales
NWP	North Wales Police
OCTMP	Outline Construction Traffic Management Plan
OHL	Overhead Line

ABBREVIATION/ACRONYM	DEFINITION
PROW	Public Right of Way
SEC	Sealing End Compound
SNPA	Snowdonia National Park Authority
SPEN	Scottish Power Energy Networks
SRG	Stakeholder Reference Group
SRN	Strategic Road Network
STGO	Road Vehicles (Authorisation of Special Types) (General) Order 2003
SVIP	Snowdonia Visual Impact Provision Project
TAN	Technical Advice Note
TBM	Tunnel Boring Machine
THH	Tunnel Head House
TSCO	Traffic Safety and Control Officer
TTRO	Temporary Traffic Regulation Order
WCP	Wales Coast Path

11. LIST OF AMENDMENTS

The table below lists the amendments from National Grid's Outline Construction Traffic Management Plan version 2.0 prepared by AECOM in December 2019 to HTUK's CTMP revision P04 which was accepted by National Grid and submitted to the LPAs for approval and to discharge planning conditions.

Table 10. List of Amendments from outline CTMP

REFERENCE	AMENDMENT
Document Template	A Systra/HTUK template has been adopted that incorporates the general structure of the AECOM OCTMP up to and including section 8. Paragraph numbering revised.
General – OHL works	References to OHL works removed unless relevant to the HTUK Tunnel contract.
General - HGV numbers	Updated for Cilfor to 30 HGV per day peak, 10 HGV per day average.
General - Mitigation measures	Physical measures removed as not part of Tunnel contract scope. Alternative mitigations proposed.
General - AIL	Specific assessments to be carried out at the appropriate stage.
Section 1 Introduction	General update. 1.1.1 contracting arrangements explained. 1.1.9 added. 1.1.10 added. 1.4 updated. 1.6 Project timescales updated.
Section 2 Construction Vehicle Classification	2.1.10 added for large individual concrete pours. Abnormal loads definition added. Special Orders definition added.
Section 3 Construction Traffic Routes	Use of Link 10: Cambrian Way (between A487 and Pont Briwet) now removed from main HGV routing strategy. Only a limited number of HGVs permitted to use this route.
Section 4 Construction Traffic Access	Specific information on Garth & Cilfor accesses added.
Section 5 Traffic Management	Specific measures amended.
Section 6 Non-Motorised Users	Link 3 closure added and traffic management added.

REFERENCE	AMENDMENT
Section 7 Mitigation Measures	Garth & Cilfor measures updated.
Section 8 Monitoring and Review	General update
Section 9 Governance	New section added.
Section 10 Terms and Definitions	New section added.
Section 11 List of Amendments	New section added.
Annex A	AIL report deleted. To be dealt with as a separate submission when information available.
Section 12 Appendices.	Summary Programme added. Drawings added. Updated LGV and HGV numbers added.

The table below lists the amendments from the Construction Traffic Management Plan revision P04 to revision P08 which was accepted by National Grid and approved by the LPAs to part discharge the planning conditions.

Table 11. List of Amendments from CTMP revision P04

REFERENCE	AMENDMENT
Consultation	New paragraph 1.4.5 inserted & following two paragraphs renumbered
Link 3 (NCR8)	New paragraph 1.4.5. Paragraphs 5.4.5, 6.3.3 and table 8 updated
AIL submissions	Further information added. Paragraphs 1.5.2, 2.1.8, 2.1.9 and Table 7 have been updated. Abnormal load definition added in paragraph 2.1.4. Special Orders definition added in paragraph 2.1.10. Reference to STGO vehicles added.
Dates	Dates have been updated in paragraph 1.6.2, 1.6.4 and table 5
Figures	Figures 6 and 7 updated (refer to appendices 12 & 13 below)

REFERENCE	AMENDMENT
Appendices	1 Summary programme updated, 11 Drawing withdrawn, 12 & 13 drawings updated. Appendix 17 added.

The table below lists the amendments from the Construction Traffic Management Plan revision P08 to revision P09.

Table 12. List of amendments from CTMP revision P08

REFERENCE	AMENDMENT
General	General update of dates. Minor update of text. Figures renumbered. Tunnel contract changed to Tunnel & Cable contract. NG changed to National Grid.
1.1.8	New paragraph added. Subsequent paragraphs renumbered.
1.1.9	Text amended.
1.1.10	Text amended.
1.2.2	Text split to new paragraph and further text added. Remaining paragraph renumbered.
1.4.7	Planning changed to highways.
1.5.2	New paragraph added. Study extended to include Penamser Road compound, Cookes Field compound and Blaen Cefn Workers Accommodation.
1.5.3	Paragraph extended to cover part discharge of planning condition requirements.
1.6.4	Text added reference OHL Outage stage.
1.7	New section added to summarise changes from revision P08.
2.1.1	LGV, HGV and AIL added to vehicle descriptions
2.1.14	For information changed to for approval. NMWTRA added.
2.1.17	New paragraph added reference Fracht Group for AIL movements.
3.3.1	Reference to Penamser Road compound added.
3.4.1	Reference to Penamser Road compound added.
3.5.1	Additional text added.

REFERENCE	AMENDMENT
3.6.1	Reference to Penamser Road compound added.
3.6.2	Table 3, typo error Cambrian View corrected.
3.6.2	References to Penamser Road compound, Cookes Field compound, and Blaen Cefn Workers Accommodation added. Table 3, added HGV routing to Penamser Road compound.
3.9.2	Working hours amended to Project Specific Scope requirement.
3.9.3	Reference to Blaen Cefn workers accommodation parking added.
4.1.6	New paragraph reference Penamser Road compound.
4.1.7	New paragraph reference Cookes Field compound.
4.1.8	New paragraph reference Blaen Cefn Workers Accommodation.
4.2.1	Table 5. Penamser Road compound, Cookes Field compound and Blaen Cefn workers accommodation added.
4.3	Paragraphs and figures renumbered.
4.3.3	Blaen Cefn paragraph added. Figure 5 added.
4.3.4	Paragraph amended to include vegetation cutting of visibility splays.
4.4.1	Paragraph amended to include vehicle/people interface.
4.6.1	Table 6. Cilfor speed limit changed to advisory. Penamser Road compound, Cookes Field compound, and Blaen Cefn Workers Accommodation added.
5.1	Some paragraphs split into separate paragraphs. Paragraphs renumbered.
5.1.9	Reference to Banksmen required.
5.3.1	Paragraph amended to include pedestrians and cyclists.
5.3.3	Paragraph amended to include Pedestrian crossing points.
5.4.2	Paragraph amended to include vulnerable road users.
5.4.5	Additional text added to last bullet point reference 3-way traffic signals to be consistent with Appendix 12 drawing note 4.
5.4.7	Paragraph amended including HGVs and advisory speed limit.

REFERENCE	AMENDMENT
5.4.10	Reference to Link 10 added.
5.4.13 to 5.4.19	New heading and paragraphs added for Penamser Road compound.
5.4.20 to 5.4.24	New heading and paragraphs added for Cookes Field compound.
5.4.25 to 5.4.32	New heading and paragraphs added for Blaen Cefn workers accommodation.
5.4.33	Working hours amended to Project Specific Scope requirement.
6.1.1	Reference to Talsamau FP 52 added.
6.3.3	Reference to consultation with Sustrans updated.
7.1	Table 7. New section added for site access tracks and construction compounds.
7.1	Table 7. New section added for new legislation for 20mph speed limits.
7.2.1	Table 8. Garth additional text added reference 3-way traffic signals to be consistent with Appendix 12 drawing note 4.
7.2.1	Table 8. Cilfor speed limit changed to advisory. Penamser Road compound, Cookes Field compound, and Blaen Cefn Workers Accommodation added.
8.3.1	TSCO details added.
9	Review period changed to twelve months.
11	Text added to clarify change stages. New table added for P09 changes.
Appendix 1	Construction Programme updated.
Appendix 8	Garth compound layout updated.
Appendix 9	Cilfor compound layout updated.
Appendix 13	Drawing updated. Compound layout
Appendix 15	Drawing updated. Advisory speed limit.

12. APPENDICES

1. Simplified Summary Construction Programme
2. Figure 12.1: Highway Link References
3. Figure 12.2: Construction Traffic Routes
4. Figure 12.3: Project Access Locations
5. Figure 12.4: Traffic Survey Locations
6. Figure 12.5: Public Rights of Way
7. Figure 12.6: Cycle Routes
8. Garth Contractor's Compound Site Layout
9. Cilfor Contractor's Compound Site Layout
10. C0233-HUK-PLO-AX-DR-W-0003 Garth Link 3 Road Closure & Diversion Route
11. ~~C0233-HUK-PLO-AX-DR-W-0004 Garth Link 3 NCR8 Cycle Route Closure & Diversion~~ (Drawing withdrawn)
12. C0233-HUK-PLO-AX-DR-W-0001 Garth Site Traffic Management sheet 1 of 2
13. C0233-HUK-PLO-AX-DR-W-0002 Garth Site Traffic Management sheet 2 of 2
14. C0233-HUK-PLO-AX-DR-W-0005 Garth Links 2 &4 Temporary Speed Limit
15. C0233-HUK-PLO-IX-DR-W-0006 Cilfor Links 11a & 11b Temporary Speed Limit
16. Table 12:13 Updated HTUK Predicted Peak Year Construction Traffic Impacts
17. Aide memoire for abnormal loads notification requirements

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