

XLINKS' MOROCCO-UK POWER PROJECT

Outline Construction Traffic Management Plan

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XLINKS' MOROCCO – UK POWER PROJECT

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Glossary

Term	Meaning
Abnormal Indivisible Loads	Loads or vehicles that exceed maximum vehicle weight, axle weight or dimensions as set out in the Road Vehicles (Construction and Use) Regulations 1986 as amended.
Alverdiscott Substation	The existing National Grid Electricity Transmission substation at Alverdiscott, Devon, which comprises 400 kV and 132 kV electrical substation equipment.
Construction Traffic Management Plan	A document detailing the construction traffic routes for heavy goods vehicles and personnel travel, protocols for delivery of Abnormal Indivisible Loads to site, measures for road cleaning and sustainable site travel measures.
Converter Site	The Converter Site is proposed to be located to the immediate west of the existing Alverdiscott Substation Site in north Devon. The Converter Site would contain two converter stations (known as Bipole 1 and Bipole 2) and associated infrastructure, buildings and landscaping.
Development Consent Order	An order made under the Planning Act 2008, as amended, granting development consent.
Environmental Statement	The document presenting the results of the Environmental Impact Assessment process.
Landfall	The proposed area in which the offshore cables make landfall in the United Kingdom (come on shore) and the transitional area between the offshore cabling and the onshore cabling. This term applies to the entire landfall area at Cornborough Range, Devon, between Mean Low Water Springs and the transition joint bays inclusive of all construction works, including the offshore and onshore cable routes, and landfall compound(s).
Local Highway Authority	A body responsible for the public highways in a particular area of England and Wales, as defined in the Highways Act 1980. The relevant Local Highway Authority for the Proposed Development is Devon County Council.
Local Planning Authority	The local government body (e.g., Borough Council, District Council, etc.) responsible for determining planning applications within a specific area. The relevant Local Planning Authority for the Proposed Development is Torridge District Council.
Mean Low Water Springs	The height of mean low water during spring tides in a year.
Onshore HVDC Cable Corridor	The proposed corridor within which the onshore High Voltage Direct Current cables would be located.
Onshore Infrastructure Area	The proposed infrastructure area within the Order Limits landward of Mean High Water Springs. The Onshore Infrastructure Area comprises the transition joint bays, onshore HVDC Cables, converter stations, HVAC Cables, highways improvements, utility diversions and associated temporary and permanent infrastructure including temporary compound areas and permanent accesses.
Order Limits	The area within which all offshore and onshore components of the Proposed Development are proposed to be located, including areas required on a temporary basis during construction (such as construction compounds).
Proposed Development	The element of Xlinks' Morocco-UK Power Project within the UK. The Proposed Development covers all works required to construct and operate the offshore cables (from the UK Exclusive Economic Zone to Landfall), Landfall, onshore Direct Current and Alternating Current cables, converter stations, and highways improvements.
Xlinks' Morocco UK Power Project	The overall scheme from Morocco to the national grid, including all onshore and offshore elements of the transmission network and the generation site in Morocco (referred to as the 'Project').

Acronyms

Acronym	Meaning
AIL	Abnormal Indivisible Load
CTMP	Construction Traffic Management Plan
DCC	Devon County Council
DCO	Development Consent Order
ES	Environmental Statement
GPS	Global Positioning System
HDD	Horizontal Directional Drilling
HGV	Heavy Goods Vehicle
MLWS	Mean Low Water Springs
PIA	Personal Injury Accident
TDC	Torridge District Council

1 OUTLINE CONSTRUCTION TRAFFIC MANAGEMENT PLAN

1.1 Overview

- 1.1.1 This document forms the Outline Construction Traffic Management Plan (CTMP), which has been prepared for the United Kingdom (UK) elements of Xlinks' Morocco-UK Power Project (the 'Project'). For ease of reference, the UK elements of the Project are referred to as the 'Proposed Development'.
- 1.1.2 This Outline CTMP sets out the key management and mitigation measures for traffic and transport that will be implemented during the construction phase of the Proposed Development.
- 1.1.3 This Outline CTMP seeks to manage potential impacts that could occur from the construction of the onshore elements of the Proposed Development landward of Mean Low Water Springs (MLWS).
- 1.1.4 In addition to these elements, this Outline CTMP also considers the temporary construction compounds, welfare and site offices and storage areas required to support the construction of the Proposed Development.
- 1.1.5 The onshore elements of the Proposed Development will be constructed within the local authority areas of Torridge District Council (TDC) as the Local Planning Authority and Devon County Council (DCC) as the Local Highway Authority.

1.2 Purpose of the Outline CTMP

- 1.2.1 The draft Development Consent Order (DCO) for the Proposed Development includes a requirement for the preparation of a CTMP(s) which will be submitted to and approved in writing by TDC in consultation with DCC prior to the commencement of onshore construction activity.
- 1.2.2 The purpose of this Outline CTMP is to establish the principles and procedures that will be implemented by the Principal Contractor(s) to minimise and manage the adverse impacts associated with the transport of materials, plant and staff required for construction of the onshore elements of the Proposed Development. The Outline CTMP(s) also presents the standards and procedures for managing the impact of Heavy Goods Vehicle (HGV) movements during the construction period of the Proposed Development, including local highway improvements and traffic management necessary to facilitate the safe use of the local highway network.
- 1.2.3 Should the DCO be granted, this Outline CTMP will evolve and form the basis of a final CTMP(s) which will be prepared in consultation with DCC as the Local Highway Authority prior to approval.
- 1.2.4 The measures set out in this Outline CTMP relate to all areas of onshore construction activity identified in Volume 2, Chapter 5: Traffic and Transport of the Environmental Statement (ES) (document reference 6.2.5) as potentially leading to adverse traffic and transport effects, including enabling works and main construction activity. This includes measures relating to HGV movements and Travel Plan measures relating to construction staff movements.

1.3 Scope of this Outline CTMP

- 1.3.1 The scope of this Outline CTMP applies to both the preliminary and construction stages of the Proposed Development, landward of MLWS.
- 1.3.2 Onshore preliminary activities will be undertaken prior to the commencement of construction. These works comprise the following:
- Pre-construction archaeological investigations.
 - Early planting or landscaping works, where appropriate.
 - Ecological and archaeological mitigation.
 - Environmental surveys and monitoring.
 - Site clearance (including vegetation clearance and site levelling).
 - Investigations for the purpose of assessing ground conditions such as:
 - pre-entry soil surveys; and
 - drainage surveys.
 - Remedial work in respect of any contamination or other adverse ground conditions.
 - The diversion of existing services and the laying of temporary services.
 - The diversion or undergrounding of overhead cabling.
 - Site security works.
 - Establishing compounds and the erection of temporary hardstanding, buildings (e.g. welfare facilities), structures or enclosures.
 - Creation of site accesses.
 - Temporary display of site notices and site advertisements.
 - Receipt and erection of construction plant and equipment.
- 1.3.3 The onshore preliminary activities listed in **paragraph 1.3.2** above will be carried out in accordance with the measures set out in this Outline CTMP. This and other management plans in their outline form will be taken as approved at the grant of Development Consent and valid for the preliminary activities whereas the final CTMP(s) as approved will apply to the main construction stage.
- 1.3.4 The main construction activity will include the following:
- cut and fill groundworks for both converter station development platforms at the Converter Site inclusive of screening bund creation;
 - construction and completion of the onshore HVDC Cable Corridor and Landfall for both bipoles including all mitigation and restoration works, except for the Landfall;
 - laying of offshore cables serving Bipole 1, including pulling cables through to the transition joint bays (at Landfall) and jointing;
 - following the construction of the Landfall and jointing of offshore cables for Bipole 1, the Landfall compound and associated access will be demobilised with the removal of all construction equipment but will remain fenced and secured until the completion of Bipole 2 when further construction work is required at Landfall;

- construction and commissioning of the Bipole 1 converter station, including the associated HVAC Cable Corridors, its own perimeter fencing, security and drainage network;
 - landscape works and on-site planting of habitats in accordance with the Landscape and Ecology Management Plan (document reference 7.10) to implement the biodiversity mitigation and enhancement;
 - construction and commissioning of the Bipole 2 converter station, including the associated HVAC Cable Corridors, its own perimeter fencing and drainage network;
 - laying of offshore cables serving Bipole 2, including pulling cables through to the transition joint bays (at Landfall) and jointing;
 - restoration of the Landfall works area and associated access; and
 - restoration of all other compounds.
- 1.3.5 The commissioning of Bipole 1 and Bipole 2 is expected to be in 2031 and 2033, respectively. Therefore, full operation of the Proposed Development is anticipated to occur in 2033 following the commissioning of Bipole 2.
- 1.3.6 This Outline CTMP also considers the site preparation works related to traffic and transport listed in **paragraph 1.4.8** below.
- 1.3.7 The final CTMP(s) will be agreed with TDC in consultation with DCC prior to the commencement of onshore construction activity commencing. For this Outline CTMP, the term 'construction' includes all related engineering, construction and restoration activities as authorised by the DCO within the Order Limits and are described in more detail below.

1.4 Preliminary and Construction Activities

- 1.4.1 As set out in Volume 1, Chapter 3: Project Description of the ES (document reference 6.1.3), construction compounds will be established early in the construction programme (preliminary activities) within the Onshore Infrastructure Area to support the construction of the onshore elements of the Proposed Development landward of MLWS.
- 1.4.2 The construction compounds will include central offices, welfare facilities and stores, as well as acting as a staging post and secure storage for equipment and component deliveries, as well as for laydown and storage of materials and plant. The construction compounds may also be required where trenchless techniques such as Horizontal Directional Drilling (HDD) are used.
- 1.4.3 The below temporary construction compounds will likely be required.
- Main construction compound:
 - Proposed to be situated between Gammaton Road and Tennacott Lane, southeast of East-the-Water. The compound will be used as the main compound for all construction work across the onshore HVDC Cable Corridor and Converter Site.
 - Secondary construction compound:
 - Proposed to be located adjacent to the A39 to the north of the Abbotsham Cross roundabout. This compound will also include an HDD compound for the A39 crossing.

- Landfall compound:
 - This compound will be situated at the Landfall (Cornborough Range).
 - A386 compound:
 - This compound will be situated to the west of the River Torridge.
 - HDD compounds.
 - Converter Site compound.
- 1.4.4 Where required, temporary utility connections will be constructed for the compounds to provide power, water, foul and communications services. The need for these temporary services will be determined by the contractor prior to establishment of the compound.
- 1.4.5 The construction compounds will be prepared by removing and storing topsoil and subsoil and then constructing hardstanding areas using crushed stone.
- 1.4.6 Following completion of construction of the onshore elements of the Proposed Development, the temporary construction compounds will be removed and the land restored to its former condition.
- 1.4.7 The potential environmental effects of the construction of the onshore elements of the Proposed Development on traffic and transport have been assessed in Volume 2, Chapter 5: Traffic and Transport of the ES (document reference 6.2.5) and comprises the below:
- Adverse effects on driver delay, non-motorised user delay, severance and fear and intimidation due to construction HGV movements and construction staff vehicle movements.
 - Adverse effects due to possible increased risk to highway users as a result of the passage of construction vehicles along existing roads or at site accesses.
 - Adverse effects from the movement of Abnormal Indivisible Loads (AILs) from Appledore to the onshore HVDC Cable Corridor and Converter Site.
- 1.4.8 This Outline CTMP considers preliminary activities (i.e. site preparation), construction activities and site reinstatement, including the following:
- management of HGV movements;
 - AILs;
 - management of construction workforce movement;
 - site accesses;
 - highway crossings;
 - management of highway safety; and
 - implementation and monitoring of the CTMP(s).
- 1.4.9 As detailed in **paragraph 1.3.3**, this Outline CTMP will be taken as approved at the grant of Development Consent and valid for the preliminary activities.
- 1.4.10 The final CTMP(s) will be in general accordance with the principles established in this Outline CTMP and will be agreed with the relevant authority prior to commencing the relevant construction stage of the onshore works (above MLWS) for the Proposed Development (i.e. any updates to the plan during construction would be approved by the relevant authority).

1.5 Management of HGV Movements

Vehicle Types

- 1.5.1 It is expected that vehicle types using the public highway during the construction of the onshore elements of the Proposed Development will include a mixture of cars, vans, rigid and articulated HGVs, including concrete trucks. Additionally, vehicle movements generated during the separate cable pull-in and jointing operation will include HGVs bearing winches, cranes, cars and vans.

Vehicle Routing

- 1.5.2 The access strategy for construction vehicles during construction of the onshore elements of the Proposed Development is set out in Volume 1, Chapter 3: Project Description of the ES (document reference 6.1.3) and in the following paragraphs.
- 1.5.3 The origin of construction HGVs will be predicated upon the procurement of materials at the time of construction; therefore, construction HGVs will likely arrive from a range of origins.
- 1.5.4 The number of construction vehicle movements along the local highway network during construction of the onshore elements of the Proposed Development reflects the location of accesses to the onshore HVDC Cable Corridor and the location of the Gammaton Road construction compound.
- 1.5.5 HGVs will travel along the highway network directly to the relevant construction compound before moving along the onshore HVDC Cable Corridor route on purpose built temporary haul roads, including to the Converter Site from the construction compound at Gammaton Road.
- 1.5.6 During construction of the onshore elements of the Proposed Development, the A39 will be used as the primary route for construction vehicles to access the Onshore Infrastructure Area, before using either Clovelly Road then an unnamed road towards Littleham, an unnamed road towards Abbotsham, the A386 through Bideford, Barnstaple Street and Manteo Way through East-the-Water then Gammaton Road, or the B3236 then an unnamed road towards Kenwith and Abbotsham to access the onshore HVDC Cable Corridor. HGVs will travel along the highway network directly to the relevant access before moving along the onshore HVDC Cable Corridor route on purpose built temporary haul roads, including to the Converter Site from the construction compound at Gammaton Road, to remove these movements from the public highway.
- 1.5.7 There could be several constraints and potential highway safety issues with HGVs travelling along narrow roads within the study area. The temporary construction compounds along the onshore HVDC Cable Corridor will therefore be in areas which are accessible from the A39, the A386, Gammaton Road and the B3236 to enable construction vehicles to be directed towards the relevant construction compounds, while reducing movements along minor roads.
- 1.5.8 It is proposed that construction vehicle access to the Converter Site will be taken from a haul road from the construction compound at Gammaton Road. From the construction compound, construction vehicles will use a haul road which will route adjacent to Gammaton Road and the minor road leading north from Gammaton Cross towards the Converter Site to remove construction traffic from Gammaton Road and turning through Gammaton Cross.

- 1.5.9 It is proposed that access will be required for all types of construction vehicles, including AILs and for certain items such as drill rigs, transformers, cable drums, large cranes and construction plant.
- 1.5.10 The routes to each access for construction HGVs before turning onto temporary haul roads along sections of the onshore HVDC Cable Corridor are set out in **Table 1.1** and are shown on **Figure 1.1** below.

Table 1.1: Routes to temporary construction compounds

Access	Location	Access route
TCC1	Cornborough Sewage Treatment Works	A39 onto B3236 then onto unnamed road to Kenwith and Abbotsham towards TCC1
TCC2	Abbotsham Road	A39 onto unnamed road to Abbotsham at Abbotsham Cross roundabout towards TCC2
TCC3	Littleham Road	A39 onto Clovelly Road at Abbotsham Cross roundabout then onto unnamed road to Littleham towards TCC3
TCC4	A386	A39 onto A386 at Heywood Road Roundabout then through Bideford then onto Littleham Road towards TCC4
TCC5	Gammaton Road	A39 onto B3233 then onto Manteo Way then through East-the-Water then onto Gammaton Road towards TCC5

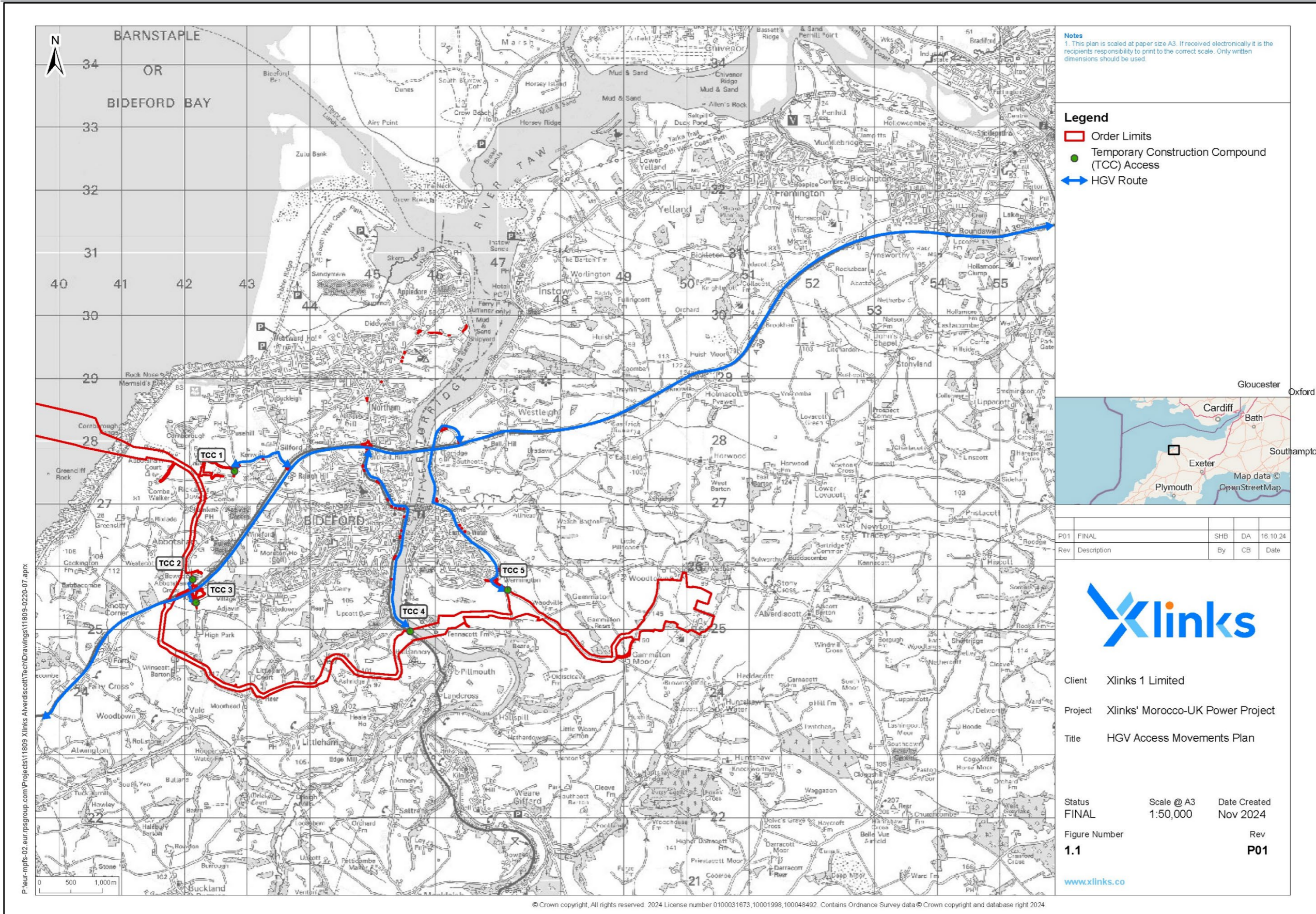


Figure 1.1: Construction Access

- 1.5.11 The final CTMP(s) will include agreed methods of communication with DCC to confirm that these routes remain appropriate and are agreed for use when construction is ready to commence.
- 1.5.12 All contractors will be required to comply with the agreed routing plans and will ensure that all drivers are informed of the need to restrict HGV movements to those specified routes. If complaints are received that vehicles are not following prescribed routes, the Principal Contractor(s) will be responsible for the implementation of measures to record vehicle routing, for example by applying spot-checks to ensure that the agreed routes are being adhered to.
- 1.5.13 If deemed necessary by DCC, the contractors will be requested to maintain a log where routine HGV movements are generated. This will be to demonstrate compliance with following prescribed access routes and delivery times. Furthermore, temporary signs will be posted along the construction access routes.
- 1.5.14 Based on the above vehicle routing, the peak daily construction HGV movements likely to be generated by the construction of the onshore elements of the Proposed Development are set out in **Table 1.2**.

Table 1.2: Proposed Development daily construction traffic flows

Highway link	Construction traffic flows	
	Total vehicles	HGVs
Link 1: A39 between Lake Roundabout and Roundswell Roundabout	710	105
Link 2: A39 between Roundswell Roundabout and B3233	710	105
Link 3: A39 between B3233 and Heywood Road Roundabout	710	105
Link 4: A39 between Heywood Road Roundabout and B3236 Buckleigh Road	714	105
Link 5: A39 between B3236 Buckleigh Road and Abbotsham Cross Roundabout	718	105
Link 6: A39 between B3236 Buckleigh Road and Abbotsham Cross Roundabout	170	105
Link 7: B3233 Barnstaple Street between Barnstaple Street Roundabout and Manteo Way	548	77
Link 8: Manteo Way between Barnstaple Street and Gammaton Road	548	77
Link 9: Gammaton Road between Manteo Way and Tennacott Lane	548	77
Link 10: Gammaton Road between Tennacott Lane and Moorview House	0	0

Highway link	Construction traffic flows	
	Total vehicles	HGVs
Link 11: Gammaton Moor Road between Moorview House and Alverdiscott Substation access	0	0
Link 12: A386 between Heywood Road Roundabout and Wooda Road (and incorporating Wooda Road)	0	0
Link 13: A386 between Heywood Road Roundabout and Ford Rise	39	35
Link 14: A386 between Ford Rise and Wesleyan Chapel	39	35
Link 15: B3236 Buckleigh Road between A39 and Pusehill Road	39	35
Link 16: Bowood Farm Road between Abbotsham Cross Roundabout and Construction Compound Access 2	647	35
Link 17: Littleham Road between Abbotsham Cross Roundabout and Construction Compound Access 3	39	35

Timing of HGV Movements

- 1.5.15 Normal construction working hours will be Monday to Friday, 07:00-19:00, and Saturday, 07:00-13:00; however, some operations may require work to take place outside these times. For example, AILs may be encouraged or required to travel overnight, and crossings of roads may be constructed overnight to minimise disruption to traffic.
- 1.5.16 In certain circumstances, specific works may have to be undertaken on a continuous basis (00:00 to 00:00, Monday to Sunday). During this period, the contractor may undertake activities that require continuous working hours, which will be notified to the relevant local authorities in writing. These activities include, but may not be limited to:
- HDD (or other trenchless technology) operations which may require 24-hour machinery operation, dependent on the ground conditions;
 - continuous concrete pours;
 - converter station component installation;
 - oil filling of transformers at the converter stations;
 - jointing operations along the onshore HVDC Cable Corridor; and
 - testing and commissioning.
- 1.5.17 It should be noted that not all these activities will involve HGV movements or will generate only infrequent HGV movements, such as oil filling of transformers at the converter stations, and so are of a different nature to the frequent HGV movements of primary consideration within this Outline CTMP.

- 1.5.18 Up to an hour before and after the normal construction working hours, the following activities may be undertaken:
- arrival and departure of the workforce at the site and movement around the main Proposed Development that does not require the use of plant;
 - site inspections and safety checks; and
 - site housekeeping that does not require the use of plant.
- 1.5.19 This hour before and after the normal construction working hours will not include HGV movements to or from the temporary construction compounds along the public highway, but contractors using light vehicles can make use of the wider public highway network outside of these hours to travel to or from the Proposed Development.
- 1.5.20 At all times, no vehicles will be permitted to wait or queue on the public highway while seeking access to the Proposed Development, no vehicles will be permitted to load / unload on the public highway, and all vehicles must turn off engines while stationary after turning off the public highway.

Reducing the Impact of HGV Movements

- 1.5.21 The load sizes will typically be maximised and thus vehicle usage is typically minimised by contractors to reduce transportation costs and this will be encouraged by the Principal Contractor(s). Where possible, site supervisors will be encouraged to re-use HGVs such as using vehicles which have delivered material to remove excavated material if this needs to be removed from a site. Where practical, local suppliers will be used to reduce the distance travelled by HGVs.
- 1.5.22 All HGVs transporting fine and loose material will be sheeted to avoid dust and the spillage of materials onto the public highway. Dampening of surfaces, such as the haul road in locations where it is close to the public highway, will be undertaken in dry weather where the movement of vehicles or delivery of loads may cause immoderate dust.
- 1.5.23 Where there is a risk of mud from the construction works being transported onto the public highway network by HGVs, wheel cleaning facilities will be provided at each construction compound access to ensure that HGVs do not deposit mud and dust onto the public highway network.

1.6 Management of AILs

- 1.6.1 The construction vehicles to transport cable drums to the onshore HVDC Cable Corridor and transformers to the Converter Site will be AILs on the public highway in terms of both weight and size. The cable drums and transformers for the Proposed Development will arrive at Appledore Quay by sea before onward travel along the highway network by AILs to either the onshore HVDC Cable Corridor or the Converter Site.
- 1.6.2 The access routes to be used by AILs will be of a standard that safely accommodates the movement of these vehicles. The route must be of a standard to safely accommodate the AILs to ensure the insurance of the heavy haulage company is valid. Any restrictions along the routes will also be removed to accommodate the transport delivery vehicles and they will travel under controlled environments.

- 1.6.3 Depending on the width, length or weight of the vehicle, different notice periods must be provided to highway authorities, bridge authorities and the police. These can vary between two and five days. The below activities will need to be undertaken in accordance with the Road Vehicles (Authorisation of Special Types) Order 2003 (STGO).
- Before the start of any journey, notify in accordance with Schedule 5 the chief office of police for each area in which the vehicle or vehicle combination is to be used.
 - Ensure that the vehicle or vehicle combination is used in accordance with the requirements of that Schedule.
 - Ensure that the vehicle or vehicle combination is accompanied during the journey by one or more attendants employed in accordance with Schedule 6.
- 1.6.4 The number of AIL movements will be low and each load will be present on the highway network for a short period of time. Standard measures (including traffic management measures) will be applied in terms of route, timing and method of delivery to minimise delays to other highway users. The police will be notified of all AIL movements and will give prior notification to the locality via methods such as local newspapers/radio so that other users have advance notification and can avoid or re-time their journeys to negate any impact.
- 1.6.5 AILs will also be under escort, as directed by the local police authority or as voluntarily provided by the heavy haulage contractor, with those delivering transformers being under police escort. Escorts will not only control the AILs but will also interact with other road users to control, guide and protect them accordingly to safeguard their safe and expedient passage. This includes not just other vehicles but also non-motorised users and those who simply wish to watch/observe the movement of the AILs transporting the larger transformers from the roadside.
- 1.6.6 From Appledore Quay, the AILs will travel along Wooda Road and then the A386 towards the A39 at Heywood Road Roundabout, before using the same highway network or temporary haul roads as the HGVs to access the onshore HVDC Cable Corridor or Converter Site.
- 1.6.7 The timing of AIL deliveries will be discussed with DCC to minimise delay and risk to other highway users. DCC and the police will dictate the timing of AIL deliveries along the highway and this may be during night time periods.

1.7 Management of Construction Workforce Movement

Construction Workforce Routing

- 1.7.1 All construction staff working at the Converter Site and the onshore HVDC Cable Corridor to the east of the River Torridge will travel to the main construction compound using the A39, Barnstaple Street, Manteo Way and then Gammaton Road.
- 1.7.2 All construction staff working at the onshore HVDC Cable Corridor to the west of the River Torridge will travel to the secondary construction compound using the A39 and then the unnamed road to Abbotsham, before onward travel by minibus to other work fronts in the Onshore Infrastructure Area.

- 1.7.3 From the secondary construction compound (TCC2), minibuses will travel to TCC1 south along Abbotsham Road, the A39, the B3236 then along the unnamed road to Kenwith and Abbotsham towards Cornborough Sewage Treatment Works, minibuses will travel to TCC3 south along Abbotsham Road, along Clovelly Road and then along Littleham Road, and minibuses will travel to TCC4 south along Abbotsham Road, the A39 then along the A386 through Bideford onto Littleham Road.

Construction Workforce Travel

- 1.7.4 There is value in managing and reducing the movement of construction workers across the local highway network. The final CTMP(s) will document measures to be implemented to encourage construction workers to make use of sustainable modes of transport where possible and where appropriate, including those in the list below.
- The control of car parking on and around construction sites to avoid car parking on verges and along the public highway, to avoid vehicles idling and waiting for access and to deter construction workers from driving unnecessarily.
 - Provide incentives to car share and information to facilitate car sharing to increase vehicle occupancy and reduce single occupancy car use.
 - Measures to encourage walking and cycling where appropriate where these modes offer an opportunity for construction workers to access sites, including provision of temporary cycle parking at work sites.
 - Provide welfare facilities at the construction compounds to reduce the need for construction workers to travel elsewhere during the day.
 - The working hours of 7am to 7pm seek to avoid construction workers travelling during the highway network peak hours and therefore reduce the impact on the highway network.

1.8 Site Accesses

- 1.8.1 The Onshore Infrastructure Area includes temporary and permanent accesses to the Converter Site and temporary and permanent accesses to the onshore HVDC Cable Corridor.
- 1.8.2 The access for the Converter Site will include the provision of a new access road from the minor road running north south between Webbery Cross and Gammaton Cross. The access road will be developed to the south of the existing Alverdiscott Substation entrance and will allow for AIL deliveries and two-way movement of HGV deliveries to the site. This access will be retained post-construction as an operational access for the converter stations, with access gates and a control access building in place to control access to the Converter Site.
- 1.8.3 The locations of the accesses to the onshore HVDC Cable Corridor are, as follows:
- existing access track to Cornborough Sewage Treatment Works;
 - existing field gate along the unnamed road towards Abbotsham, north of Abbotsham Cross Roundabout;

- existing field gate along the unnamed road towards Littleham, south of Clovelly Road;
 - new access along Littleham Road west of the A386; and
 - new access along Gammaton Road east of Tennacott Lane.
- 1.8.4 The onshore HVDC Cable Corridor will require access tracks (referred to as 'haul roads') to allow the movement of construction vehicles and the installation of the cable circuits, in addition to other related works such as temporary construction compounds and laydown areas.
- 1.8.5 During construction of the Proposed Development, access will be required for HGVs, AILs for certain items (drill rigs, transformers, cable drums, large cranes or construction plant) and for construction workforce traffic. All traffic to the onshore HVDC Cable Corridor will enter the onshore HVDC Cable Corridor at one of the locations stated above before moving along the route on purpose built temporary haul roads. It is proposed that access to the Converter Site during construction will also use the onshore HVDC Cable Corridor, in addition to the minor road network depending upon the sequencing of the proposed road widening.
- 1.8.6 The Proposed Development will include the below improvements to the local highway network, which will facilitate access for HGVs and AILs during both construction and operation and maintenance.
- Cornborough Sewage Treatment Works:
 - widening to the existing access junction to facilitate AILs and HGVs; and
 - widening of the existing access track to facilitate two-way HGV movements.
 - Abbotsham Road:
 - widening of the existing field gate to facilitate AILs and HGVs.
 - Littleham Road:
 - widening of the existing field gate to facilitate AILs and HGVs.
 - A386:
 - realignment and widening of Littleham Road to facilitate AILs and HGVs and improve the existing levels, gradients and geometries; and
 - signalise the realignment of Littleham Road with the A386.
 - Gammaton Road:
 - new access junction to be created.
 - Road improvement works at Gammaton Moor, including the following potential options:
 - widening of Gammaton Road in selective locations to enable full two-way movement of vehicles;
 - a new junction west of Gammaton Moor Crossroads and a new section of private road connecting Gammaton Road with the unnamed road to Converter Site;
 - potential relocation of the unnamed road to the Converter Site further to the west to facilitate utility diversions (gas and water) within and adjacent to the Converter Site (to be confirmed during the detailed design); and

- asymmetric widening either online or offline of the unnamed road to the Converter Site to enable full two-way running for light vehicles.
- 1.8.7 These improvements are proposed on both the public highway and on private land as part of the Proposed Development, noting that the improvements are subject to further detailed design. As such, all potential improvements may be refined through detailed design.
- 1.8.8 The final design of all site accesses will be agreed with DCC prior to the start of construction at each work site. The working areas will be designed to enable plant, materials and waste to be loaded/unloaded and all areas will be designed to enable vehicles to enter and leave in a forward gear. No contractor or supplier will be permitted to wait or load/unload from the public highway, unless under traffic management control during the formation of the accesses.
- 1.8.9 All site accesses will be provided with appropriate fencing to ensure that work sites are secure. All site accesses will be designed to eliminate the risk of vehicles queuing back onto the highway by providing sufficient length and width close to the adjacent highway, which is appropriate for the types of vehicles anticipated to use the access.

1.9 Management and Mitigation

- 1.9.1 Where there is a risk that vehicles will deposit mud and debris on the highway in the vicinity of construction site accesses, wheel cleaning facilities will be provided. The condition of the adjacent highway will be monitored and if mud or debris is found to be present, measures such as road sweeping will be put in place by the contractor to secure its removal with minimal delay.
- 1.9.2 Appropriate signage will be provided on the approach to construction site accesses to warn of turning and/or slow-moving vehicles. The design and siting of all signage will be agreed with DCC prior to the start of work at each work site. The signage can also be placed at the exit of construction site access points to instruct construction traffic to follow the designated route.
- 1.9.3 Relevant details or contact numbers will be on display for the general public to raise any concerns.
- 1.9.4 Once a construction site access is no longer required, the access will be removed and the highway returned to its original condition.
- 1.9.5 There may be a need to provide traffic management measures at some accesses and along some routes to the accesses. This may be required for various reasons and the type of traffic management measures to adopt will depend upon the location on the highway, the nature and level of traffic on the highway and what is served by the highway, as well as the alternative routes available. Some examples are set out below.
 - Requisite visibility splays cannot be provided at an access and so traffic on the highway may be temporarily stopped to allow HGVs to exit an access safely or three-way portable signal control may be temporarily installed.
 - The highway geometries are too narrow to safely accommodate turning HGVs when exiting an access and so traffic on the highway may be temporarily stopped to allow HGVs to exit an access safely or three-way portable signal control may be temporarily installed.

- The highway geometries are too narrow to accommodate HGVs passing an oncoming vehicle and so shuttle working may be temporarily installed.
 - The highway geometries are too narrow to accommodate simultaneous turning movements through junctions and so three-way portable signal control may be temporarily installed at T-junctions or four-way portable signal control temporarily installed at crossroads.
 - Where any offsite highway works are being undertaken.
- 1.9.6 Where traffic on the highway is stopped, this could be via temporary portable signals or via manually operated STOP / GO signs.
- 1.9.7 Shuttle working is where one direction of travel receives priority over the other along the highway. This could be via temporary portable signals or via give way signs.
- 1.9.8 Some example layouts of these traffic management measures and features are shown in **Figure 1.2** to **Figure 1.8**. These examples are taken from the Traffic Signs Manual, Chapter 8, Part 1 – Traffic Safety Measures and Signs for Road Works and Temporary Situations (Department for Transport / Highways Agency (now National Highways), Department for Regional Development (Northern Ireland) (now Department for Infrastructure (Northern Ireland)), Transport Scotland and Welsh Assembly Government (now Welsh Government), 2009). The extracts are generic in nature and not designed to be specific to any location or circumstance but designed to be implemented in accordance with the advice contained within the document.
- 1.9.9 The Health and Safety at Work, etc. Act 1974 and the Health and Safety at Work (NI) Order 1978 require all clients, employers and employees to establish and maintain safe systems of work. Traffic authorities, statutory undertakers and contractors must give due attention to the detailed traffic management arrangements at road works sites and incident locations to ensure the safety of the public and of their own employees at these obstructions.
- 1.9.10 It is essential for the safety of all concerned that uniform and consistent procedures should be adopted. Chapter 8, Part 1 of the Traffic Signs Manual is intended to provide a standard of good practice for the signing and marking of obstructions as well as for the temporary traffic control necessitated by such obstructions of the highway. The standard described is a minimum, which should always be achieved. At difficult sites, i.e. sites where the on-site risk assessment has shown that the level of risk is above normal, further signs and other equipment will be necessary.

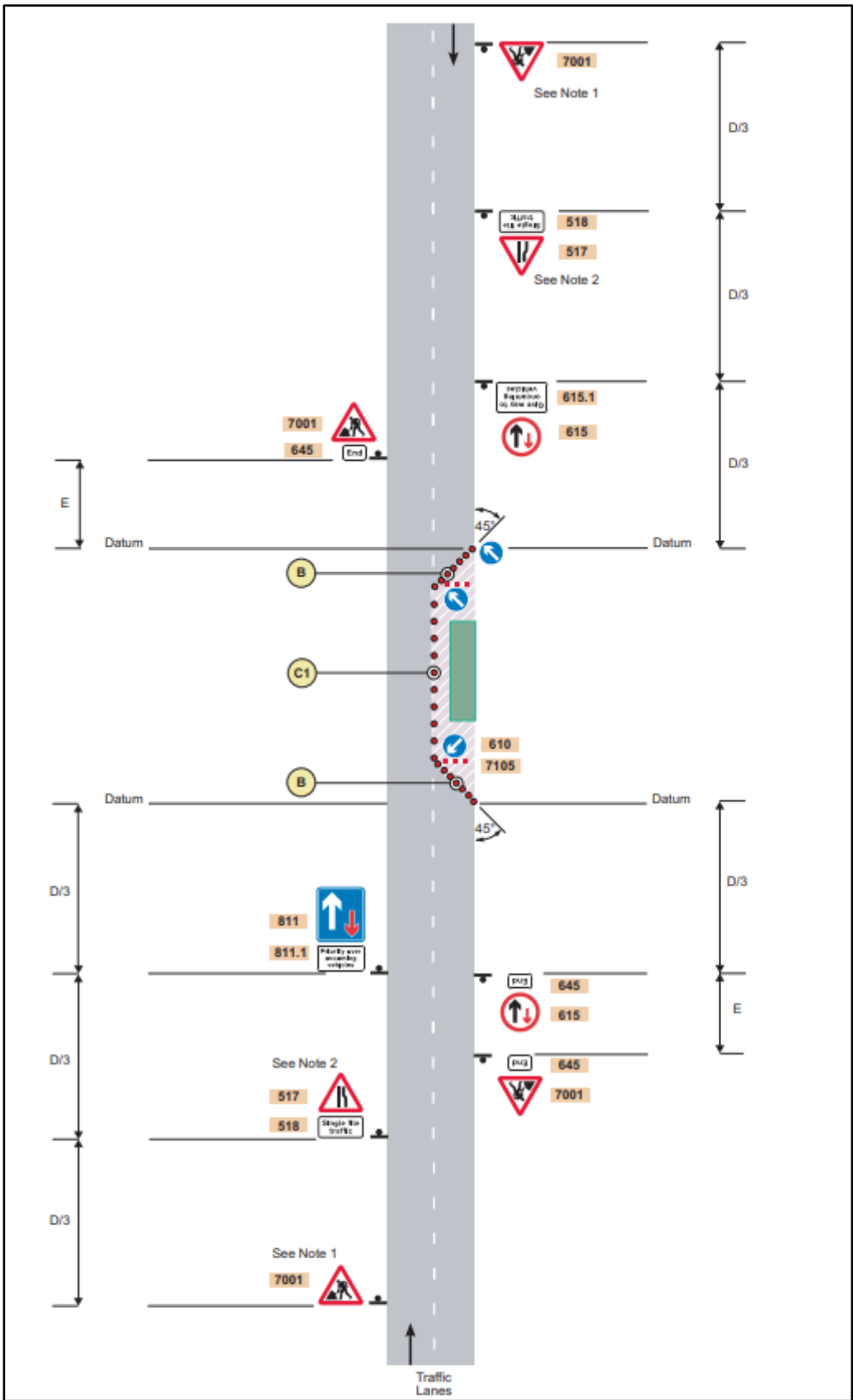


Figure 1.2: Priority signs on a two-lane single carriageway road

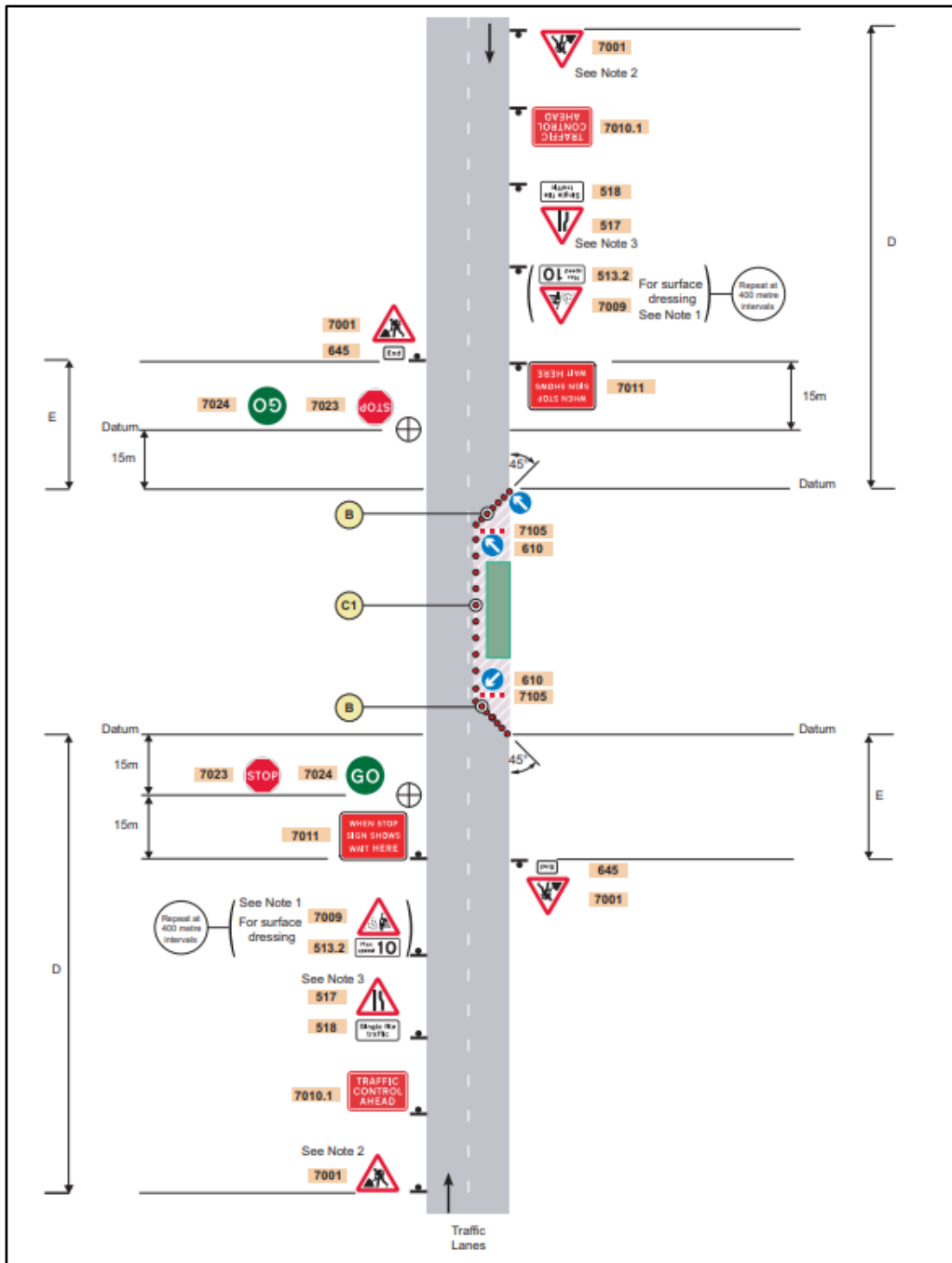


Figure 1.3: STOP / GO signs on a two-lane single carriageway road

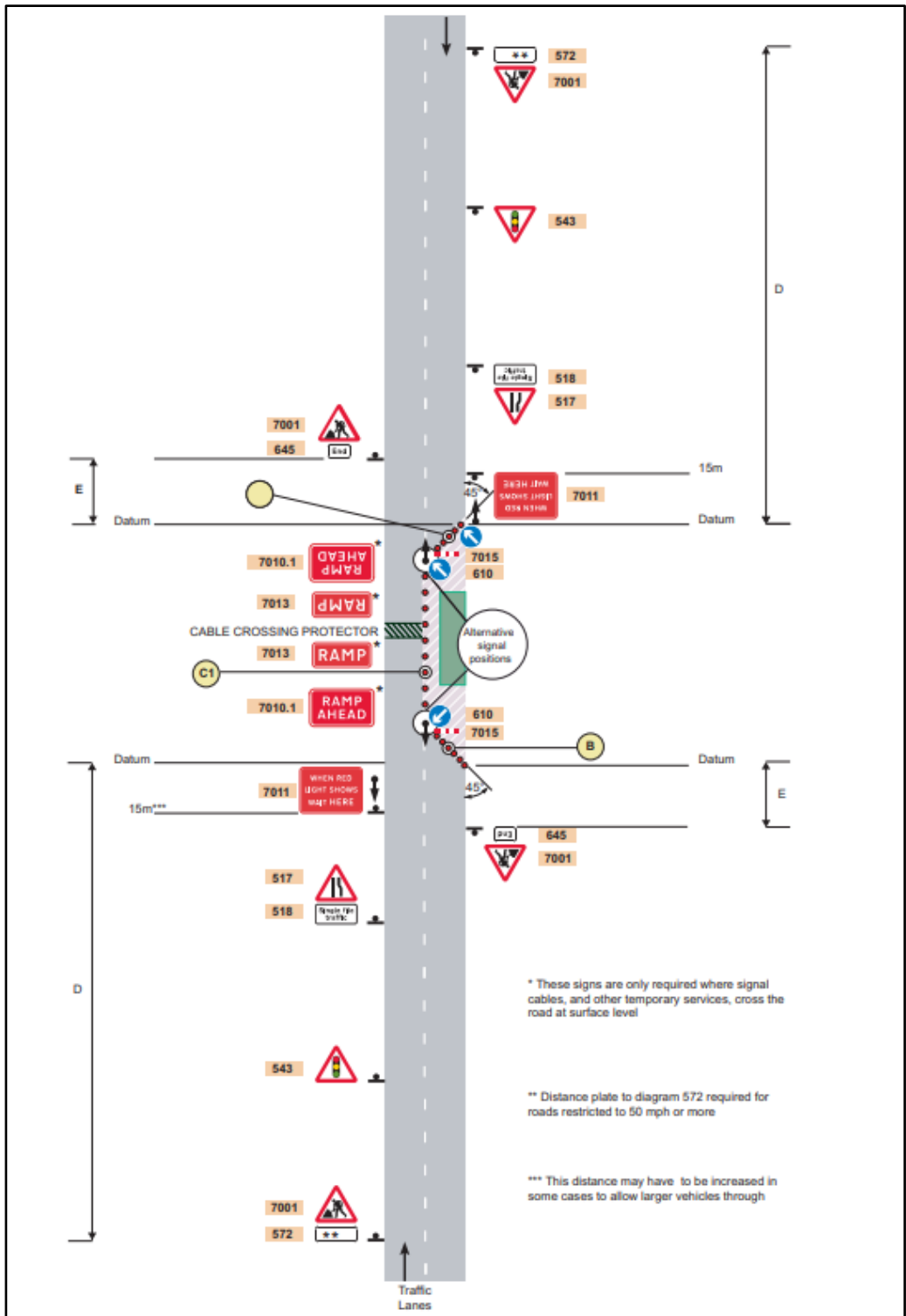


Figure 1.4: Portable traffic signals on a two-lane single carriageway road

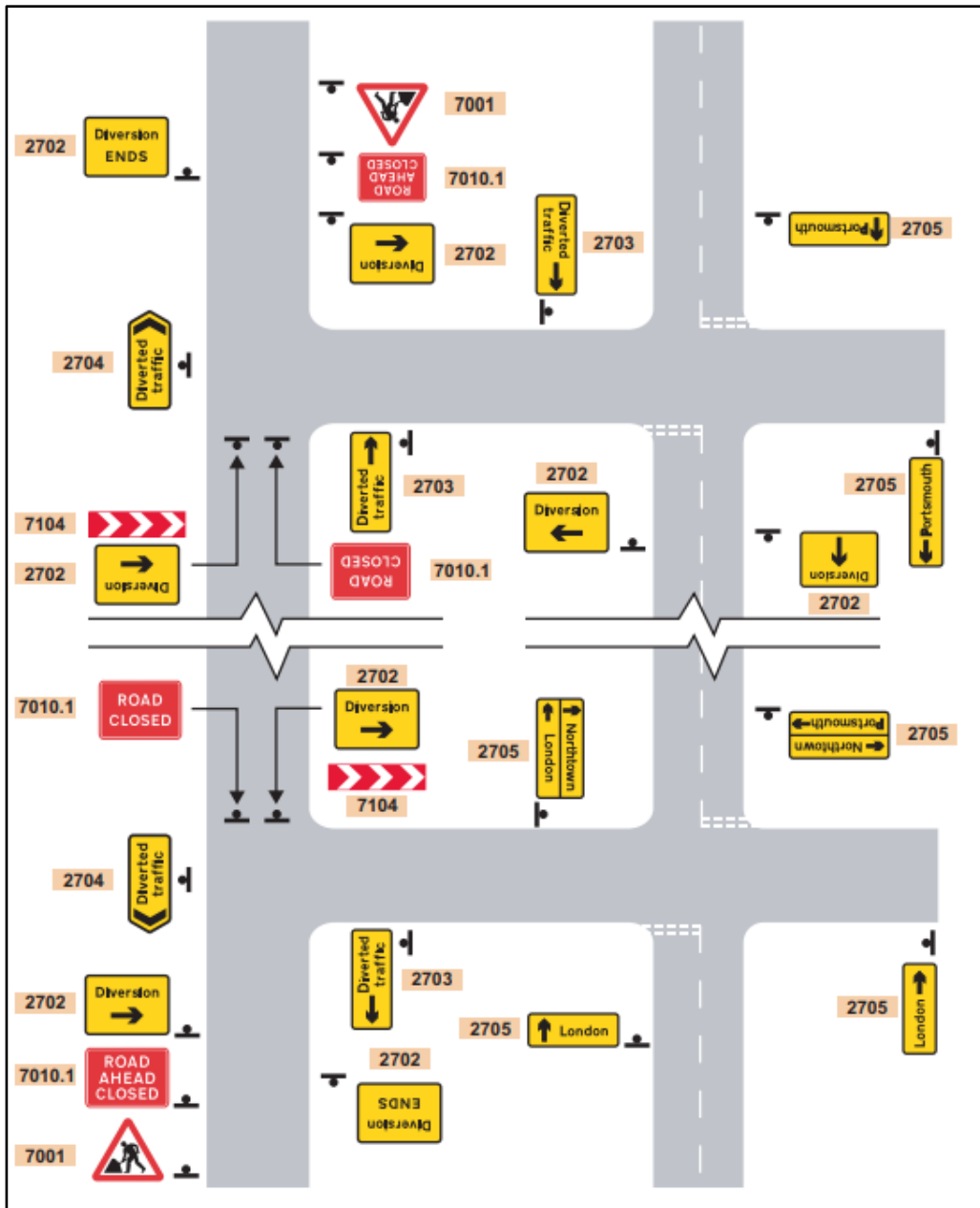


Figure 1.5: Layout of signs for works on single carriageway roads with diversions



Figure 1.6: Manually operated STOP / GO signs and priority signs

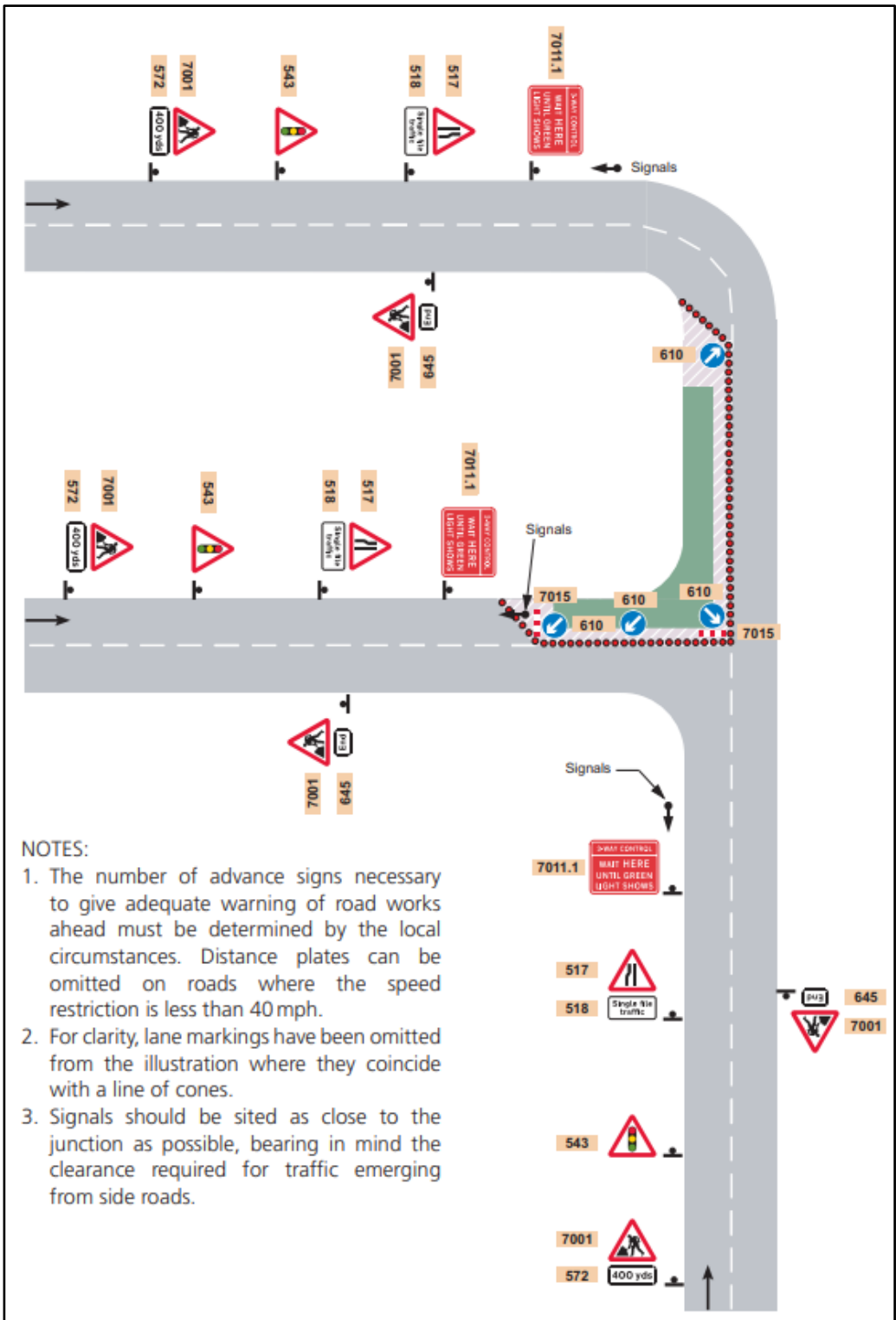


Figure 1.7: Traffic control by means of portable traffic signals at a T-junction

1.9.11 An example layout of portable temporary signals is given in **Figure 1.7**. This layout includes the signage associated with temporary portable signals at a priority junction.

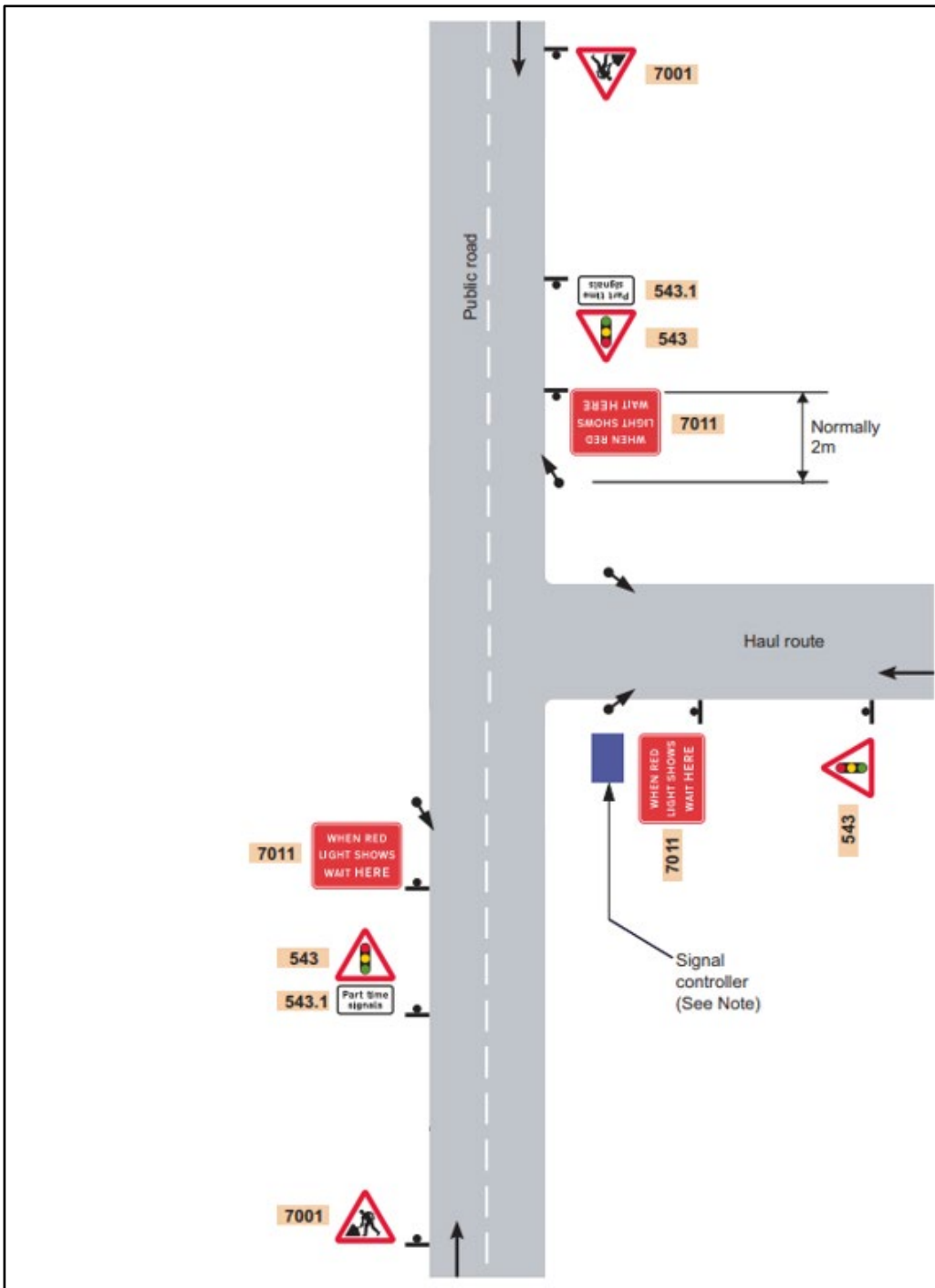


Figure 1.8: Traffic control by means of three-way portable signals at a T-junction

1.10 Highway Crossings

Onshore HVDC Cable Corridor Highway Crossing Locations and Operation

- 1.10.1 It is envisaged that all crossings of the public highway will be undertaken using trenchless techniques. The details of trenchless techniques are set out in Volume 1, Chapter 3: Project Description of the ES (document reference 6.1.3).
- 1.10.2 This method of cable laying means that there is no disturbance (i.e. no shuttle working or road closures) to other users of the public highway, except for material delivery and arrival/departure of construction staff.
- 1.10.3 There will be some locations whereby the haul road crosses the highway and where traffic management will be required or where works are required to expose existing utilities. The traffic management methods to be used will depend on the location of the highway crossing, the nature and level of traffic on the highway link being crossed, what is served by the highway link and the alternative routes available.
- 1.10.4 Indicative priority, STOP / GO and signalled shuttle working arrangements are shown in **Figure 1.2**, **Figure 1.3** and **Figure 1.4**. On lightly trafficked highway links, shuttle working can operate on a priority basis or be managed manually without the need for traffic signals. On busier highway links, it is expected that temporary signals will be used.

Agreement, Management and Advance Notification

- 1.10.5 Where traffic management measures are required, these will be agreed in advance with DCC.
- 1.10.6 Measures will be put in place to ensure that no unauthorised access is gained to the onshore HVDC Cable Corridor from the highway at crossing points and that the adjacent works sites are secure.
- 1.10.7 Any works within the highway will be reinstated to a standard commensurate to prior to the commencement of the works and agreed with DCC.

Haul Road and Crossings with the Highway

- 1.10.8 A haul road will be constructed along the majority of the onshore HVDC Cable Corridor to provide for HGV access to undertake trenching works and install the cables, with gaps only at some trenchless technique locations and road crossings. The haul road will enable vehicles to move along the onshore HVDC Cable Corridor and relieve the need for construction traffic to rely on longer sections of the local highway network during construction.
- 1.10.9 The haul road will operate with a low speed limit to ensure the safety of workforce and plant operatives in the vicinity. Where the haul road crosses existing highway links, traffic management will be used to ensure that safe crossing by highway traffic and haul road vehicles.
- 1.10.10 An example layout is set out in **Figure 1.9** which is taken from the Traffic Signs Manual, Chapter 8, Part 1 – Traffic Safety Measures and Signs for Road Works

and Temporary Situations (Department for Transport / Highways Agency (now National Highways), Department for Regional Development (Northern Ireland) (now Department for Infrastructure (Northern Ireland)), Transport Scotland and Welsh Assembly Government (now Welsh Government), 2009). The precise layout for each will be confirmed by the Principal Contractor(s) based upon the specific requirements of each crossing location.

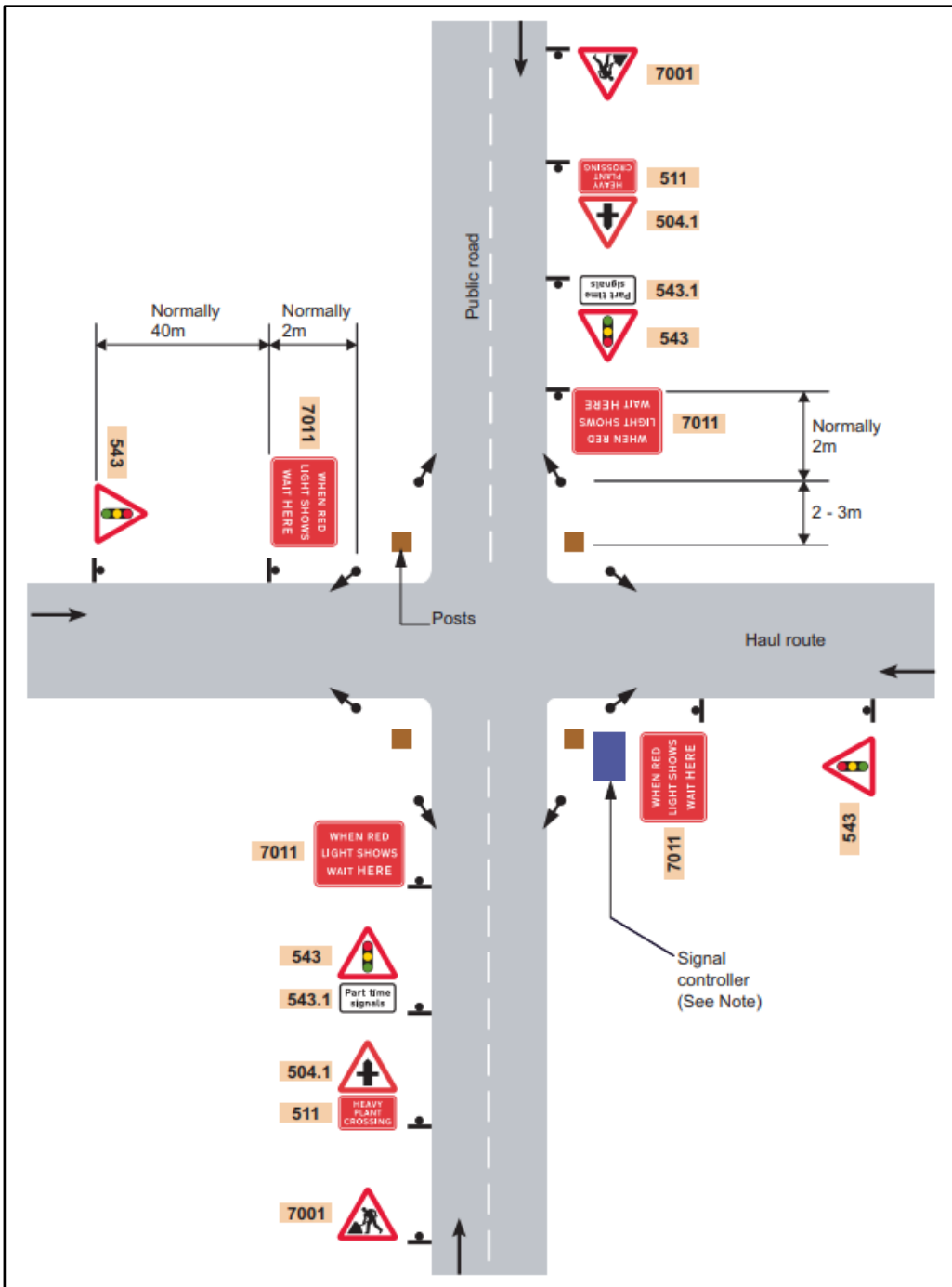


Figure 1.9: Haul Route Crossing

1.11 Management of Highway Safety

Existing Accident Record

- 1.11.1 An analysis of Personal Injury Accident (PIA) data across the local highway network has been undertaken in section 5.7 of Volume 2, Chapter 5: Traffic and Transport of the ES (document reference 6.2.5).
- 1.11.2 PIA data has been obtained from DCC covering the latest available five-year period between 1 January 2019 and 31 December 2023 to consider road safety.
- 1.11.3 The PIA data has been interrogated to identify clusters of injury accidents, which DCC consider to be a site with five or more injury accidents within a 50 m radius over a five-year period. These clusters of injury accidents are set out in **Table 1.3**.

Table 1.3: PIA clusters

Cluster ID	Location	Number of recorded injury accidents
1	A386 / Old Bideford Bridge / Bridge Street mini roundabout junction	6
2	A39 along Torridge Bridge	5
3	A386 through Bideford adjacent to Jubilee Square	5
4	A39 / B3233 junction	5
5	A39 Heywood Roundabout junction	6

- 1.11.4 The analysis of PIA data obtained from DCC covering the latest available five-year period demonstrates no consistent contributory factors to injury accidents.

Monitoring and Mitigation for the Proposed Development

- 1.11.5 HGV injury accidents and near misses associated with the Proposed Development construction vehicles will be monitored to identify whether there are any safety deficiencies in the highway network due to the increased level of HGV traffic associated with the construction of the onshore elements of the Proposed Development. If localised mitigation measures are required, these will be agreed with DCC and incorporated into the final CTMP(s).

Highway Condition

- 1.11.6 A highway condition survey will be undertaken of those local roads where it is considered that the passage of construction HGVs may cause deterioration of the highway. These roads will be agreed with DCC as part of the final CTMP(s). The schedule of highways to be surveyed will be agreed with DCC prior to any construction activities taking place.
- 1.11.7 Once construction activities have ceased in each location, the condition survey of the associated highway links will be repeated to identify any significant changes in highway condition. The results will be discussed with DCC and where it is agreed that damage has resulted from the passage of HGVs associated with construction work, either a financial contribution will be discussed with DCC to cover the cost

of repairing the damage that is agreed to have resulted from vehicle movements associated with the Proposed Development, or the repair will be facilitated by the Applicant.

1.12 Implementation and Monitoring of the CTMP(s)

Implementation of the Final CTMP(s)

- 1.12.1 The final CTMP(s) will be agreed with both TDC and DCC prior to the commencement of works and developed in consultation with the appointed construction contractor teams. All contractors will be required to comply with the measures in the final CTMP(s) as a condition of their contract.

Compliance and Monitoring

- 1.12.2 Compliance with all the monitoring plans, including the final CTMP(s), will be monitored and a responsibility of the Principal Contractor(s). The Principal Contractor(s) will be responsible for ensuring that all contractors are aware of the requirements of the final CTMP(s) and of the monitoring obligations. The Principal Contractor(s) will be appointed before the start of construction of the onshore elements of the Proposed Development and will continue throughout the onshore construction period. The Principal Contractor(s) will be the central point of contact for all monitoring processes during the construction phase and will be responsible for liaising closely with TDC and DCC throughout the construction works.
- 1.12.3 The Principal Contractor(s) will be responsible for implementing a system whereby construction HGVs associated with the Proposed Development are identifiable from other traffic on the highway network and include Global Positioning System (GPS) tracking to enable their routes to be monitored where necessary.
- 1.12.4 Where possible, data will be collected from construction HGVs that are fitted with monitoring devices such as GPS tracking to record their routes, timing and speeds which will be available to aid any compliance investigations.
- 1.12.5 The registration numbers for all construction HGVs accessing compounds will be recorded. The use of data from tracking devices and recording registration numbers will assist with the enforcement of the CTMP(s).
- 1.12.6 Establishing this central point of contact will help to ensure that all works in each location at a given time will be the responsibility of a minimal number of individuals to ensure clarity of responsibility and to facilitate effective communication.
- 1.12.7 Monitoring activities and responsibilities will be agreed with TDC and DCC. The final CTMP(s) will include contact details of those responsible for the final CTMP(s) and a clear schedule of monitoring activities and timescales.

Monitoring Records

- 1.12.8 The final CTMP(s) will be a live document which will be updated when necessary. The Principal Contractor(s) will be responsible for monitoring, with the results of

this monitoring fed back to be included into the final CTMP(s). Any auditing or corrective action will also be monitored. This will ensure that the construction activities are being undertaken in accordance with the CTMP(s).

- 1.12.9 The procedure for addressing breaches and ensuring corrective action is given below.
- A log will be used to record details of any traffic and transport related incident and/or non-compliance with the final CTMP(s).
 - A log will also be used to record any inadequacy as a result of monitoring, inspection, surveillance and compliance.
 - The log will also record any actions taken, any action required will be allocated to the appropriate person, along with a timescale for the action to be undertaken.
- 1.12.10 Records of the above will be retained as the responsibility of the Principal Contractor(s) throughout the entirety of the construction period. These will be maintained either in hard copy or electronically so these can be accessed at any time.

Enforcement and Corrective Measures

- 1.12.11 If the Principal Contractor(s) is made aware of a potential breach of the CTMP(s) (except where otherwise agreed with TDC or DCC, or in the event of an emergency), the Principal Contractor(s) will be required to investigate the circumstances and create a report for DCC. DCC will then review the information, request further clarification (if required) and confirm to the Principal Contractor(s) if a material breach has occurred.
- 1.12.12 If the breach is found to be material, the below three stage process will be followed.
- Stage 1: DCC confirms a breach and requests that the Principal Contractor(s) considers the data and concerns. DCC and the Principal Contractor(s) will then agree the extent of the breach of the final CTMP(s) and agree any action to be taken. This is likely to be a Principal Contractor(s).
 - Stage 2: If a further material breach is identified, the Principal Contractor(s) will be given another warning and will be required to produce a plan to outline how the issue will be rectified and any additional mitigation measures to be implemented.
 - Stage 3: Should further breaches take place the Principal Contractor(s) will be required to remove the relevant party from site and the contractor / supplier will receive a formal warning. Any continued breaches by individuals of the contractor / supplier may be treated with formal dispute procedures of the contract.

1.13 References

Chapter 8, Part 1 – Traffic Safety Measures and Signs for Road Works and Temporary Situations (Department for Transport / Highways Agency (now National Highways), Department for Regional Development (Northern Ireland) (now Department for Infrastructure (Northern Ireland)), Transport Scotland and Welsh Assembly Government (now Welsh Government), 2009.