Kronospan 132kV Cable Installation

Highways Technical Note 01 v1

Installation of two 132kV circuits and two fibre cables between the existing Scottish Power Energy Networks (SPEN) Legacy to Oswestry 132kV wood pole overhead line and the Kronospan 132kV substation

Prepared for: Kronospan Limited

29 January 2026

5185-HTN01

1.0 INTRODUCTION

1.1 Purpose of this Report

1.1.1 Axis have been appointed by Kronospan Limited ('the Applicant') to provide highways and transport advice in relation to the planning application for installation of two 132kV circuits and two fibre cables between the existing legacy to Oswestry, 132kV wood pole overhead line and the consented Kronospan 132kV substation, (hereafter referred to as 'the Proposed Development'), located on land to the East of Kronospan Ltd, Holyhead Road, Chirk, Wrexham. LL14 5NT ('the Site').

1.1.2 The purpose of this Highways Technical Note (HTN) is to inform Wrexham County Borough Council (WCBC), which is the relevant Local Planning Authority (LPA) and Local Highway Authority (LHA), of the anticipated highways and transport-related matters associated with the Proposed Development.

1.2 Project Background

1.2.1 Kronospan manufactures and distributes wood-based panels at the Kronospan Facility, Holyhead Road, Chirk, and is a leading manufacturer of products including Particleboard (PB), Medium Density Fibreboard (MDF), laminate flooring, and orientated strand board (OSB).

1.2.2 A number future developments are proposed at Kronospan, to ensure the Chirk manufacturing site remains world leading in terms of production.

1.3 Planning History

1.3.1 Planning permission has been granted for the following developments which are either recently completed, under construction, or planned to be constructed in the near future:

i) An oriented strand board (OSB) Facility (granted 14 August 2019 under appeal reference APP/H6955/A/19/3227571) at the western extent of the existing Kronospan Facility; the OSB Facility is currently under construction.

ii) A new warehouse building (granted 13 April 2022 under planning reference P/2021/0725) in the north-east part of the existing Kronospan Facility, which will deliver 15,029 sq. of floorspace (GEA). This planning permission also includes a new sprinkler tank between the northern extent of *Kronoplus* and the existing Kronospan Facility's northern boundary.

iii) An extension to the existing main warehouse building to create a covered loading yard and storage area to facilitate site operations (granted 04 July 2022 under planning reference P/2022/0336).

iv) The erection of a new building to form engineering stores, a dedicated apprentice workshop, an access track around the new structure and ancillary works (granted 07 November 2022 under planning reference P/2022/0615).

v) The erection of two raw material silos, extension to the existing chip preparation building, and the erection of three silos and associated works (granted 09 January 2023 under planning reference P/2022/0765).

vi) A proposed new access road (hereafter referred to as the 'North Access Road'), lorry park, weighbridge, 132kV substation and associated infrastructure on land immediately north of the existing Kronospan Facility planning reference P/2022/1080).

1.4 Scoping / Liaison

1.4.1 Preliminary discussions have been held with WCBC Highways regarding the principle of the Proposed Development. Based on those preliminary discussions, there was no objection in principle to the identified cable routes adopting a predominantly highway installation.

1.4.2 A request for formal pre-application advice (dated 09 May 2025) was submitted to WCBC to establish:

i) The principle of the Proposed Development;
ii) The suitability of the cable routes identified;
iii) The scope of the highway analysis;
iv) Any notable local issues that should be considered; and
v) Any other issues or concerns regarding the Proposed Development.

1.4.3 WCBC provided its pre-application advice on 15th September 2025, a copy of this is included within Appendix A of the Planning Statement. A summary of this advice in relation to highways considerations is provided below:

1.4.4 The Council's Highways Authority have responded indicating that the production of a Highways Technical Note (HTN) would be suitable to accompany the planning application; an outline of the proposed scope as indicated in detail in support of your request is considered acceptable which indicated:

i) Preparation - Review the proposed cable routes using Google maps. Undertake a virtual drive along the routes, to make notes and observations regarding its feasibility, with due regard to width of carriageway, surface evidence of existing underground utilities, and the potential need to impose traffic management measures/diversions.

Review the proposed cable routes in the context of both the adopted highway boundary extents, which are obtainable at cost from WCBC website, and the land registry map search.

ii) HTN Document - Present an introduction to include purpose of the report and context of the Proposed Development.

Set out the existing conditions to include site location, highway network and road safety.

Present the planning history and context of the Proposed Development.

Describe the Proposed Development, to include an overview, details of the route, typical trench excavation and construction process, construction traffic generation and vehicle types and construction traffic routing, and likely traffic management measures.

1.4.5 Additional HTN Details Required

i) Any proposed HTN will need to provide details on the proposed size, length of construction vehicles that will be utilized for the works along with swept path details of such vehicles accessing the various sections of highway including proposed routes vehicles will take where there are issues with narrow carriageways, lack of passing places, poor visibility, condition of carriageway.

ii) Details of proposed daily vehicle movements of construction vehicles anticipated for the works along with any mitigation measures that are proposed where the above issues have been identified.

iii) Details / plans of visibility splays at any existing / proposed junctions along the routes will need to be provided along with the prevailing speed limits for those sections.

iv) Details of where any construction vehicles associated with the works will park e.g. if additional areas of land are required for parking of construction vehicles then plans indicating access details, visibility splays, parking spaces and turning facilities will need to be provided for the number & size of the anticipated vehicles.

v) Condition Survey The LHA recommends that the applicant contacts the Council's Contracts & Engineering Manager & Traffic Team Leader to discuss / agree whether a condition survey of sections of the existing highway (before works commence / upon completion) will be needed requiring the applicant to fund any repairs / damage to the highway infrastructure that may occur as a result of the works.

vi) Traffic Management Measures The LHA recommend that the applicant liaises with the WCBC Traffic Team Leader - Jamie Edge (contact: jamie.edge@wrexham.gov.uk) to discuss / agree any specific traffic management measures that will be required along with any specific consents eg/ Section 50 consents, potential road closures, Chapter Signing & Guarding.

vii) Construction Traffic Management Plan (CTMP) If an application for the development is supported, the LHA recommend any permission includes a condition for the submission of a Construction Traffic Management Plan including provisions for contractor parking for approval prior to commencement. The LHA also recommend that the applicant liaises with the WCBC Traffic Team Leader - Jamie Edge (contact: jamie.edge@wrexham.gov.uk) to discuss / agree any specific details that will need to be included in a CTMP.

1.4.6 The site is also in part located close to a public highway which is in the control of the Welsh Government being part of the national highway network, you are advised to contact them to inquire whether there are any issues in relation to the proposal and impacts in relation to the national highway network.

1.5 The Proposal

1.5.1 The proposal is for the installation of two 132kV circuits and two fibre cables between the existing SPEN Legacy to Oswestry 132kV wood pole overhead line and the Kronospan 132kV substation (the latter approved under planning permission P/2022/1080).

1.5.2 In summary this application seeks to provide the electrical connection to enable the operation of the consented 132kV substation.

1.6 Report Structure

1.6.1 The remainder of this HTN is structured as follows:

i) **Chapter 2** describes the existing conditions on and around the Site, including the Site location, the local highway network (including Public Rights of Way (PROW), and a review of the accident data on the local highway network;
ii) **Chapter 3** describes the Proposed Development including, highway or open field installation, cable routes, special engineering difficulties, cable installation methods (including open trenching and horizontal directional drilling methods), details the rig up compound areas;
iii) **Chapter 4** presents the construction traffic generation and proposed vehicle types, to include construction operational hours, number, size and length of

construction vehicles, construction traffic routing (including swept path analysis and visibility splays at existing and proposed junctions along the route);

iv) **Chapter 5** discusses the proposed mitigation and traffic management measures; and

v) **Chapter 6** summarises and concludes the report.

2.0 EXISTING CONDITIONS

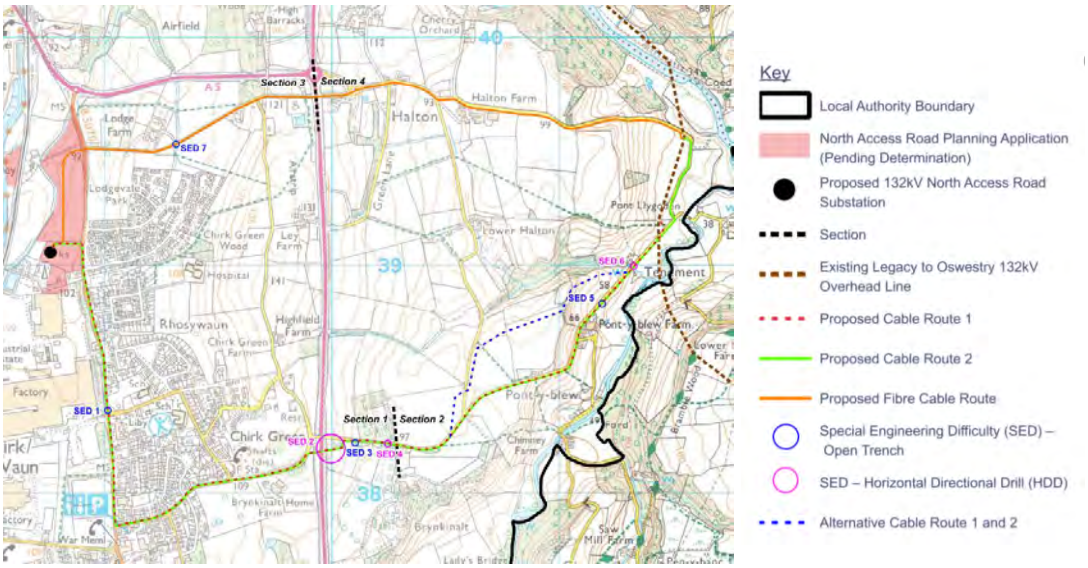
2.1 Introduction

2.1.1 This section of the HTN describes the existing conditions on and around the Site, focussing on the Site location, its existing use, access arrangements and the local highway network, including its accident record.

2.2 Site Location

2.2.1 **Image 2.1** presents the location of the site in the context of the local highway network.

Image 2.1 – Site Location



2.3 Wider Site Context

2.3.1 Chirk is a small town off the A5 and just north of the England-Wales border (within Wales). The residential areas of the town mostly lie east of the B5070, with the existing Kronospan Facility to the west of this road. On the western side of the B5070, to the south-east of the existing Kronospan Facility is an area of greenspace comprising a private sports club (immediately south of the Kronospan car park) and Chirk Recreation Ground.

2.3.2 Chirk town centre lies south-east of the existing Kronospan Facility and includes various commercial and community buildings and areas of public open space.

2.3.3 The eastern perimeter of the existing Kronospan Facility is formed by Holyhead Road (B5070). An earth bund, planted with trees, has been developed along the eastern perimeter of the facility to reduce the visibility of Kronospan operations from neighbouring properties on Holyhead Road (B5070).

2.3.4 The A5 corridor runs north-south in what is almost a straight line along the eastern edge of a ridge approximately 1km east of the existing Kronospan Facility. The existing Legacy to Oswestry 132kV overhead line is further east, approximately 1.6km from the A5, and approximately 2.7km from the consented Kronospan 132kV substation.

2.4 Local Highway Network

Holyhead Road / Church Street (B5070)

2.4.1 Holyhead Road is a two-way single carriageway road that runs in a north-south alignment along the eastern boundary of both the existing facility and the application site. The road provides a strategic route between the A5 in the north and the B4500 in the south. Beyond the site the B5070 becomes Chirk Road and joins the A5 Chirk Bypass to the south at the Gledrid Roundabout.

2.4.2 In the vicinity of the Site, Holyhead Road features a circa 7.0m carriageway, and is subject to a 50mph speed-limit, rising to the national speed limit on the approach to the A5 roundabout. The speed limit is reduced to 30mph just prior to the point where it meets Crogen.

2.4.3 Residential properties line the majority of the eastern side of Holyhead Road. There are footways of approximately 2.0m in width positioned on both sides of the carriageway and street lighting columns are present at regular intervals on both sides of the road. There are on-street cycle lanes marked out on both sides of the road. A bus stop is situated approximately 25m to the north of the existing site entrance, which provides both a shelter and timetable information.

Strategic Highway Network A5 & A483

2.4.4 Both the A5 and A483 constitute part of the Strategic Road Network (SRN) in North Wales as managed by the North and Mid-Wales Trunk Road Authority (NMWTRA) on behalf of the Welsh Government (WG).

2.4.5 The A5 links Llangollen in the west to the M54 (and ultimately the M6) in the West Midlands via Shrewsbury. The route converges with the A483 at Halton Roundabout, before then diverging in a southeast direction at Mile End Roundabout, Oswestry. The A483 constitutes a north – south strategic link between Chester and the western termination of the M4 at Llanelli. Halton Roundabout (A5 / A483) has undergone several recent upgrades by NMWTRA and is subject to a programme of continual review and upgrade where required. The Halton Roundabout is currently characterised by two lanes at each approach. Street lighting is present at regular intervals around the roundabout.

2.4.6 The A5 then joins the B5070 Holyhead Road via a priority compact roundabout. At this location the A5 forms a two-way strategic route. Lighting columns are present at regular intervals on either side of the road. The A5 is subject to the national speed limit at this location.

2.4.7 The combined A5 / A483 form part of the Trans-European Network (TEN) between Holyhead and Felixstowe, facilitating wider freight movement by road from Ireland to the Benelux countries via the UK strategic highway network. The A483 is also defined as 'Core' to the Strategic Network in North Wales by the NMWTRA. Both routes can be defined predominantly as Single 2 (S2) in the vicinity of the site, encompassing a one metre hard strip; however, there are short sections of 2+1 alignment on the A483. Principal junctions are predominantly accessed via roundabouts with no minor road access to the A483 or the Chirk Bypass sections of the A5.

Old Black Park Road

2.4.8 Old Black Park Road is a tertiary road running between the B5070 adjacent to the access to the Afon Bradley Farm and the Chirk Retail Park roundabout. The road is rural in nature, has no footway provision and is unlit. The carriageway is approximately 4.25 m in width, increasing to approximately 4.75m further to the east.

Colt Lane

2.4.9 Colt Lane is located to the east of Chirk Retail Park roundabout. It extends from the junction with Forge Road in the west to Pont Y Blew in the east, is a single-track route and is not lit. The route passes through I G Evans & Son Farm and Campsite, where the carriageway measures approximately 5.8m in width. Further east, the carriageway narrows to less than 3m. Beyond the farm, the route transitions into a muddy track, flanked by hedgerows on both sides.

Pont Y Blew

2.4.10 Pont Y Blew runs in a north-east to south-west direction between the intersection with Colt Lane in the north-east and Park Lane in the south-west. In the north-east it is an un-lit, single-track route of approximately 3.5 m width flanked by verge and hedgerow on both sides. There are no passing bays along this route. Where passing takes place, it appears to occur informally on the verge or within field gateways.

2.4.11 At Forge Farm, the route intersects with Rhyn Lane at a priority junction. Beyond this point, it continues as a 4.5m wide single-track lane. The route remains unlit and is bordered by verges and hedgerows on both sides. The northern verge features overhead cables supported by telegraph poles at regular intervals.

2.4.12 Informal passing bays are located at regular intervals along the route. About 633 m to the south-west, the route meets Forge Road at a priority junction. Approximately 740m further on, after passing the Brynkinalt Estate, the route crosses the A5 Chirk Bypass. At the A5 bridge, the carriageway widens to around 5 m, and the verges within the highway's boundary become broader on both sides. The width of the carriageway along the A5 overbridge is 5.5m.

2.4.13 After crossing the overbridge, the route joins Colliery Road at a priority T-junction. At this point, the cable route turns, heading south-west along Colliery Road. The carriageway here is approximately 5.5 m wide, which is sufficient for two large vehicles to pass, although no carriageway markings are present. There are no footways or street lighting along either side of the road.

2.4.14 After approximately 435 m, Colliery Road enters a residential area where the speed limit reduces to 20 mph. At this point, the carriageway widens to around 5.75m and footways are introduced along the northern side. Street lighting is also provided at regular intervals. After a further 550 m, the route meets the B5070 (Church Street).

2.4.15 The cable route then continues north along Church Street / Holyhead Road.

2.5 Public Rights of Way (PROW)

2.5.1 As short section of Public Right of Way (PROW) run along carriageway where proposed cable route is to be installed. However, several PROWS intersect the route These include the following footpaths:

i) CHI / 7 – This footpath links Green Lane (to the west) with Forge Road and the north-eastern section of Pont Y Blew (to the east). The route crosses these carriageways but predominantly runs through adjoining fields. It is marked by green public footpath signs and stile-type crossings.

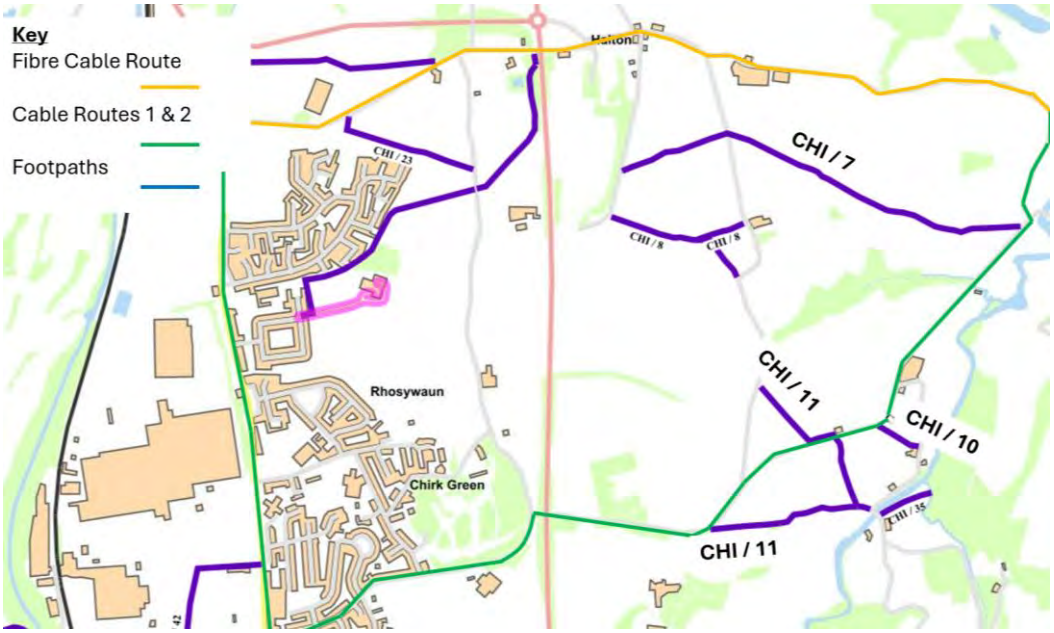
ii) CHI / 10 – Footpath CHI / 10 begins at the north-eastern end of Pont Y Blew and extends south-eastwards across open fields towards Pen-Y-bryn.

iii) CHI / 11 – Footpath CHI / 11 commences from Rhyn Lane, near Chimney Farm and close to the bridge over the River Ceiriog. A flag and pole sign and stile mark the start of the route, which continues across open fields. Within the fields, the path splits into two branches, north and west, both leading towards Pont Y Blew. The northern branch meets Pont Y Blew, follows it for approximately 90m, and then continues north across further open fields.

2.5.2 Although the PROW only intersect the carriageway where the proposed cable route is to be installed for a distance of approximately 90m, it is likely that the users of the nearby footpaths identified above will continue the onward journeys along these routes.

2.5.3 The locations of the PROW are illustrated further within the following image:

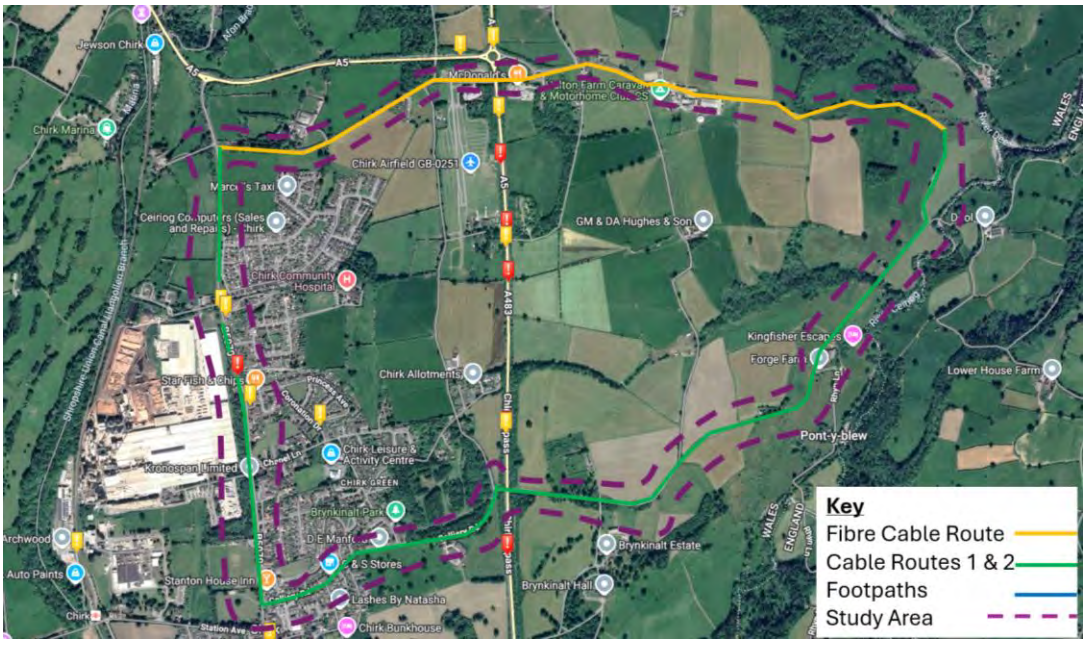
Image 2.2 – PROW Routes



2.6 Highway Safety

2.6.1 Personal Injury Accident (PIA) data for the highway network along the route has been obtained from the freely available Crashmap site. Data has been extracted for the most recently available complete 5-year period, which is 2020-2024 inclusive.

Image 2.3 – Personal Injury Accident Map Extract (2020-2024 Inclusive)



2.6.2 Review of **Image 2.** demonstrates that a total of 4 incidents have been recorded within the study area between 2020 and 2024 (inclusive). Of these:

i) 3 'slight' severity accidents were recorded;
ii) 1 'serious' severity accidents were recorded; and
iii) 0 were recorded as fatal.

2.6.3 All recorded incidents took place along the B5070 Holyhead Road These incidents were isolated rather than clustered, and no additional incidents were reported along the remainder of the proposed cable route.

2.6.4 The accident record does not show any significant concentration of incidents or atypical patterns relative to the wider highway network. Therefore, road safety is not considered a material concern in relation to the Proposed Development.

3.0 PROPOSED DEVELOPMENT

3.1 Overview

3.1.1 The Proposed Development is the installation of two 132kV circuits and two fibre cables between the existing legacy to Oswestry, 132kV wood pole overhead line and the consented Kronospan 132kV substation.

3.1.2 The proposed cables would be installed via open trench, unless otherwise stated (see 'Special Engineering Difficulties' below).

3.1.3 The two 132kV circuits require a separation distance of 450mm, which is a separation distance of 650mm between the centre point of each cable duct. The two fibre ducts require a separation distance of 5m to adhere to Scottish Power Energy Networks (SPEN) requirements.

3.2 Highway or Open Field Installation

3.2.1 Although cable installation in open fields is typically more beneficial than highway installation with respect to impacts on local traffic management and community access/local amenity, such installation typically has greater effects on the wider environment, including impacts on biodiversity (habitat, trees and hedgerow), the historic environment (below ground archaeology), the water environment (drainage ditch and watercourse crossings), and agricultural land.

3.2.2 Cable installation in the existing highway is typically more cost effective than open fields as the latter would require the construction of temporary haul roads to accommodate construction vehicles, greater environmental management, and more extensive restoration.

3.2.3 Subsequently, cable installation in the existing highway (wherever practicable) was selected by Kronospan as the preferred approach. The majority of the cable installation will therefore take place in the existing highway. Kronospan has provisionally discussed the feasibility of the identified cable routes with WCBC and undertaken further correspondence with WCBC via the pre-application advice process (see Section 1.4 earlier for further details).

3.3 Cable Routes

3.3.1 Three core cable routes have been identified by Kronospan as the most viable highway routes which would enable the separation distances described above to be implemented; these cable routes are summarised as follows:

i) (Orange) Fibre Cable Route (approximately 3.3km long) – one fibre cable.
ii) (Red) Cable Route 1 (approximately 4.4km long) – 132kV single circuit cables and one fibre cable.
iii) (Green) Cable Route 2 (approximately 4.8km long) – 132kV single circuit cables.

3.3.2 Apart from the immediate approach to make separate connections to the existing Legacy to Oswestry 132kV overhead line, both the Red and Green Cable Routes (Cable Routes 1 and 2) would be in the same cable trench predominately installed beneath the road/track at the southern extent of the Study Area.

3.3.3 The Orange Fibre Cable Route would be in a separate trench predominately installed beneath the road/track at the northern extent of the Study Area.

3.3.4 The fibre cable (to be installed in (Red) Cable Route 1 and the (Orange) Fibre Cable Route are required to ensure the 132kV cables can be monitored (to ensure the protection of system conditions and enable periodic testing).

3.3.5 The proposed cable routes are shown on the **Planning Application Drawings Route** (Route Planning – Key Plan Drawing (EDES-1249-101-002A-P01) and (Route Planning (EDES-1249-101-002-P01-Sheets 1-19).

3.4 Special Engineering Difficulties

3.4.1 Several areas of constraint (Special Engineering Difficulty (SED)) have been identified and associated mitigation, summarised below:

i) SED 1 (Gas main on the B5070)
   a) The tracing of service and trial holes has been undertaken; Wales and West Utilities to be contacted prior to the commencement of excavation.
ii) SED 2 (Chirk Bypass)

a) Installation using Horizontal Directional Drilling (HDD) as an alternative to open trenching has been confirmed as viable and is the intended installation method.

iii) SED 3 (Gas main on Pont y Blew)

a) The tracing of service and trial holes has been undertaken; Wales and West Utilities to be contacted prior to the commencement of excavation.

iv) SED 4 (Tunnel on Brynkinalt Estate)

a) The tunnel is the former pathway from Brynkinalt Hall through to the Walled Garden on the north side of the road; the tunnel is not listed but is considered by WCBC to be a curtilage listed structure to the Grade II* listed Brynkinalt Hall. Any works that impact the tunnel would likely require Listed Building Consent.

b) Installation using HDD as an alternative to open trenching has been confirmed as viable and is the intended installation method.

v) SED 5 (Gas main on Pont y Blew)

a) The tracing of service and trial holes has been undertaken; Wales and West Utilities to be contacted prior to the commencement of excavation.

vi) SED 6 (Culvert on Pont y Blew)

a) Installation using HDD as an alternative to open trenching has been confirmed as viable and is the intended installation method.

vii) SED 7 (Culvert on Old Black Park Road)

a) Trial holes have been undertaken to ascertain if there is sufficient depth for trenched installation. Kronospan has confirmed that there is sufficient depth at this location and trenched installation is the assumed installation method.

3.5 Cable Installation – Open Trenching

Typical Open Trench Configuration

3.5.1 The trench configuration for Cable Routes 1 and 2 would vary depending on the cables to be installed. Typical configurations are summarised in **Table 3.1** below and illustrated as indicative cross sections on the corresponding images.

Table 3.1 - Typical Open Trench Configurations

Typical Configuration	Cable Route(s)	Approx. Depth (m)*	Approx. Width (m)
Configuration 1 - 132kV double circuit and fibre cables See Image 3.1	Majority of (Red) Cable Route 1 and (Green) Cable Route 2 where they share the same alignment	1.2m	1.2m
Configuration 2 - 132kV single circuit cables and fibre cable See Image 3.2	Minority of (Red) Cable Route 1 where it deviates away from (Green) Cable Route 2 on the immediate approaches to the proposed Kronospan 132kV substation and the existing Legacy to Oswestry 132kV overhead line	1.2m	0.55m
Configuration 3 - 132kV single circuit cables See Image 3.3	Minority of (Green) Cable Route 2 where it deviates away from (Red) Cable Route 1 on the immediate approaches to the proposed Kronospan 132kV substation and the existing Legacy to Oswestry 132kV overhead line	1.2m	0.55m
Configuration 4 - Fibre cable See Image 3.4	Entirety of (Orange) Fibre Cable Route	1m	0.26m

* Depth of cover required would vary depending on surface type/nature of surface constraints

Image 3.1 – Typical Open Trench Configuration 1

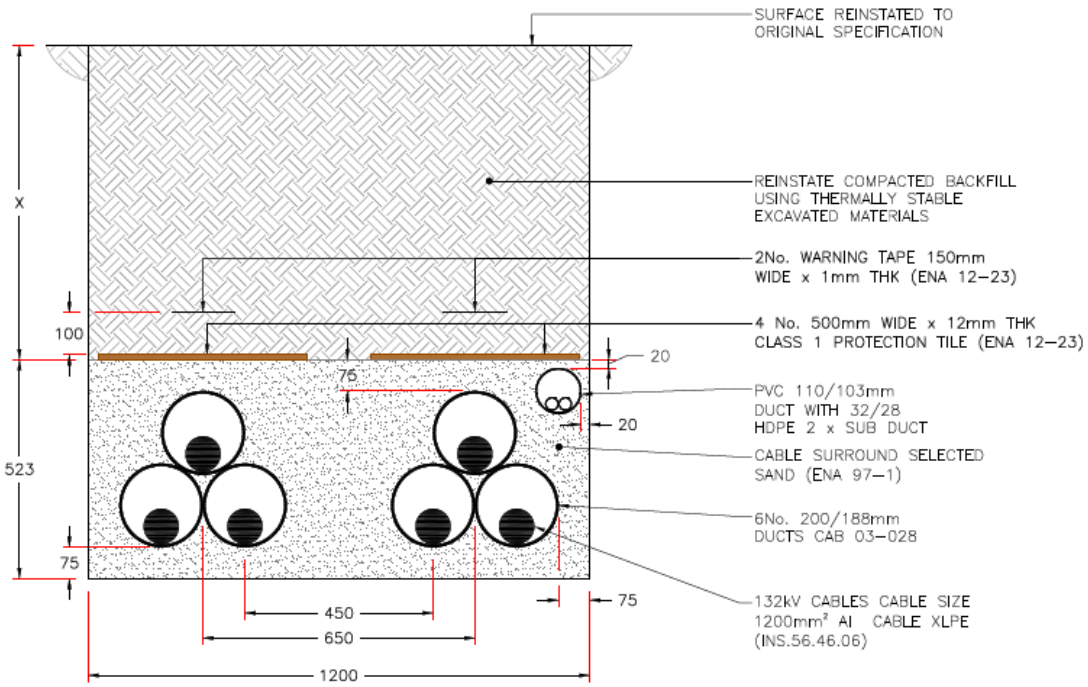


Image 3.2 – Typical Open Trench Configuration 2

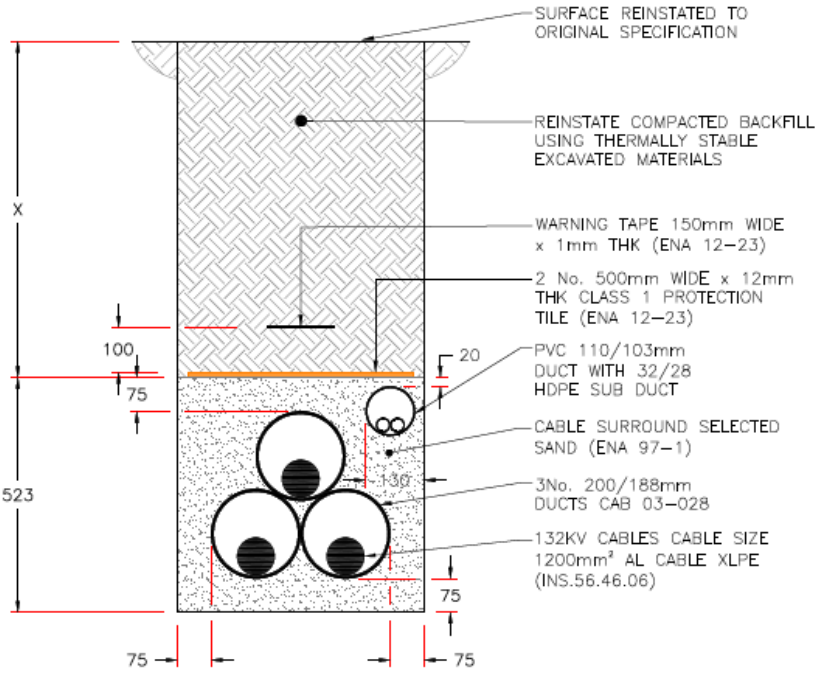


Image 3.3 – Typical Open Trench Configuration 3

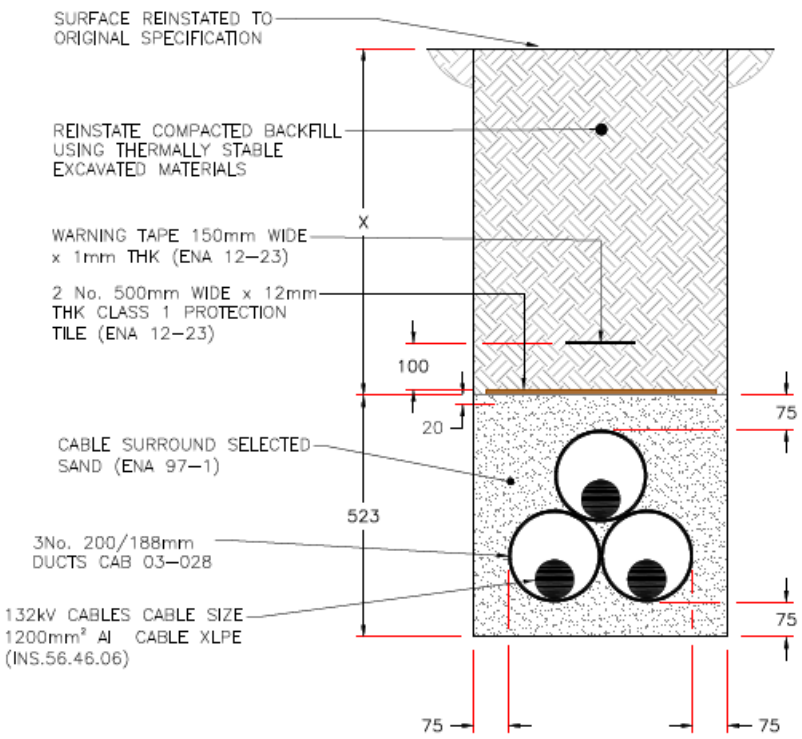
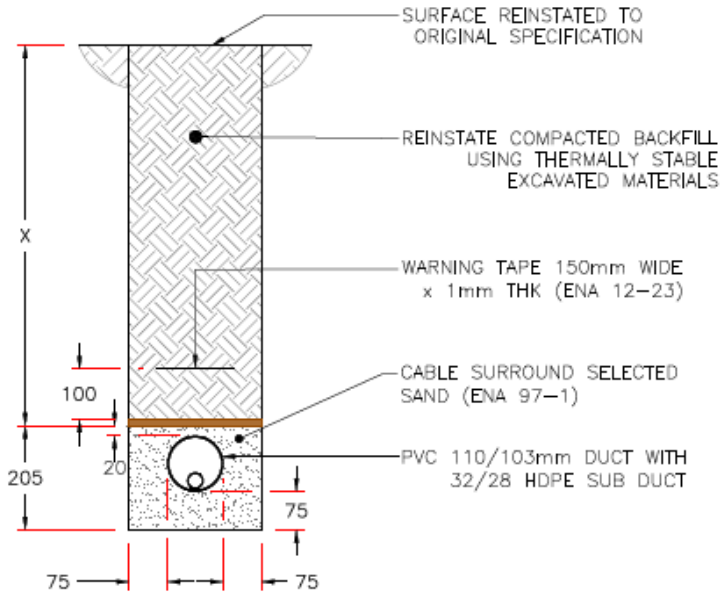


Image 3.4 – Typical Open Trench Configuration 4



Key Activities

3.5.2 HDD would be the installation method at SED 2, SED 4, and SED 6; the remainder of the cable routes would be installed by open trenching (also known as open-cut excavation).

Stage 1

3.5.3 The cable trenches would be excavated, as a rolling work area over an approximate 27-week timescale, in short 30-50m sections as follows:

i) Excavate.
ii) Install ducting.
iii) Backfill.
iv) Reinstate.

Stage 2

3.5.4 Upon completion of the above, the following activities would be undertaken as a rolling work area over an approximate 9-week timescale:

i) Joint bays would be constructed.
ii) Cables would be pulled through the ducts between each joint bay.
iii) Cables would be jointed together at each joint bay.
iv) Joint bays would be backfilled and reinstated.

Overview of Installation

Stage 1

Excavate

3.5.5 The underground cable trenches would be excavated to the required depth and width; timber panels (or similar) would be used to reinforce the trench sides. Trenches would be excavated in sections; each section would be approximately 30-50m long but would be dependent on the nature of the surrounding environment (e.g. presence of natural features, man-made features, sharp 90 degree turns in the routeing, SED areas necessitating HDD installation).

3.5.6 **Image 3.5** below provides an indicative illustration of the working area during excavation in a two-way carriageway. The minimum width required for this arrangement is 6m. Sections of carriageway less than 6m will need to be supported by traffic managements measures – this is discussed in greater detail within section 4.6 following.

3.5.7 **Image 3.6** below provides an indicative illustration of the working area during excavation in a single lane carriageway. The largest trench size (132kV double circuit and fibre cables) from the possible configurations set out in **Table 3.1** are included in both **Image 3.5** and **Image 3.6**.

Image 3.5 – Indicative Cross Section (Excavation in Two-Way Carriageway)

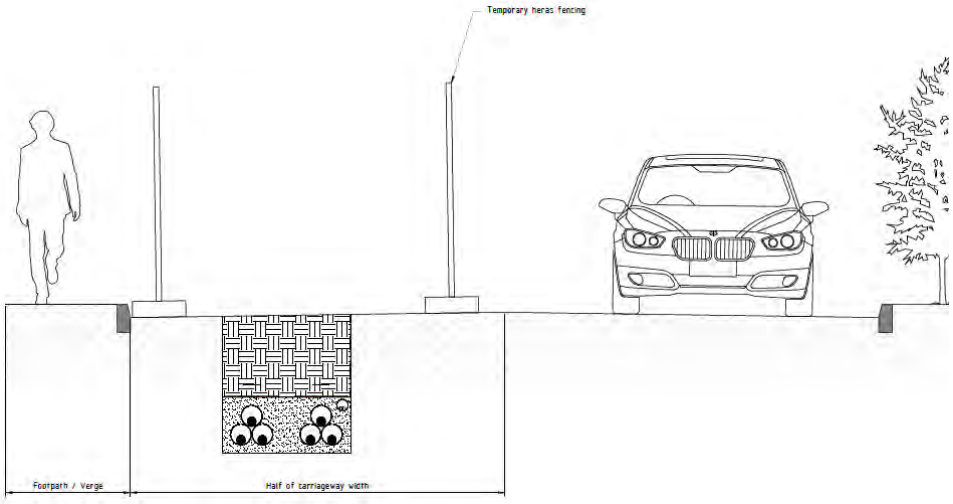
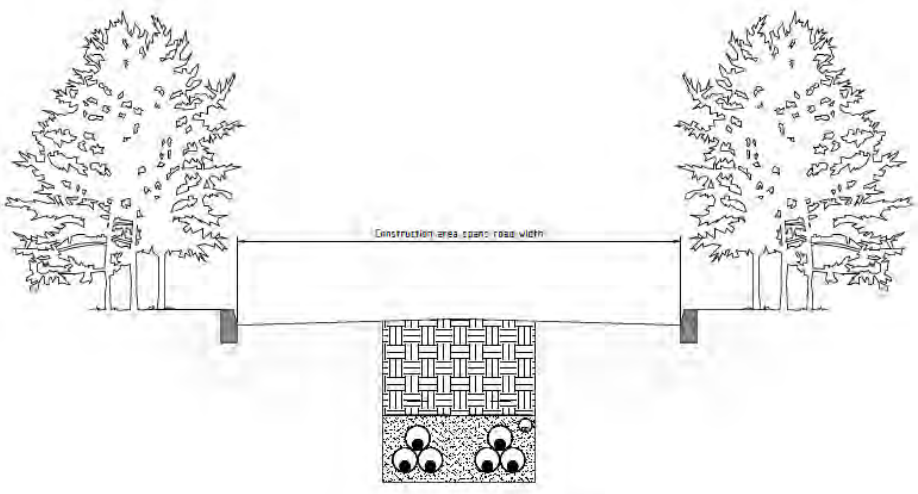


Image 3.6 – Indicative Cross Section (Excavation in Single Lane Carriageway)



Install Ducting

3.5.8 Once excavated, the trench would be inspected to ensure it is free from stones or other extraneous material and bound with a 75mm layer of appropriate surround material (typically cement bound sand (CBS) or selected sand). Cable ducts would be supplied in lengths and installed at the base of the trench (on top of the 75mm layer of CBS/sand).

Backfill and Reinstate

3.5.9 Upon completion of trench excavation and ducting installation, the trenches would be filled with further appropriate surround material (again CBS or selected sand) to a level that would ensure 75mm of cover above the 132kV cables (and 20mm of cover above the fibre cable). Protective covers (12mm thick Class 1 protection tile) would then be put in place to protect the cables from future excavation works, with warning tape placed 100mm above the protective covers as an additional warning that cables lie beneath. The trenches would be backfilled above the protective covers to surface level using thermally stable materials. Excavated subsoil and topsoil would be used close to surface for open field excavation where practicable; however, material may also be required to be imported to site during backfilling activities. The surface would be reinstated back to original specification.

Stage 2

Construction of Joint Bays

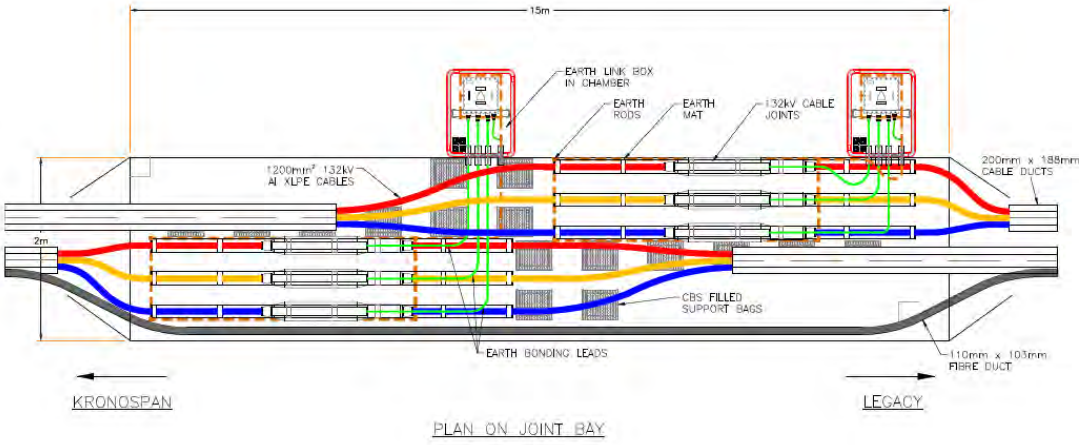
3.5.10 132kV cable joint bays would be required at maximum 750m intervals; fibre cable joint bays would be required at maximum 480m intervals. The joint bays would connect different sections of cable and would be underground structures which would provide a safe and accessible space for cable jointing bonding, earthing and cable protection.

3.5.11 The 132kV cable joint bays would be approximately 1.5m deep, 2m wide, and 16m long; the fibre cable joint bays would be approximately 1.2m deep, 0.6m wide, and 2m long. Precise joint bay dimensions would be determined at detailed design stage and would likely consist of a concrete base and concrete shuttered walls.

3.5.12 The locations of the proposed 132kV cable and fibre cable joint bays are shown on the **Planning Application Drawings** (Route Planning (EDES-1249-101-002-P01-Sheets 1-19).

3.5.13 An indicative plan of a 132kV cable joint bay is shown at **Image 3.7** below.

Image 3.7 – Indicative Plan of 132kV Cable Joint Bay



3.5.14 The joint bays would be constructed just in advance of the associated cable pulling/installation between them i.e. two joint bays would be constructed immediately prior to the cable pulling between them; during the preparation and undertaking of that cable pulling operation, the next joint bay along would be constructed to enable the cable pulling operations to be undertaken as a rolling work area.

Cable Pulling

3.5.15 The cables would be delivered to the main construction compounds (see **Image 3.14**) on cable drums using heavy goods vehicles (HGV). Tractors and other smaller vehicles would then be used to transport the required number of cable drums and other associated materials from the main construction compounds to the current working/installation area(s). Two working areas would be set up at each end of the installation section (at the joint bays). At one end, the cable feed would be placed, and at the other end, the equipment to pull the cables through to the joint bay.

Cable Jointing

3.5.16 Once the cables are pulled through to the relevant joint bay(s), the cables would be connected to complete one circuit (or two circuits) in a process called jointing. This process would be undertaken in an environmentally controlled enclosure which fits directly over the joint bay which is exposed at surface level to enable direct access.

Backfill and Reinstate

3.5.17 Once the cable jointing is complete between two corresponding joint bays, they would be backfilled using thermally stable materials and reinstated back to original specification.

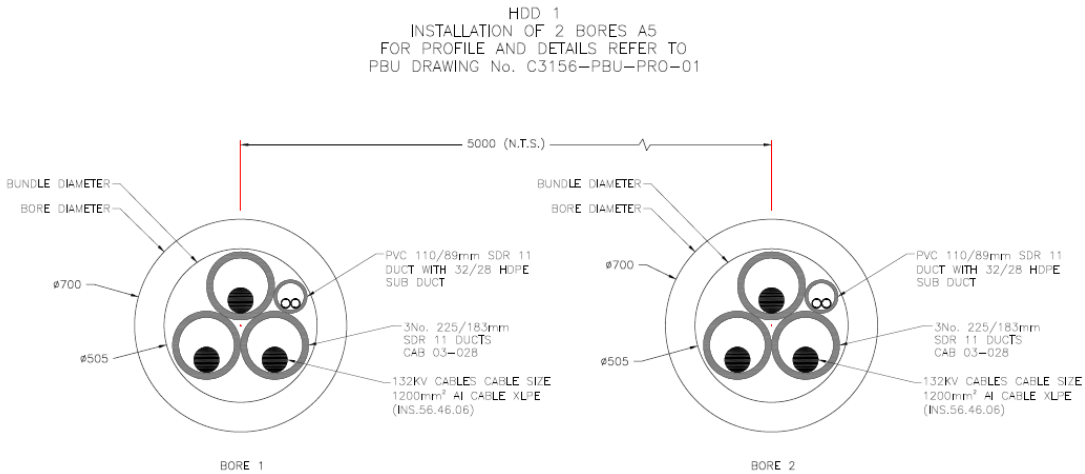
3.6 Cable Installation - HDD

Indicative HDD Configuration

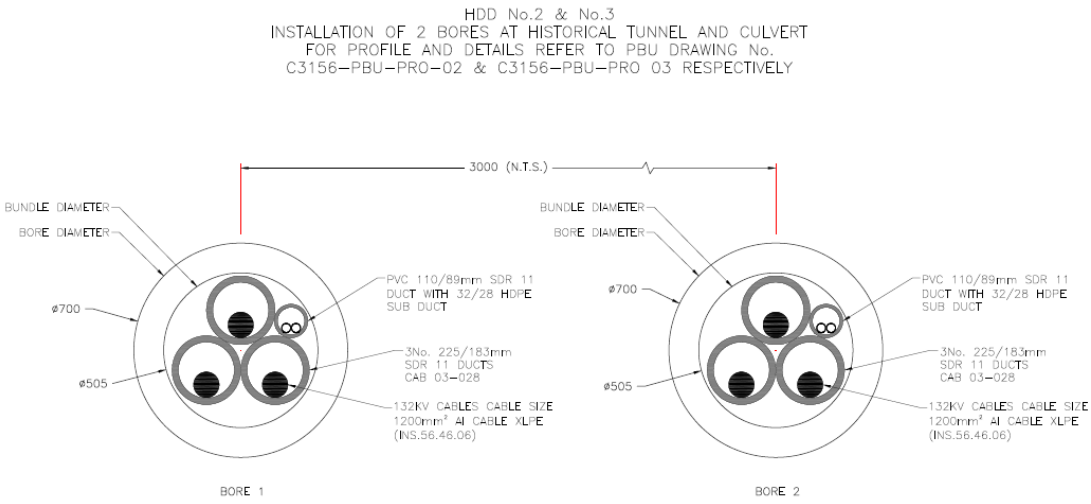
3.6.1 HDD is a trenchless method used to install underground cables beneath physical (natural and man-made) obstacles such as major roads, woodland and rivers with minimal disruption. HDD is proposed to be used at SED 2, SED 4 and SED 6 as set out in **Section 3.4**.

3.6.2 Typical HDD configurations for the installation of the 132kV double circuit cables and fibre cable are illustrated as indicative cross sections at **Image 3.8** and **3.9** below.

Inset 3.8 – Indicative HDD Configuration at SED 2



Inset 3.9 - Indicative HDD Configuration at SED 4 and SED 6



Rig Up Compound Areas

3.6.3 Rig up compound areas would be established at each HDD location to set up the HDD equipment; this area would accommodate the HDD drill, mud pump and pipe handling equipment for each HDD operation. The rig up compound areas would be fenced with anti-climb 'Heras' fence type panels. The exact dimensions of the rig up compound areas would be confirmed on site as this would be restricted (for SED 4 and SED 6) by road width.

3.6.4 The rig up compound areas would be positioned as follows:

SED 2

i) Footprint of approximately 50m x 30m positioned in the field east of the A5.

ii) Double width trackway panels would be required from the newly constructed double gateway to the rig up compound area to allow for HDD plant and equipment access.

SED 4

i) Footprint of approximately 40m x 10m positioned in the carriageway west of the crossing.

ii) Trackway panels would be required to cover the grass verges of the working area for rig stability due to separation requirements between the bores. This would result in the rig being partially sited on the verge and would require a stable section of ground to work from.

SED 6

i) Footprint of approximately 40m x 10m positioned in the carriageway southwest of the crossing.

ii) Trackway panels would be required to cover the grass verges of the working area for rig stability due to separation requirements between the bores. This would result in the rig being partially sited on the verge and would require a stable section of ground to work from.

3.6.5 **Image 3.10** provides an indicative overview plan of the working areas at SED 2 (including the rig up and 'sending' pit compound area east of the A5, and the separate 'receiving' pit compound area west of the A5). **Images 3.11** and **3.12** provide more focused indicative layouts for each of the two working areas.

Image 3.10 – Indicative Plan of SED 2 Compound Areas

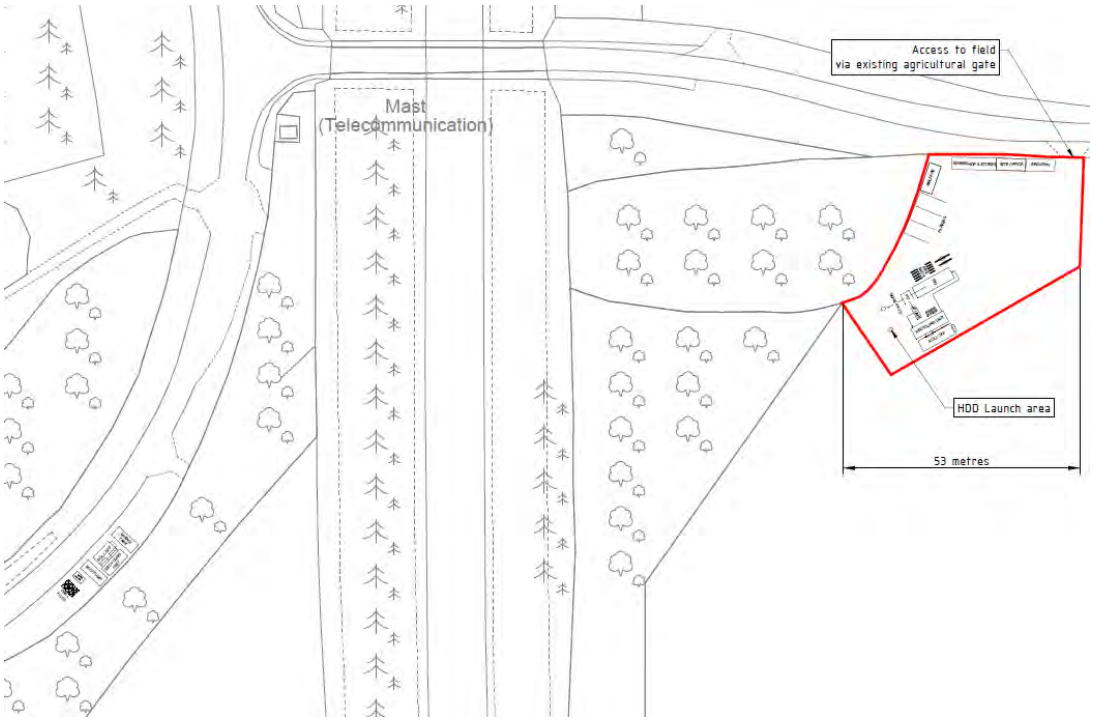


Image 3.11 – Indicative Layout of SED 2 Rig Up and 'Sending' Pit Compound Area East of the A5

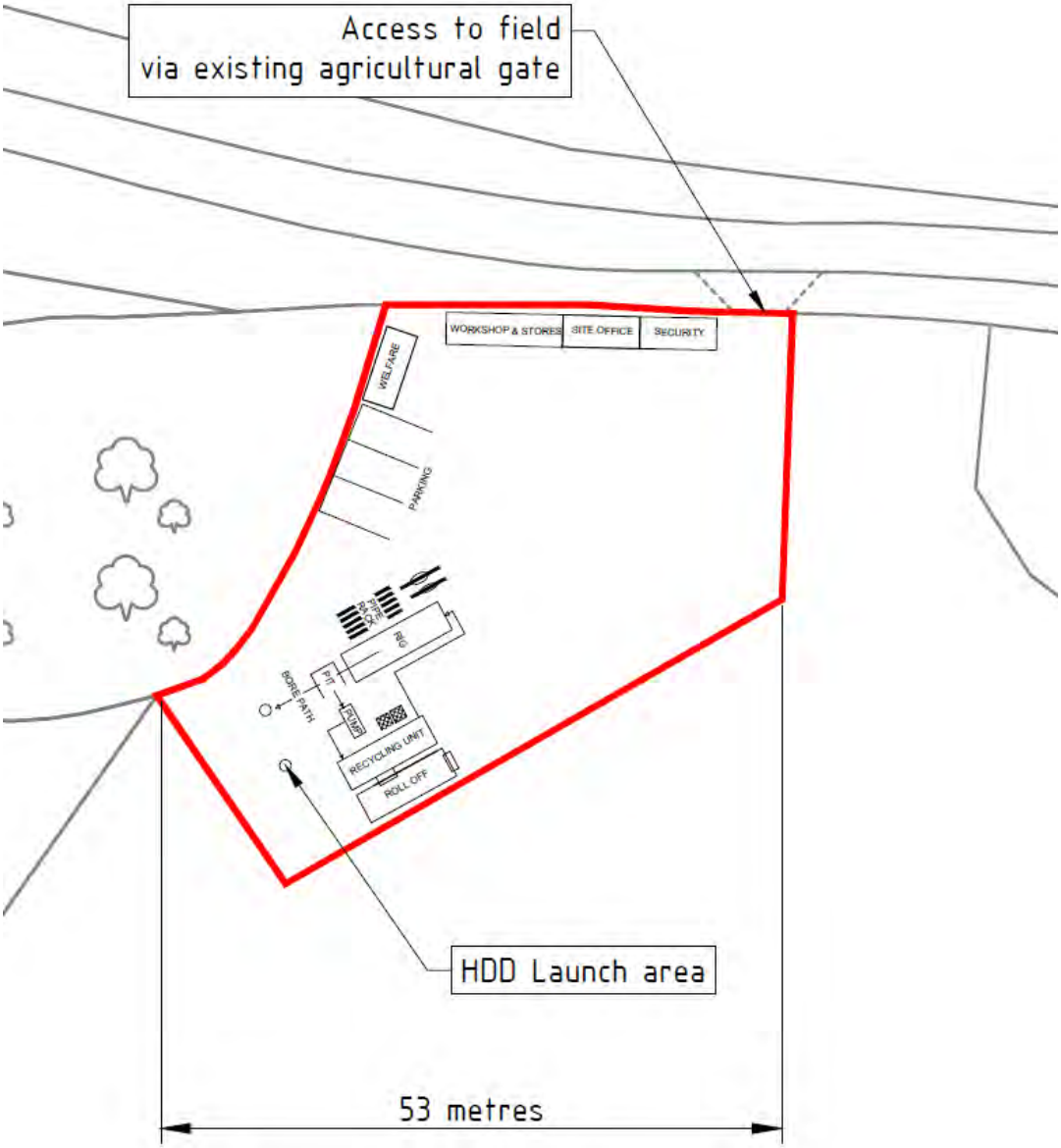
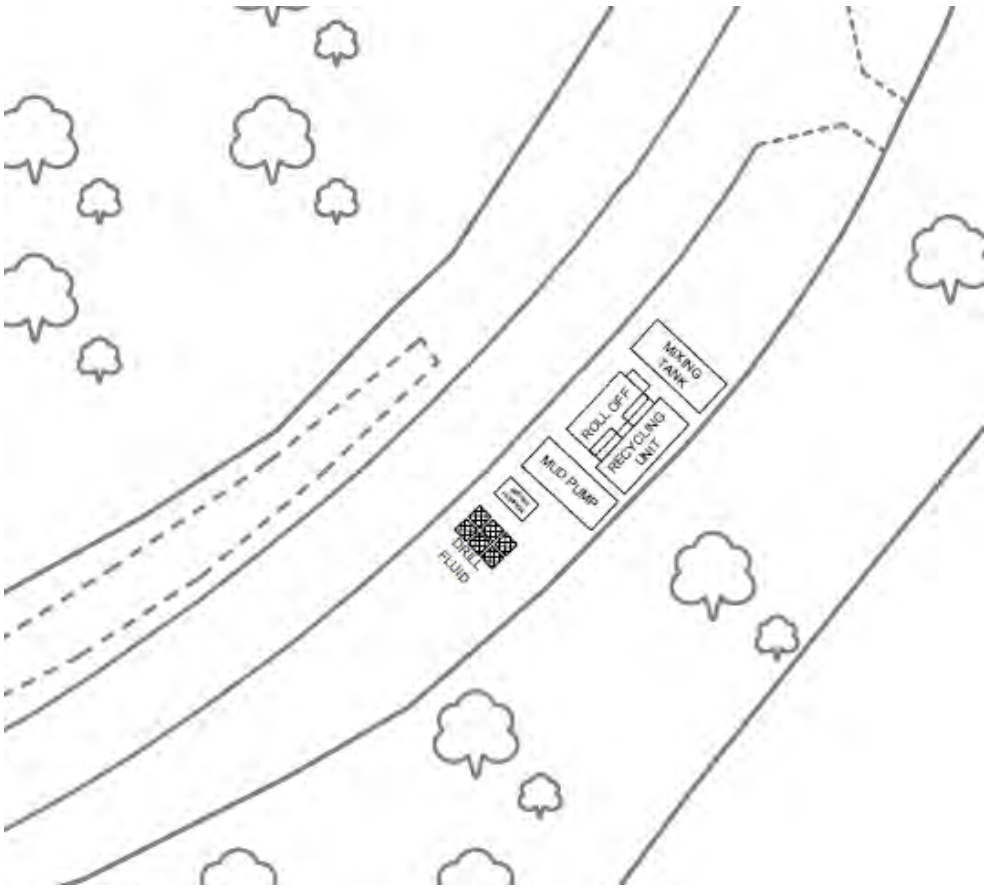


Image 3.12 – Indicative Layout of SED 2 'Receiving' Pit Compound Area West of the A5



3.7 Construction Compounds

Main Construction Compounds

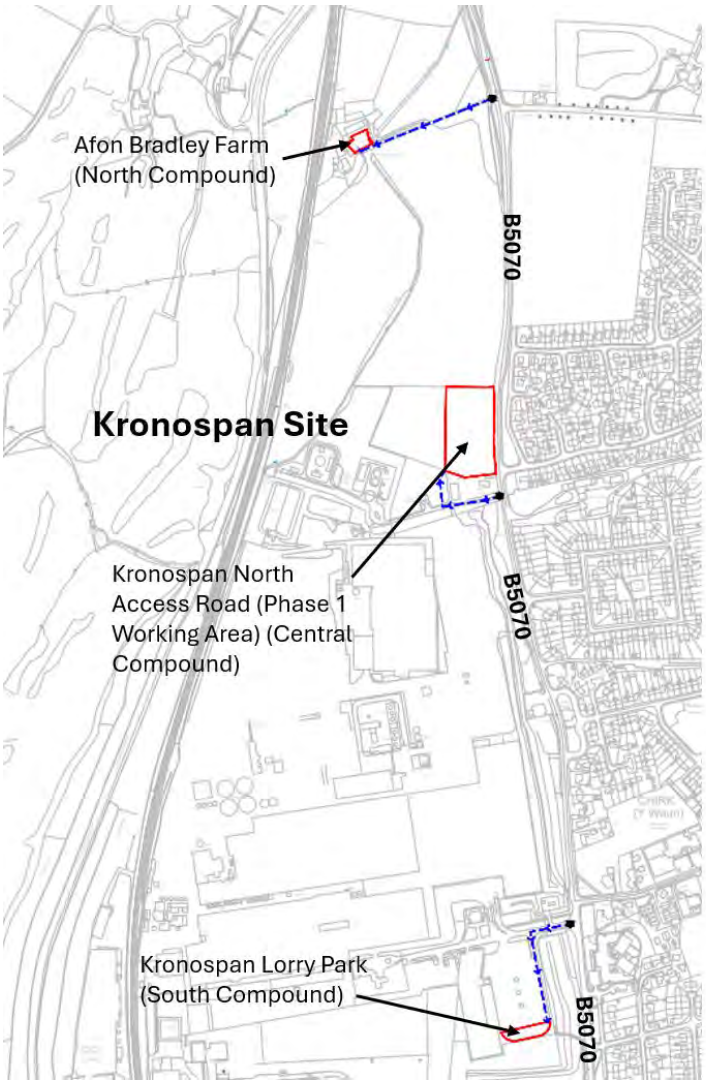
3.7.1 Three main construction compounds would be set up prior to commencement of the cable installation works. The main construction compounds would serve as the main 'bases' for the storage of plant and machinery, which would then be transported to the relevant cable sections as required as part of the rolling work area approach described in Section 3.5.

3.7.2 The location of the three main construction compounds is summarised below; the location of the three main construction compounds is provided at **Image 3.13**.

i) 1 – Afon Bradley Farm (North Compound).
ii) 2 – Kronospan North Access Road (Phase 1 Working Area) (Central Compound).

iii) 3 – Kronospan Lorry Park (South Compound).

Image 3.13 – Construction Compound Locations



3.7.3 HGVs travelling directly to any of the three main construction compounds from the Strategic Road Network (SRN) (the A5) would do so via the A5/A483 (Halton Roundabout), then head west along the A5, and then south along the B5070. Return journeys (travelling to the A5 from any of the three main construction compounds) would use the same route. This would avoid the existing vehicle routing restriction (weight limit) for HGVs to and from the south; it would also avoid any impact on the residential area of Chirk.

3.7.4 HGVs and light vehicles travelling between the three main construction compounds to the cable working areas would be able to travel either north or south along the

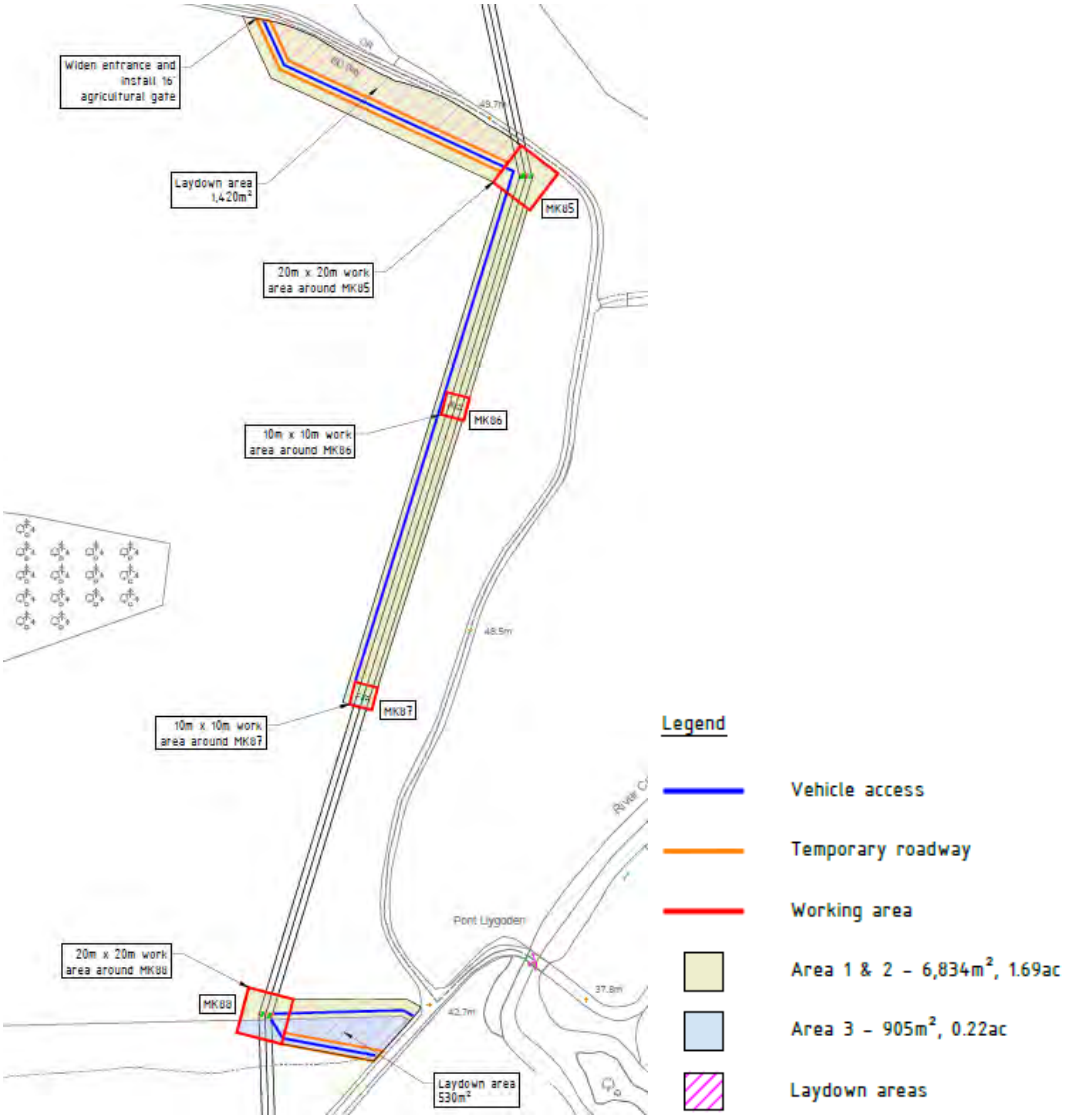
B5070 depending on which main compound they would be travelling from and which part of the cable working area they would be travelling to. Return journeys would also be travel north or south along the B5070.

3.7.5 Personnel vehicles and light vehicles would not be subject to routeing restrictions.

Legacy to Oswestry Overhead Line

3.7.6 On the approach to the existing Legacy to Oswestry 132kV overhead line, several working and laydown areas would be established to enable the final cable approaches and connections to be made. These are shown at **Image 3.14** below.

Image 3.14 – Indicative Working and Laydown Areas at Legacy to Oswestry 132kV Overhead Line



3.7.7 On the approach to Pylon MK88, vehicular access to the field would be taken via the existing agricultural field gate. On the approach to Pylon MK85, the existing agricultural field gate would be removed, and the entrance widened to enable a new 16-foot agricultural field gate to be installed to enable vehicular access. The replacement gate would remain in situ once the proposed cables are completed.

3.8 Further Construction Details

Construction Programme and Phasing

3.8.1 The timing of all construction activity would be dependent on the grant of permission for the Proposed Development. At present, it is anticipated that construction would occur over a 50-week duration and commence in Quarter 2 2026.

3.8.2 An indicative construction programme setting out the key (but not all) construction activities is provided at **Image 3.15** below.

Image 3.15 – Indicative Construction Programme

Kronospan 132kV Cables – Indicative Construction Programme																
	Activity	Est. Duration (days)	Est. Const. Emplyees	Week												
				1-4	5-8	9-12	13-16	17-20	21-24	25-28	29-32	33-36	37-40	41-44	45-48	49-52
1	Pre-Start Preparation	65	20	Weeks 1 - 13												
2	Pre-Construction	45	8	Weeks 2 - 9												
3	Mobilisation	5	8			Week 13										
4	Trench Excavation	150	24				Weeks 14 - 40									
5	Joint Bay Excavation, 132kV Cable installation, Jointing, Backfill	50	30											Weeks 41 - 49		
6	Subduct & Fibre installation	30	20											Weeks 42 - 46		
7	Testing	8	6												Weeks 47-48	
8	On-Site Switchworks & Commisioning	5	6													Week 49
9	Demobilisation	5	8													Week 50

Construction Hours

3.8.3 Construction activities would generally be limited to 07:30hrs to 18:00hrs Monday to Friday and 08:00hrs to 14:00hrs on Saturday. No construction work is planned on Sundays or Bank Holidays, however, there may be occasions when construction

would need to be undertaken outside of the core hours, for example, during major concrete pours or to enable the completion of an HDD operation.

3.8.4 HGV movements would not be permitted outside the hours outlined above without prior agreement from WCBC. These matters would be controlled through a Construction Traffic Management Plan (CTMP) which is expected to be a planning condition.

4.0 CONSTRUCTION TRAFFIC GENERATION AND VEHICLE TYPES

4.1 Introduction

4.1.1 This chapter provides a detailed overview of the anticipated construction traffic associated with the cable installation works. It outlines the expected levels of traffic generation, the types of vehicles required for the various stages of construction, and the specific routes that will be used to transport materials, equipment, and personnel to and from the site. In addition, the chapter examines the proposed traffic management measures designed to minimise disruption to the existing road network and ensure the safety of all road users. A swept path analysis is included to assess the manoeuvrability of construction vehicles along the proposed access routes, while visibility splay assessments are undertaken to identify and address any potential safety concerns at junctions. Collectively, these elements provide a comprehensive understanding of how construction traffic will be managed throughout the project to maintain efficiency, safety, and compliance with relevant regulations.

4.2 Construction Vehicle Requirements

4.2.1 The construction process for the grid connection cable route will require a limited but diverse range of vehicles to carry out the necessary excavation, material handling, and delivery operations efficiently. It is anticipated that approximately four to six vehicles will be in use at any given time during peak construction activity. These will include a **mini JCB** to undertake excavation works and manage spoil removal, and a **grab wagon** for transporting excavated spoil to and from an approved off-site storage or disposal facility. In addition, a small fleet of **work vans** will be used daily to convey construction personnel, hand tools, and smaller materials between the site compound and the active work areas. Periodically, a **curtain-sided lorry** will be required for the delivery of specialist materials such as electrical cabling, cable drums, or other prefabricated components. Similarly, a **tipper truck** will make intermittent visits to deliver sand fill or other backfilling materials as required throughout the installation process. Together, these vehicles will provide the necessary logistical support to enable efficient and controlled progress of the construction works.

4.3 Traffic Generation and Local Impact

4.3.1 Given the relatively small number of vehicles required for the project and the phased nature of the construction programme, the proposed works are not expected to generate a significant increase in traffic volumes within the local road network. The movements associated with the delivery and removal of materials will be infrequent and carefully scheduled to avoid peak travel periods, further minimising potential disruption. The majority of vehicle trips will consist of routine staff arrivals and departures, typically occurring during standard working hours. As a result, the impact on local traffic conditions is expected to be negligible, and the development is unlikely to cause any noticeable change in existing traffic patterns or congestion levels in the surrounding area.

4.3.2 Based on AXIS's experience of other similar cable construction projects and the combined total length of route (7.8km) it is forecast that the project will generate the following:

Table 4.1 – Kronospan 132Kv Cable Forecast Trip Generation

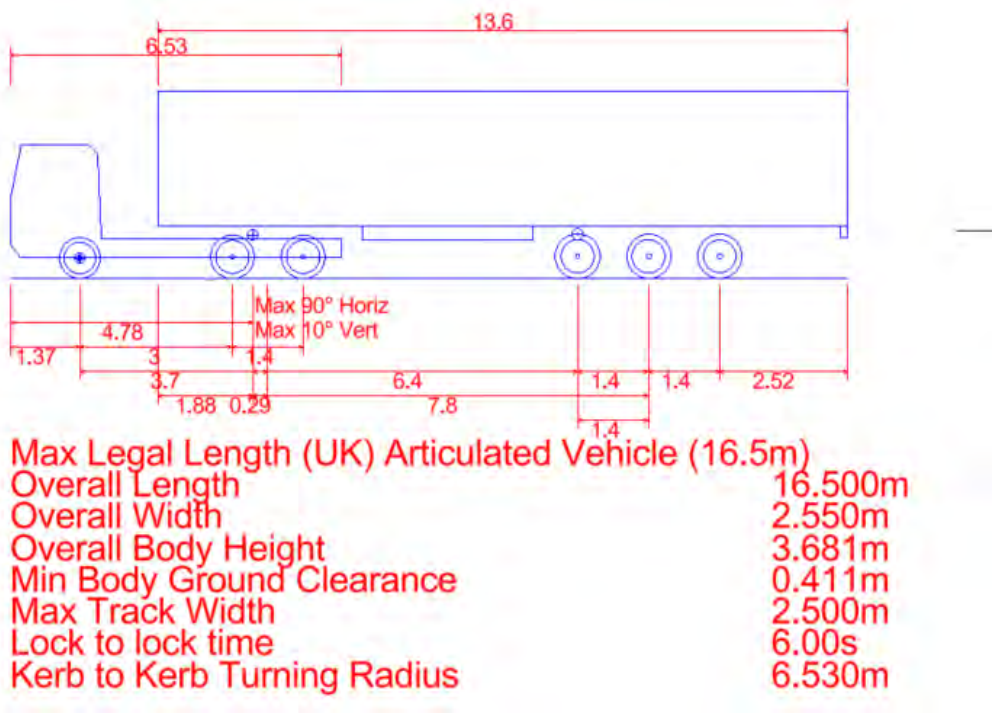
	Number	Vehicle	Use
	4	mini JCB	for the excavation of spoil
	4	grab wagons	for the transportation of spoil to / from and off-site storage area
	4	curtain-sided lorries	for the delivery of cabling
	4	tipper trucks	for the delivery of fill
	8	work vans	for the transportation of construction workers and tools from the site
Total	**24**	**Vehicles**	
	48	**Two-way Vehicle Movements**	

4.4 Largest Vehicle Types

4.4.1 The largest vehicle expected to be used during the construction phase is a large tipper truck, approximately 16.5 metres in length. This vehicle will primarily transport bulk materials such as sand fill and aggregate required for reinstatement and backfilling operations. The suitability of this vehicle type has been assessed through the swept path analysis presented later in this chapter, ensuring that access routes, junctions, and turning areas can safely accommodate its dimensions and operational needs. Where necessary, appropriate traffic management measures will be implemented to facilitate safe manoeuvring and minimise potential disruption on other road users.

4.4.2 The image below illustrates the maximum legal articulated vehicle permitted in the UK, which is expected to represent the largest vehicle involved in the cable installation works:

Image 4.1 – Dimension of Largest Construction Vehicle



4.5 Traffic Management Plan

4.5.1 The client's contractor has prepared a high-level traffic management plan (See **Appendix A**) detailing the anticipated traffic control measures required along the cable laying route. The plan identifies specific sections where full road closures will be necessary to allow safe execution of works, particularly where the available carriageway width is less than 6m and insufficient to maintain a live traffic lane alongside the working area. In these instances, temporary road closures will be implemented to ensure the safety of both construction personnel and road users. Suitable diversion routes will be established in advance, with appropriate advance warning signage to inform and guide motorists.

4.5.2 The plan also highlights areas where the carriageway width and surrounding highway conditions allow the works to proceed under two-way shuttle working, managed by temporary traffic signals. This arrangement will enable controlled vehicle movements through the work zone while maintaining a safe separation between traffic and construction activities.

4.5.3 All proposed traffic management measures will be developed in consultation with the local highway authority, emergency services, and other key stakeholders to minimise disruption and ensure that access for residents, businesses, and emergency vehicles is maintained wherever practicable. Further refinement of the traffic management arrangements will occur as the detailed construction methodology, phasing, and programme are finalised.

4.6 Swept Path Analysis

Cable Route

4.6.1 Swept path analysis has been undertaken to assess the manoeuvrability of construction vehicles along sections of the cable route where the carriageway width enable works to proceed under two-way shuttle working managed by temporary traffic signals. The results are presented on **Drawing Numbers: 5185-D01** and **5185-ATR01** to **5185-ATR02** included **Appendix B** of this TN.

4.6.2 This analysis confirms that construction traffic, including large goods vehicles and plant, can safely navigate these sections without compromising the safety of road users or site operatives.

4.6.3 The assessment incorporates the typical trench configurations for each element of the works. The double-circuit and fibre-optic trench is approximate 1.2 m wide, while the standalone fibre-optic trench is approximately 0.26 m wide. In line with best practice, a 1 m safety buffer has been applied on both sides of each trench to establish the required protection zone. This ensures that vehicle movements are assessed against a realistic construction footprint and that sufficient clearance is maintained throughout.

4.6.4 The results confirm that all sections proposed for two-way shuttle working can accommodate the largest design vehicle, a 16.5m rigid vehicle, with appropriate safety clearances for both road users and operatives.

Construction Compounds

4.6.5 Detailed swept path assessments have also been undertaken for the three principal construction compound areas.

4.6.6 As outlined in Section 3.7, the compounds comprise:

i) Afon Bradley Farm (North Compound);
ii) Kronospan North Access Road (Phase 1 Working Area) (Central Compound); and
iii) Kronospan Lorry Park (South Compound).

4.6.7 The compound swept path drawings **(5185-ATR03** to **5185-ATR05)** are provided in **Appendix B**.

4.6.8 Compounds 1 and 2 are intended for smaller construction vehicles, and their swept paths have been assessed using and 8m, 7.5-tonne box van. Compound 3, which will accommodate larger vehicles, has been assessed using a 16.5m maximum legal length articulated vehicle.

4.6.9 The analyses confirm that safe access and egress can be achieved, with sufficient space available to accommodate the turning requirements of the vehicles expected to use each compound (See Image 4.1).

4.6.10 These findings will inform the detailed design stage. Any areas where clearances are tight or where further mitigation may be required have been identified for additional review.

4.7 Visibility Splays

4.7.1 Visibility Splays at existing junctions along the sections proposed for two-way shuttle working (using multi-phase traffic signals) have been reviewed. These assessments are illustrated in **Drawings 5185-D02** to **5185-D07,** included at **Appendix C** at the end of this TN.

4.7.2 Using the TM plan prepared by the client's contractor, the existing junctions and their corresponding achievable visibility splays are summarised in **Table 4.2** below:

Table 4.2 – Existing Junctions within Proposed Multi-Phase Traffic Lights

Junction	
132Kv Route – Visibility in Accordance with Posted Speed Limit	
	North – South (m)
B5070 Church Road / Colliery Road	2.4 x 42.88 – 2.4 x 24.86
B5070 / Maes-Y-Waun	2.4 x 42.88 – 2.4 x 42.88
B5070 / Maes-Y-Waun (Chirk Court Cul-de-Sac)	2.4 x 42.88 – 2.4 x 42.88
B5070 / Kronospan Access	2.4 x 42.88 – 2.4 x 42.88
B5070 / Chapel Lane	2.4 x 42.88 – 2.4 x 42.88
B5070 / West View	2.4 x 42.88 – 2.4 x 42.88
B5070 / Residential Access	2.4 x 42.88 – 2.4 x 42.88
B5070 / West View (Leading to George Street)	2.4 x 42.88 – 2.4 x 42.88
B5070 / Welsh Water Access	2.4 x 42.88 – 2.4 x 42.88
B5070 / Crogen	2.4 x 42.88 – 2.4 x 42.88
Fibre Route – Achievable Visibility Splay	
	West – East (m)
Old Black Park Road / Park Lane	2.4 x 22.7 – 2.4 x 53.7
Old Black Park Road / Higher Barracks Lane	2.4 x 124.08 – 2.4 x 124.08
Old Black Park Road / McDonalds Roundabout	– 2.4 x 31.3
Old Black Park Road / Black Park Village Road	2.4 x 124.8 – 2.4 x 78.3
Old Black Park Road / Green Lane	2.4 x 12.3 – 1.4 x 11.2

4.7.3 It is considered that, as these junctions already exist and appropriate TM measures, such as multi-phase traffic signals, will be in operation, the identified visibility splays are adequate. When combined with the controlled traffic environment created by the TM arrangements, they are expected to provide a safe operating envelope and are not anticipated to result in any increased collision risk during the cable route construction period.

5.0 PROPOSED MITIGATION AND TRAFFIC MANAGEMENT MEASURES

5.1 Introduction

5.1.1 To ensure safe and efficient construction of the proposed 132 kV cable route, a series of mitigation and traffic management measures will be implemented in accordance with Chapter 8 of the Traffic Signs Manual, Safety at Street Works and Road Works (Red Book), and local highway authority requirements. The measures are designed to minimise disruption to road users, protect public safety, and maintain access for residents and businesses throughout the construction period.

5.2 Construction Phasing and Access

5.2.1 The cable installation will be undertaken in a phased manner, with sequential working sections typically ranging between 250 m and 500 m in length. This approach limits the extent of road occupation at any one time, thereby reducing traffic disruption.

5.2.2 Where carriageway widths are constrained, temporary single-lane shuttle working under two-way signal control will be employed. Temporary speed restrictions and advance warning signage will be installed in accordance with approved traffic management drawings. Vehicular and pedestrian access to all properties and businesses will be maintained at all times.

5.3 Temporary Traffic Management (TTM)

5.3.1 Temporary traffic management (TTM) arrangements will be implemented to manage the safe movement of vehicles, pedestrians, and cyclists through or around the working areas.

5.3.2 TTM will include the use of temporary traffic signals, lane closures, signed diversion routes, and advance warning signs. All arrangements will be established by accredited operatives and subject to daily inspections. Any alterations or maintenance of TTM layouts will be conducted under controlled conditions to ensure continued compliance with safety standards.

5.4 Construction Traffic and Site Access

5.4.1 Designated site access points will be established along the route to serve construction compounds and laydown areas. Access locations will be designed with appropriate visibility splays and constructed to prevent the deposition of mud or debris on the highway network.

5.4.2 A construction traffic routing plan will be implemented to ensure heavy goods vehicles (HGVs) avoid unsuitable roads and sensitive locations such as schools or residential areas. Swept path analyses have been undertaken to confirm that construction vehicles can safely enter and exit each compound in forward gear.

5.4.3 Vehicle movements will be managed by trained banksmen where visibility is restricted.

5.5 Compounds and Laydown Areas

5.5.1 Construction compounds will be positioned at suitable intervals along the route to support efficient logistics. Each compound will provide secure storage, welfare facilities, and off-road parking for operatives to prevent congestion on local roads. Internal segregation of plant, vehicles, and pedestrians will be maintained through marked routes and barriers. Appropriate surface water drainage, dust suppression, and noise mitigation measures will be incorporated as required.

5.6 Environmental and Community Mitigation

5.6.1 To minimise the environmental and community impacts of the works:

i) Working hours will generally be restricted to 07:30–18:00 Monday to Friday and 08:00–14:00 on Saturdays.
ii) Dust generation will be controlled through the use of water suppression and regular road sweeping.
iii) Noise mitigation measures will be employed, including the use of acoustic barriers where appropriate.
iv) Ecological protection measures, such as exclusion zones and toolbox talks, will be implemented where works are in proximity to sensitive habitats.

v) Residents, businesses, and stakeholders will be notified in advance of upcoming works through letters, on-site signage, and public information updates.

5.7 Monitoring and Compliance

5.7.1 All temporary traffic management installations will be subject to regular inspection by competent personnel to ensure compliance with approved plans and safety standards. A record of inspections, incidents, and corrective actions will be maintained.

5.7.2 The contractor will coordinate with the local highway authority, emergency services, and other utility providers to minimise cumulative impacts and ensure network resilience throughout the construction period.

5.8 Management of Public Rights of Way (PROWs) Crossing the Highway

5.8.1 Public Rights of Way (PROWs) intersecting the cable route and adjoining the highway network will be managed to ensure public safety and maintenance of accessibility through the construction period. The works will be undertaken in accordance with the Highways Act 1980, Rights of Way Act 200, and relevant local authority guidance on the temporary management and diversion of PROWs.

General Approach

5.8.2 The overarching principle will be to maintain public access along all PROWs wherever practicable, ensuring that routes remain open and safe for use by pedestrians, cyclists and equestrians. Where temporary closures or diversions are unavoidable, appropriate legal orders will be obtained from the LHA, and advance notification will be provided to all affected stakeholders.

Construction Interface with PROWs

5.8.3 Where PROWs cross or run adjacent to the construction corridor or associated highway works, the following control measures will be implemented;

i) **Physical separation**: Temporary fencing, barriers, or pedestrian guardrails will be installed to segregate the working area from the PROW and protect users from construction activities and moving vehicles.

ii) **Surface and access maintenance**: PROW surfaces will be kept in a safe and usable condition at all times. Temporary surfacing or ramps will be provided where excavation or cable trenching intersects the route.

iii) **Clear signage**: Advance warning and directional signage will be installed at access points and along affected routes, advising users of construction activities, temporary diversions, or alternative access arrangements.

iv) **Crossing management**: Where PROWs cross active working areas or haul routes, crossing points will be established and managed by trained site marshals. Temporary pedestrian crossings, tactile paving, or visibility measures will be introduced where necessary to ensure safe passage.

Temporary Closures and Diversions

5.8.4 In instances where maintaining access across a PROW is not feasible due to safety or engineering constraints, a Temporary Traffic Regulation Order (TTRO) or Temporary Public Path Order (TPPO) will be applied for in advance.

i) Diversion routes will be clearly signposted, accessible, and designed to minimise additional travel distance.

ii) The duration of closures will be kept to the minimum period required to complete the works safely.

iii) The reinstatement of the original PROW alignment will be undertaken promptly following completion of works, restoring the surface and any boundary features (e.g., gates, stiles, or fencing) to their original or improved condition.

Stakeholder Engagement

5.8.5 The contractor will maintain regular communication with the local Rights of Way Officer, parish councils, and user groups (e.g., Ramblers Association, British Horse Society) to ensure that proposed management measures are appropriate and clearly understood.

5.8.6 Advance notification of works affecting PROWs will be issued through on-site notices, letters to nearby properties, and updates on the local authority's website, where applicable.

Monitoring and Compliance

5.8.7 All temporary management measures will be subject to routine inspection by the Site Manager or Traffic Safety and Control Officer to ensure that fencing, signage, and surface conditions remain safe and effective. Any issues raised by the public or stakeholders will be recorded and addressed promptly through the site's incident reporting process.

6.0 SUMMARY AND CONCLUSIONS

6.1.1 Axis has been appointed by Kronospan Land Limited to provide highways and transport advice in relation to the planning application for the installation of two 132kV circuits and two fibre cables between the existing Legacy to Oswestry 132kV wood pole overhead line and the consented Kronospan 132kV substation.

6.1.2 The HTN outlines the existing conditions on and around the site, specifics associated to the proposed cable laying, forecast traffic generation and proposed vehicle types, and the proposed mitigation and traffic management measures.

6.1.3 The proposed cable comprises two routes extended from the Kronospan headquarters to Tenement in the east, with all sections aligned along the highway corridor.

6.1.4 The proposal involves the installation of two 132kV circuits and two fibre optic cables, connecting the existing legacy to Oswestry 132kV wood pole overhead line to the consented Kronospan 132kV substation. Installation will be undertaken using open trench construction within the existing highway. The works will follow three core routes, with both cable circuits being installed within the same trench.

6.1.5 Three primary construction compounds will be established to serve as the main bases for the storage of plant, machinery and materials.

6.1.6 A range of construction vehicles will be used, with the largest being a 16.5m maximum legal length articulated vehicle. The impact on local traffic is expected to be minimal, with no significant changes to existing traffic patterns or congestion levels anticipated.

6.1.7 A high-level Traffic Management Plan has been prepared by the client's contractor, identifying specific sections of the route where full road closures may be required. Swept path analysis has been carried out along the two-way sections of the cable route, demonstrating that all vehicle movements can be accommodated within the available carriageway width.

6.1.8 Swept path analysis for the construction compounds confirms that compounds 1 and 2 are sufficiently sized to allow a 7.5 t box-van to access and egress in a forward gear, while compound 3 can accommodate a 16.5m articulated vehicle in a similar manner.

6.1.9 The existing junctions, together with planned multi-phase signals and other traffic-management controls, will provide adequate visibility and a safe operating environment, with no expected increase in collision risk during cable-route construction.

6.1.10 Mitigation and Traffic Management measures have been proposed to ensure that the cable routes can be constructed safely and efficiently. These measures include:

i) Construction phasing and access arrangements.
ii) Temporary traffic management.
iii) Construction traffic control and site access.
iv) Compounds and laydown area management.
v) Environmental and community mitigation.
vi) Monitoring and compliance procedures.
vii) Management of Public Rights of Way (PROW).

6.1.11 On the basis of the above, it is concluded that there are no highways or traffic safety reasons that would warrant withholding planning permission for the proposed cable route.

Appendix A – High Level Traffic Management Plan

EXCALON TRAFFIC MANAGEMENT

NOTES

1. ALL SIGNS ARE AS PER CHAPTER 8.
2. DISTANCE BETWEEN SIGNS ARE NOT TO SCALE AND ARE FOR LAYOUT PURPOSES ONLY.
3. SIGNS SHOULD BE POSITIONED IN A SAFE WORKING SPACE.
4. BARRIER BOARD TO BE INSTALLED AT ALL ROAD CLOSURE POINTS.

KEY

EXTENT OF ROAD CLOSURE

DIVERSION ROUTE

SIGN	QUANTITY
FFORDD AR GAU ROAD CLOSED	X 3
FFORDD O'CH BLAEN AR GAU ROAD AHEAD CLOSED	X 2
Gwyriad Diversion ←	X 2
Gwyriad Diversion →	X 3
DIWEDD y gwyriad Diversion ENDS	X 2
Traffig y gwyriad Diverted Traffic ↑	X 2
Traffig y gwyriad Diverted Traffic ←	X 4
Traffig y gwyriad Diverted Traffic →	X 3

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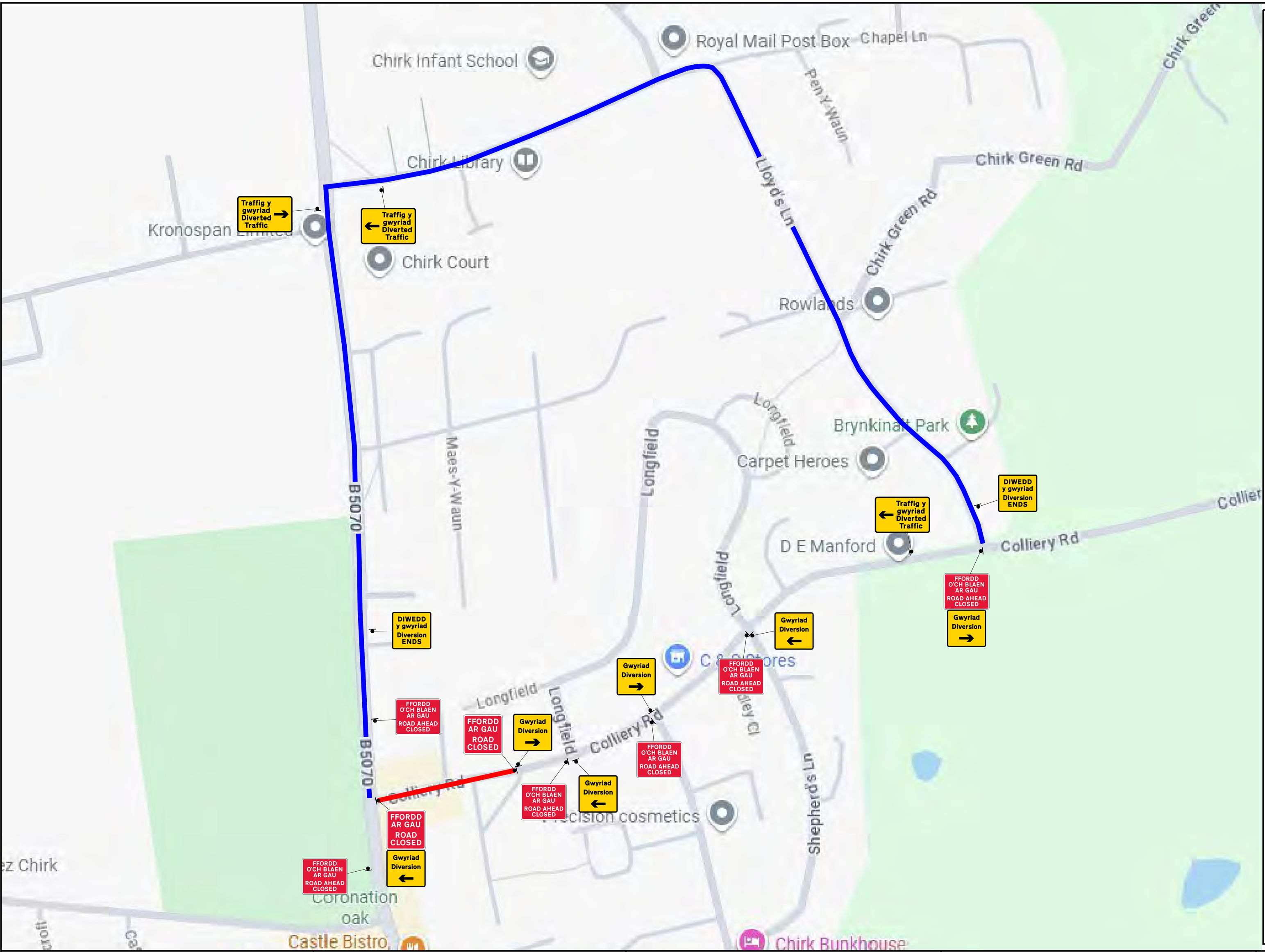
Traffig y gwyriad Diverted Traffic ↑
Traffig y gwyriad Diverted Traffic →
Traffig y gwyriad Diverted Traffic ←
Traffig y gwyriad Diverted Traffic ↑
Gwyriad Diversion ←
FFORDD AR GAU ROAD CLOSED
Gwyriad Diversion →
DIWEDD y gwyriad Diversion ENDS
FFORDD O'CH BLAEN AR GAU ROAD AHEAD CLOSED
ACCESS TO HOME FARM TO BE MAINTAINED

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NOTES

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KEY

EXTENT OF ROAD CLOSURE

DIVERSION ROUTE

SIGN	QUANTITY
FFORDD AR GAU ROAD CLOSED	X 2
FFORDD O'CH BLAEN AR GAU ROAD AHEAD CLOSED	X 6
Gwyriad Diversion ←	X 3
Gwyriad Diversion →	X 3
DIWEDD y gwyriad Diversion ENDS	X 2
← Traffig y gwyriad Diverted Traffic	X 2
Traffig y gwyriad Diverted Traffic →	X 1

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NOTES

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KEY

EXTENT OF ROAD CLOSURE

DIVERSION ROUTE

SIGN	QUANTITY
FFORDD AR GAU ROAD CLOSED	X 2
FFORDD O'CH BLAEN AR GAU ROAD AHEAD CLOSED	X 4
Gwyriad Diversion ←	X 3
Gwyriad Diversion →	X 2
DIWEDD y gwyriad Diversion ENDS	X 2
← Traffig y gwyriad Diverted Traffic	X 2
Traffig y gwyriad Diverted Traffic →	X 2

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KEY

EXTENT OF ROAD CLOSURE

DIVERSION ROUTE

SIGN	QUANTITY
FFORDD AR GAU ROAD CLOSED	X 4
FFORDD O'CH BLAEN AR GAU ROAD AHEAD CLOSED	X 5
Gwyriad Diversion ←	X 4
Gwyriad Diversion →	X 2
DIWEDD y gwyriad Diversion ENDS	X 2
← Traffig y gwyriad Diverted Traffic	X 1
Traffig y gwyriad Diverted Traffic →	X 3

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KEY

SIGN POSITION AND DIRECTION

EXTENT OF ROAD CLOSURE

DIVERSION ROUTE

SIGN	QUANTITY
ROAD CLOSED	X 2
ROAD AHEAD CLOSED	X 6
ROAD AHEAD CLOSED NO THROUGH ROUTE access only	X 1
Diversion ←	X 4
Diversion →	X 4
Diversion ENDS	X 2
Diverted traffic ←	X 2
Diverted traffic →	X 2

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KEY

EXTENT OF ROAD CLOSURE

DIVERSION ROUTE

SIGN	QUANTITY
FFORDD AR GAU ROAD CLOSED	X 2
FFORDD O'CH BLAEN AR GAU ROAD AHEAD CLOSED	X 5
Gwyriad Diversion ←	X 4
Gwyriad Diversion →	X 2
DIWEDD y gwyriad Diversion ENDS	X 2
Traffig y gwyriad Diverted Traffic ←	X 5
Traffig y gwyriad Diverted Traffic →	X 5
Traffig y gwyriad Diverted Traffic ↑	X 2

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KEY

EXTENT OF ROAD CLOSURE

DIVERSION ROUTE

SIGN	QUANTITY
FFORDD AR GAU ROAD CLOSED	X 2
FFORDD O'CH BLAEN AR GAU ROAD AHEAD CLOSED	X 2
Gwyriad Diversion ←	X 4
Gwyriad Diversion →	X 2
DIWEDD y gwyriad Diversion ENDS	X 2
← Traffig y gwyriad Diverted Traffic	X 5
Traffig y gwyriad Diverted Traffic →	X 5
↑ Traffig y gwyriad Diverted Traffic	X 2

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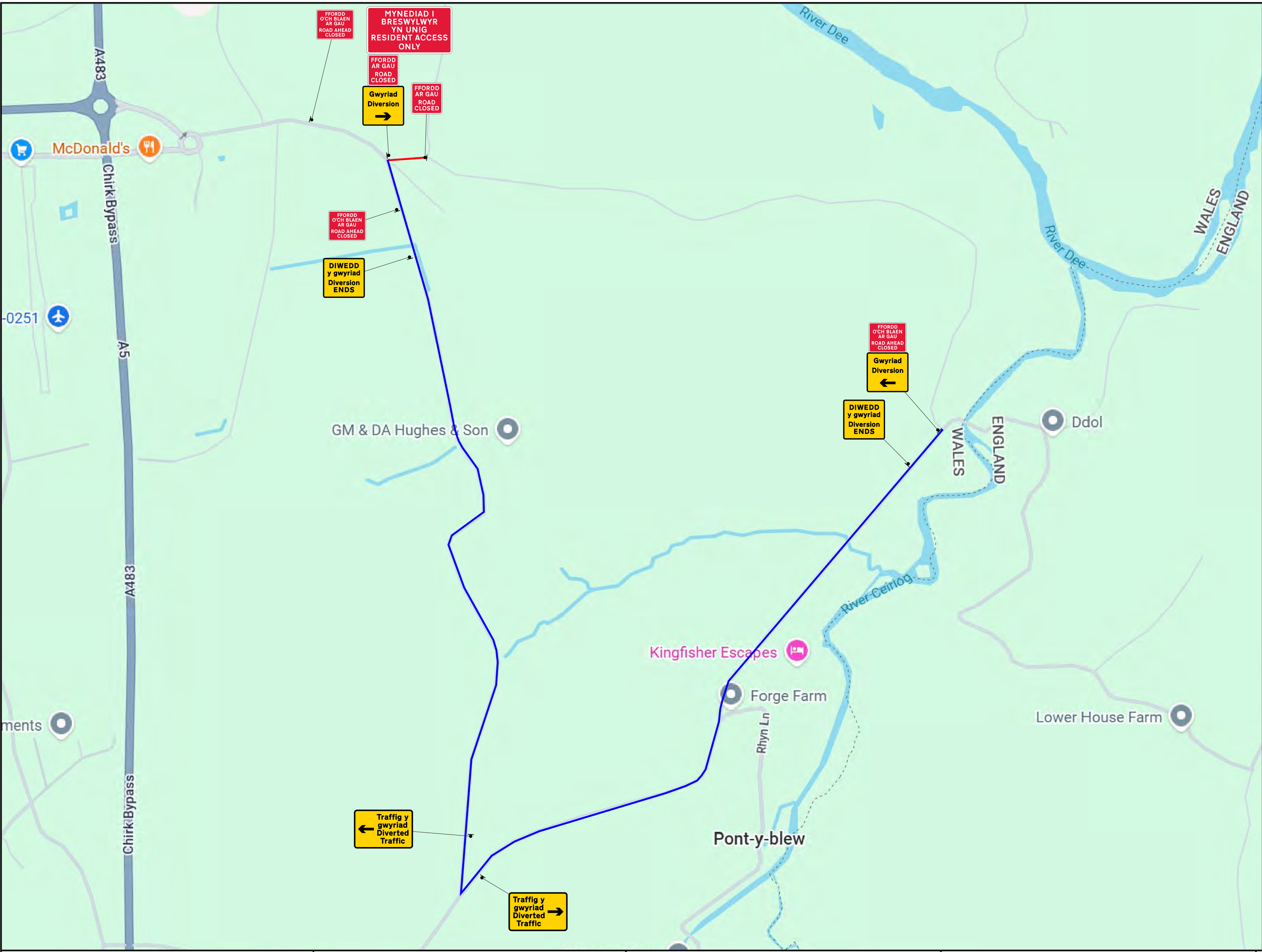
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KEY

EXTENT OF ROAD CLOSURE

DIVERSION ROUTE

SIGN	QUANTITY
FFORDD AR GAU ROAD CLOSED	X 2
FFORDD O'CH BLAEN AR GAU ROAD AHEAD CLOSED	X 3
MYNEDIAD I BRESWYLWYR YN UNIG RESIDENT ACCESS ONLY	X 1
Gwyriad Diversion ←	X 2
Gwyriad Diversion →	X 1
DIWEDD y gwyriad Diversion ENDS	X 2
← Traffig y gwyriad Diverted Traffic	X 1
Traffig y gwyriad Diverted Traffic →	X 1

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