Tab 6

Traffic Management Plan

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Traffic Management Plan

1 Introduction

This Traffic Management Plan (TMP) for the public roads will be a key construction contract document, the implementation of which will reduce the potential for impacts to Public Roads and to Road Users which may occur due to the presence of construction traffic, in particular on the Local Roads in the vicinity. This TMP is a dynamic document and will be developed in consultation with Kilkenny County Council.

1.1 Objective of the Traffic Management Plan

The objective of this preliminary TMP is to control and minimise the traffic impacts of construction insofar as it may affect the road network, local residents and the travelling public on the public roads close to and adjacent to the construction site, through measures to maximise road safety while keeping traffic flowing as freely as possible.

1.2 Scope of TMP

This TMP **concentrates on the construction stage** of the Ballynalacken Windfarm Project which is the critical phase in the context of safe and effective traffic management on the public roads and describes the traffic management for the transportation of construction materials and personnel along the public road network.

This TMP details the traffic management measures to be undertaken on the public roads;

- at and on approach to road works and haul route works locations;
- at and on approach to the site entrances on the R694, L58451, L5845, L5846, L5840 and L5838 for the Ballynalacken Windfarm;
- at and on approach to the site entrance on the L58442 for the Tinnalintan Substation;
- along the R432 and L58442 on the route of the Ballynalacken Grid Connection
- along local roads on the routes of concentrated construction traffic;
- along the public roads L5845, L5840 and L5846 during widening works
- at any points along the route where road repairs are required following completion of the works.

Control measures for traffic management at off-road construction works locations are outside the scope of this TMP and will be included in the Risk Assessment and Method Statements (RAMS) for the construction stage, which will be developed by the PSCS for the Appointed Contractor prior to the commencement of construction works.

Note: No road closures are envisaged for the Ballynalacken Windfarm Project.

The operational stage of the Ballynalacken Windfarm Project is also outside the scope of this TMP. In contrast to the construction stage, negligible traffic is associated with the operational stage of the Ballynalacken Windfarm Project and would only involve, for example, very occasional maintenance or repair work to widened road sections or repairs to an internal windfarm cable. This would require the delivery of an excavator and/or new cables and a pulling machine to some joint bay locations.

1.3 Responsibilities

This TMP will be updated from time to time to include any relevant planning conditions in addition to any new information on 3rd party road works or events, which could affect the timing, route or control measures for construction material deliveries.

The Appointed Contractor will be responsible for carrying out and managing the construction activities in accordance with the TMP.

The Environmental Clerk of Works will be responsible for monitoring the compliance with the TMP throughout the construction stage, through weekly auditing and point of interest inspections.

The Community Liaison Officer will be responsible for communicating with the local community and wider public during the construction stage, including keeping the local community informed of project progress and any construction activities which may cause inconvenience to them. Contact will be maintained with local residents on the day-to-day timing of traffic arrangements.

2 Project Life Cycle - Construction phase of Ballynalacken Windfarm

2.1 Duration of Construction Works

The construction of the Ballynalacken Windfarm Project will take c.12 months to complete. It is planned to construct all elements of the Ballynalacken Windfarm Project concurrently using multiple specialist crews.

Table 0-1:Duration and timing of the construction phase

Construction Works & Activities	Duration	Timing of Construction Activities
Pre-Construction - detailed design, confirmatory surveys, vegetation clearance, setting out of construction works areas	6 months	Immediately prior to the commencement of the main construction period, or where seasonal timing is relevant to confirmatory surveys, works or activities
Ballynalacken Windfarm - Main Civil and Electrical Construction Activities, Turbine erection, Windfarm Control Building, Internal Cabling, Ancillary Works.	10 months	Projected Start Date: within the 10-year planning duration timeframe.
Ballynalacken Windfarm - haul route works/activities	1 to 5 days at each HR location	Concurrent to the main civil and electrical works on the windfarm site, and Immediately prior to delivery of turbine components. Some reinstatement (e.g. road signage) completed immediately following each convoy transit, with remaining reinstatement following completion of all turbine components deliveries.
Internal Cable Link to Tinnalintan Substation	5 weeks	Concurrent to the main civil and electrical works on the windfarm site
Tinnalintan Substation	2 months	Concurrent to the main civil and electrical works on the windfarm site
Ballynalacken Grid Connection – cable trench and joint bay, jointing works + installation of equipment in EirGrid Ballyragget Substation	5 weeks for civil works + 2 months for electrical works	Concurrent to the main civil and electrical works on the windfarm site
Commissioning of the Ballynalacken Turbines, Internal Windfarm Cabling, Windfarm Control Building, Internal Cable Link to the Tinnalintan Substation, Tinnalintan Substation and the Ballynalacken Grid Connection	2 months	Commissioning will take place after the Main Construction is complete.

The duration of works provided are approximate and may be shorter or longer, depending on the final number of crews used, weather conditions etc. A formal programme of works will be prepared by the appointed Contractor prior to the commencement of construction activities.

2.2 Construction Personnel

It is expected that up to 120 workers will be involved in the pre-construction, main construction and commissioning works, broken down as follows:

Ballynalacken Windfarm: c.77 personnel in total comprising

- c.9 main contractor, engineering and environmental consulting personnel will be involved in pre-construction activities both on and off-site; c.35 civil contracting personnel will be involved in construction of the temporary construction compound, and the roads, hardstands, turbine foundations, internal cabling ducting; c.12 turbine manufacture personnel will be involved in turbine deliveries and erection;
- c.10 electrical and civil contractor personnel will be involved in the electrical works and construction of the Windfarm Control Building;
- Security and canteen personnel as required.

Tinnalintan Substation: c.32 personnel in total - electrical and civil contractor personnel will be involved in the electrical works and construction of Tinnalintan Substation including buildings and equipment installation.

Internal Cable Link: c.8 personnel in total - 6 civil and electrical contracting personnel involved in cabling from the Windfarm Control Building to the Tinnalintan Substation and 2 electrical contracting personnel for cable pulling and jointing works along the cabling route.

Ballynalacken Grid Connection: c.18 personnel in total - 14 civil and electrical contracting personnel involved in cabling from the Tinnalintan Substation to the EirGrid Ballyragget Substation and 4 electrical contracting personnel for cable pulling and jointing works along the grid connection cabling route.

- 4 electrical commissioners for the commissioning of the turbines, control building, Tinnalintan Substation, grid connection, and equipment at EirGrid Ballyragget Substation
- Security and canteen services personnel.

Note: Some Civil and Electrical personnel will work on multiple elements of the Project concurrently.

2.3 Construction crews & use of machinery and equipment at works areas

Windfarm Civil and Electrical Works: Four crews for civil works, 2 crews at borrow pit extractions, 1 crew at electrical works; 1 crew for turbine erection; 1 crew for turbine delivery (escorting convoy);

Internal Cable Link: 1 crew for civil work, 1 crew for cable pulling, 1 crew for cable jointing;

Tinnalintan Substation: 1 crew for civil work, 1 crew for electrical works;

Ballynalacken Grid Connection: 1-2 crews for civil work, 1 crew for cable pulling, 1 crew for cable jointing;

Commissioning Works: 2 crews using specialist electrical commissioning equipment and tools, and vans.

2.4 Construction Hours of Work

Normal construction times will be between 07.00 to 19.00hrs Monday to Friday and 08.00 – 16.30hrs on Saturdays.

2.5 Imported Construction Materials

The construction materials, which will be brought onto the Ballynalacken Windfarm Project site, are listed in the table below along with details of the quantity and source of the materials.

Table 0-2: Quantities, type and source of construction materials

Materials	Quantity	Likely Source of Materials	Destination Element
Concrete	7,910m³ / 989 No. loads	County Kilkenny or Laois	Windfarm Tinnalintan Substation
Aggregate (crushed stone)	14,000m³ / 1,167 No. loads	County Kilkenny or Laois	All elements
Surface dressing (public road sections)	900m³ / 150 No. loads	Roadstone Bennettsbridge	Windfarm Internal Cable Link Grid Connection
Turbine Towers (4 sections per tower)	48 No. abnormal wide and long loads	EU	Windfarm
Turbine Nacelle and Hub	24 No. abnormal wide Loads	EU	Windfarm
Turbine Blades	36 No. abnormal wide and long loads	EU	Windfarm
Reinforcing Steel	12 No. loads	Various Irish Suppliers	Windfarm
Main Transformers	1 No. Loads	EU	Tinnalintan Substation
Masts, Telecom Poles and Equipment	4 No. loads	EU	Windfarm
Electrical Cabling, Communications Cabling	14 No. loads	EU	Windfarm Tinnalintan Substation Internal Cable Link Grid Connection
Switchgear, Electrical Equipment, Apparatus and Plant	5 No. loads	EU	Windfarm (control building), Tinnalintan Substation, Grid Connection (Ballyragget Substation)
Pre-cast concrete Joint Bay, Communications and Link Box Chambers and Covers	4 No. loads	Ireland - Offaly	Windfarm Internal Cable Link Grid Connection
HDPE and HDPE Comms Ducting	85 No. loads	Ireland – presently Cork	Windfarm Internal Cable Link Grid Connection
Red Cable Protection Strip	1 No. loads	Ireland - presently Cork	Windfarm Internal Cable Link

Materials	Quantity	Likely Source of Materials	Destination Element
and Yellow Warning Tape			Grid Connection
Steel protection plate	1 No. loads (if required)	Ireland - presently Birr, Co Offaly	Grid Connection
Marker posts and plates	1 No. load	Ireland - presently Dundrum, Co Dublin	Windfarm Internal Cable Link Grid Connection Tinnalintan Substation
General building materials	6 No. loads	Various Irish Suppliers	Windfarm Tinnalintan Substation
Hedging and tree species	1 No. load	Ireland - Department of Agriculture registered nursery.	Windfarm Tinnalintan Substation
Fencing materials, posts, mesh fencing, wire	1 No. load	Local Agricultural Store/ Hardware	Windfarm Tinnalintan Substation Haul Route Works

2.6 Haulage Routes for Construction Materials & Turbine Components

2.6.1 Delivery Vehicles – Axles

Delivery vehicles for construction materials will comprise standard 4-axle rigid HGV tipper units for aggregate and concrete deliveries, HGV tractor units with 2-4 axle articulated flat-beds or tautliner trailers for other material deliveries, vans, and 4WD vehicles towing single/double axle trailers for smaller parts. The maximum load per axle, for delivery of the turbine components and construction materials will be confined to within legal limits. Turbine Components will be delivered using specialist HGVs, semi-trailers and blade transport trailers.

2.6.2 Haulage Routes for Construction Materials

Aggregate, Concrete, Road Surface Dressing

Aggregate, concrete and public road surface dressing will be delivered directly to construction works areas from quarries with suitable products in the general area.

Deliveries to the windfarm area; The delivery vehicles will use the N78 (Kilkenny - Castlecomer Road) and the R694 (Castlecomer to Ballyragget Road) and then the local roads (L58451, L5845, L5846 and L5840) in the vicinity of the windfarm site.

Deliveries to the Tinnalintan/Moatpark area: HGV loads being delivered to the Tinnalintan Substation and Ballynalacken Grid Connection will be delivered via the N77 to Ballyragget, turning off in Ballyragget onto the R432 and then the local road L58442 as required.

There are 3 No. quarries in the area with suitable products;

- Wholesale Suppliers Limited Coolbawn, Castlecomer is 4.5km from the Windfarm site and supply sand and gravel.
- Cemex Dunmore, Kilkenny is 20km from the Windfarm site and supply a more extensive range of quarry products including concrete and gravel products.
- Roadstone Bennettsbridge are 27km from the Windfarm site and supply concrete and gravel products.

Other Construction Material

Other materials, such as ducting, geotextile and other construction materials, will be sourced from various suppliers (locally where available) and will be transported using the same transport routes as the aggregate and concrete. These materials will be delivered to, and stored at, the Temporary Construction Compounds at the windfarm site or at Tinnalintan Substation, as appropriate, until required at works areas. A smaller truck or 4WD with trailer will then be used to deliver these materials to active works areas.

The relevant Figure/Drawings are listed in the table below

TMP 1	Construction Materials Haulage Route	End of this TMP

2.6.3 Haulage Routes for Turbine Components

The turbine components will be delivered from port to the site via the public road network using a combination of special extendable flatbed semi-trailers and blade lift trailers. The extendable flatbed semi-trailers are designed with two to three hydraulically steered axles and either single or double extendible load floors. The hydraulic turntable steering, which can be operated independently for each axle, can create a very large steering angle which makes these trailers highly manoeuvrable on public roads. The blade lift trailers additionally use a hydraulic lift affixed to the trailer bed to both turn and rise the blade on the horizontal plane or/and lift the blade vertically to further increase manoeuvrability. The trailer floors for both types can be fully retracted for the return, unladen journey from the windfarm site.

Turbine components transportation vehicles will use the motorway and national road network from port, joining the M9 and using Exit 8 (Kilkenny) then the N10. The vehicles will then follow the N77; taking the N78 (Kilkenny - Castlecomer Road) on the right; travel into Castlecomer as far as the square, driving straight onto Chatsworth Row and then reversing down High Street in order to drive straight onto Barrack Street (R694), and then onto the R694 Castlecomer – Ballyragget Road and accessing the site using Site Entrances from R694 and from the following Local Roads - the L58451, L5845, L5846 and L5840 (Cromwell's Road).

In order to navigate onto Barrick Street in Castlecomer with the turbine blades, the blades will firstly be delivered to a blade transfer yard on the N78 on the Kilkenny side of Castlecomer. The blades will be lifted onto specialist blade-lifter trailers in this yard using a large crane. The blade lift mechanism will be deployed in Castlecomer town in order to avoid buildings on The Square, along High Street and Barrack Street.

The relevant Figure/Drawings are listed in the table below

TMP 2	Turbine Component Transport Route	End of this TMP
TMP 4.1 to 4.13	Haul Route Works & Activities	End of this TMP

2.7 Construction Works & Activities

The construction works for the proposed Ballynalacken Windfarm Project will mainly comprise:

- **Windfarm Site:** site entrances, windfarm site roads, turbine foundations and hardstands, erection of turbines; underground internal windfarm cabling, windfarm control building and ancillary works, mainly in agricultural lands, forestry lands;
- **Internal Cable Link**: underground cabling and jointing chambers linking the Windfarm Control Building to the Tinnalintan Substation mainly under agricultural lands and short section under public road;
- **Tinnalintan Substation:** 110kV substation compound, buildings, electrical apparatus, site access road.

- **Ballynalacken Grid Connection** – underground cabling linking the Tinnalintan Substation to EirGrid Ballyragget Substation; under private road and under public road.

- **Haul Route Works** along the public road corridor and on adjacent lands.

The main works and activities associated are outlined in the sections below.

2.7.1 Site Entrances

The construction of Site Entrances will involve the provision of hardcore areas and clearance of roadside boundaries to ensure adequate visibility in both directions and to provide adequate hardstanding to facilitate deliveries including large turbine components.

Construction of the Site Entrances will involve excavations to remove the roadside boundary to achieve the sightlines in both directions, and excavations at the entrance splay to provide adequate hardstanding to facilitate deliveries including large turbine components. The excavation of the splay area will involve vegetation, topsoil and subsoils being removed to formation level, the adjacent drainage channels will be excavated, and culvert piping installed across for concealed roadside drain; geotextile matting will be laid out where necessary, a minimum sub-base will be laid which will consist of 350mm deep layer of 50mm crushed stone. A surface layer will be laid which will consist of 100mm compacted granular fill to accommodate HGV traffic. A vibrating roller will compact the stone in layers. The surface of the new entrance will be finished with a 2.5% gradient to allow water run-off. A temporary post and mesh fence and double access gates will be erected to maintain road boundary during the construction works.

The relevant Figure/Drawings are listed in the table below

BWF 25 to BWF 38	Site Entrance Drawings	End of this TMP

2.7.2 Turbine Delivery

Component delivery is a highly controlled activity, and the transport delivery plan and schedule for the turbine components from port to site will be coordinated with Kilkenny County Council and An Garda Síochána.

The delivery of turbine components are expected to take place overnight or during off-peak hours due to the oversize nature of some of the components such as the blades. A normal delivery consists of three trucks in convoy with escorts. The entire delivery will be fully escorted. One of the escorts will precede the convoy and request any oncoming traffic to pull into the nearest convenient passing locations. Blades will be lifted from the standard blade carried trailers onto blade lifter trailers at the Blade Transfer Area in agricultural lands adjacent to the N78 road.

Two to three crews will be work at Haul Route Works locations to remove street furniture, such as road signs and bollards, immediately prior to the passing of the turbine component convoy, and will immediately replace this street furniture back into their original sockets/location once the convoy has passed through.

2.7.3 Cabling Works – Internal Windfarm Cabling, Internal Cable Link, Grid Connection

The Internal Windfarm Cabling will connect the wind turbines to the Windfarm Control Building at Ballymartin; the Internal Cable Link will connect the Windfarm Control Building to the Tinnalintan Substation; and the Ballynalacken Grid Connection will connect the Tinnalintan Substation to the national electricity system at the existing EirGrid Ballyragget Substation. All of these cables will be installed underground.

The Internal Windfarm Cabling is located for the most part under the Windfarm Site Roads. The remaining sections will be through agricultural fields, along forestry firebreak and under the public road.

The Internal Cable Link is predominately under agricultural grassland with short sections located under Windfarm Site Road and under public road.

The Ballynalacken Grid Connection is located under the private site access road to Tinnalintan Substation and under the public road as far as the hardcore Ballyragget Substation compound.

The trenches will be excavated ahead of the ducting works in circa 50m sections, so that only circa 100m of trench is open per crew at any one time along the cable routes. The contractor will complete approximately 100 linear meters of trench per day depending on the site conditions.

Generally the underground cabling construction methodology for the Internal Windfarm Cabling, Internal Cable Link and Grid Connection will be similar: Using an excavator, a cable trench will be excavated to the required depth and width and the trench floor will be graded, smoothed and trimmed. In addition, along public road sections, a surface check will be carried out for underground services with appropriate equipment. Service owners will also be contacted to confirm service locations. The road surface will be saw cut to the depth of existing asphalt/bitmac layers.

Once the trench has been excavated, a bedding layer will be placed at the bottom of the trench. The ducts, through which the electrical cables and fibre optic cables will be pulled, will be installed by hand. Warning strips will be placed in the trench and the trench will be backfilled using a mini digger in accordance with the backfill required for the location:

- Internal Windfarm Cabling & Internal Cable Link in agricultural/forestry lands: trench will be backfilled with excavated soils.
- Grid Connection: trench will be backfilled with lean-mix concrete and aggregates.

The top of the trench will be reinstated according to the prevailing ground conditions:

- In agricultural lands and road verges the top of the trench will be reinstated with topsoil and reseeded with native grass species.
- Along the public road, the top of the trench will be reinstated with road surface dressing.
- Under windfarm site roads and the site access road at Tinnalintan, the top of the trench will be reinstated with the same aggregate used for the access road.

Excavations will be carried out to install the jointing chambers along the route of the Internal Cable Link to the Tinnalintan Substation, all in private lands, and the along the route of the Ballynalacken Grid Connection (3 No. in total - 2 No. in the R432 and 1 No. in private lands). These jointing chambers will be pre-cast concrete, and the trench will be excavated to the required depth and width to fit the chambers. Once in place, the excavation will be backfilled with excavated materials (Internal Cable Link) or aggregate (Grid Connection). The ducting will be fitting into the chambers. Following civil works completion, electrical and fibre optic cables will be pulled through the ducts and connected in the jointing chambers. Once jointed the chambers will be filled with sand, the chamber cover place over the chamber, and the ground surface reinstated according to the location.

Cabling works within the public road network will be carried out in co-ordination with Kilkenny County Council and in accordance with “Guidelines for the Opening, Backfilling and Reinstatement of Openings in Public Roads (Department of Transport, Tourism & Sport, 2017) (MM60). Traffic will be actively managed during works with traffic management plans and Stop/Go systems implemented. Each work area will be secured with adequate protective barriers and traffic signs and traffic management controls as outlined in "Guidance for the Control and Management of Traffic at Road Works".

Works on Public Roads

The construction of the Internal Windfarm Cabling at the two crossing points of the L-5846 (north of T6 and south of T7) will be facilitated through a one-lane road closure. At road crossing locations it is proposed to complete the trenching on one lane at a time which will involve closure of one lane for half a day at each point. The construction of the Ballynalacken Grid Connection cabling will be facilitated through a one-lane closure on the L58442 for 1 week and the R432 for 2-3 weeks. Traffic flow will be maintained with flagmen and moving the construction machinery into nearby laybys or entrances.

The L5845, L5840 and L5846 will require an average of 1m of Public Road widening works to facilitate deliveries. Works will involve the permanent removal of a c.0.5m of roadside verge on both sides of the existing road carriageway, and the laying of aggregate and road surface dressing over the widened sections. A Stop/Go system with flagmen will be put in place for 2-3 weeks. The installation of Internal Cable Link across the L5845 will be carried out at the same time. Public road widening will be carried out in co-ordination with Kilkenny County Council and in accordance with "Guidelines for the Opening, Backfilling and Reinstatement of Openings in Public Roads (Department of Transport, Tourism & Sport, 2017).

The construction of the Internal Cabling Link on the L58442 will involve cable trenching mainly in the verges, with works completed at offpeak times over a 2 weeks period, and access will be maintained to the 8 no. residences on the L58442 affected by the works by moving the machinery off the road (i.e. into a field entrance or gate).

Road Opening Licence: These lane closures will be managed through the Roads Management Office (RMO) in co-ordination with Kilkenny County Council; will be carried out in accordance with Transport Infrastructure Ireland (TII) "Requirements for the Reinstatement of Openings in National Roads (May 2019)".

Road Reinstatement: The road pavements/built surfaces will be reinstated according to the conditions of the Road Opening Licence, and in accordance with the Department of Transport, Tourism & Sport Guidelines for Managing Openings in Public Roads (April 2017).

Contact with Local Residents: Contact will be maintained with local residents on the day to day timing of the works. A Community Liaison Officer (CLO) will be appointed as the point of contact between the Contractors and local residents. The CLO will keep active contact with local residents on the traffic arrangements around the works day to day and the project website **www.ballynalackenwindfarm.com** will be kept updated.

3 Works Locations and Traffic Management Measures

3.1 Site Entrances

The Ballynalacken Windfarm Project site will be accessed from the public road, through both existing and newly created entrances from the public road. These entrances are identified as Site Entrance No.1 to No.11 on drawings referenced below and the table below. The windfarm site will be accessed through Site Entrances No.1 to No.9; the Met Mast will be accessed through Site Entrance No.10; and the Tinnalintan Substation will be accessed through Site Entrance No. 11. Dry wheel wash areas will be provided at a number of Site Entrances, as identified in the table below.

Entrance #	Road	Existing / New	Permanent / Temporary	Project Element Accessed	Notes
1	R694	New	Permanent	All windfarm site	
2	L-58451	Existing Entrance to farm/ forestry track	Permanent	Turbine T1 Turbine T2 Turbine T3 Turbine T4	No works to existing entrance. Dry wheel Wash to be installed
3	L-5845	Existing Entrance to farm track	Permanent	Control Building	Existing Entrance to be widened
4	L-5846	Existing Field entrance	Permanent	Turbine T5 Turbine T6 Borrow Pit No.1 Construction Compound No.1	Existing Entrance to be widened. Dry wheel Wash to be installed for the construction period
5	L-5846	New	Temporary	Temporary access for construction	
6	L-5840	New	Permanent	Turbine T7 Construction Compound No.2 Overburden Storage Area	
7	L-5840	Existing Field entrance	Permanent	Turbine T8 Telecom Relay Pole	Existing Entrance to be widened
8	L-5840	Existing Forestry Entrance	Permanent	Turbine T9 Borrow Pit No. 2	No works to existing entrance
9	L-5840	Existing Field entrance	Permanent	Turbine T10 Turbine T11 Turbine T12 Borrow Pit No.2	Existing Entrance to be widened. Dry wheel Wash to be installed for the construction period
10	L-5838	Existing Entrance	Permanent	Met Mast	No works to existing entrance
11	L-58442	Existing Field Entrance	Permanent	Tinnalintan Substation Construction Compound No.3	Existing Entrance to be widened

Site entrances of various widths will be required to facilitate the transport of large components, such as turbine blades and tower section to the windfarm, and the transformer to the Tinnalintan Substation during the construction stage of the windfarm.

The entrances will be setback 2.4m from the road and existing trees and hedgerow on either side will be removed/pruned as required in order to provide sightlines in either direction. The size and design of the site entrances is set out in the Table below.

Table 0-3: Size and design of site entrances

Entrance #	Road	Location (townland)	Sight Lines (m)	Width of Splay (m)	Existing Roadside boundary to be removed(m)
1	R694	Byrnesgrove	East - 145m West - 145m	22m	120m
2	L-58451	Ballymartin	cul de sac cul de sac	4.5m	0
3	L-5845	Ballymartin	North - 90m South - 60m	8m	35m
4	L-5846	Ballynalacken	East - 90m West - 90m	44m	27m
5	L-5846	Ballynalacken	East - 90m West - 90m	27m	27m
6	L-5840	Ballynalacken	North - 90m South - 90m	76	76m
7	L-5840	Ballynalacken	North - 90m South - 90m	35m	110m
8	L-5840	Ballynalacken	North - 90m South - 90m	16m	70m
9	L-5840	Ballyouskill	North - 90m South - 90m	52m	52m
10	L-5838	Loughill	North - 90m South - 90m	4.5m	0
11	L-58442	Tinnalintan	East - 60m West - 90m	15m	43m

Traffic Management Measures: Works will take place off the public road from the agricultural/forestry lands adjacent to the road. Advanced warning signs and flagmen will alert traffic to the presence of works. The local roads are very lightly trafficked. During tie in of the Site Entrance with the public road Stop/Go system will be put in place and flagmen will be present to allow vehicle pass the works and keep traffic flowing.

At Site Entrance No. 3 (looking south) and Site Entrance No. 11 (looking north) only 60m sight lines can be achieved. It should be noted that both Site Entrance No. 3 and Site Entrance No. 11 are existing farm track entrances have very low existing traffic levels. These entrances will be used very infrequently (once per month) during the operation phase**.**

The relevant Figure/Drawings are listed in the table below

P200 to P211	Site Entrance Drawings	End of this TMP

3.1.1 Turbine Component Delivery Facilitating Works

Turbine components are transported by sea to Ireland. From the port, special extendable flatbed semi-trailers will be used to transport the components by road using the motorway and national road networks to the vicinity of the windfarm site.

It is expected that the turbine components for Ballynalacken Windfarm will be delivered to the Port of Waterford at Belview. The Port of Waterford has expansive riverside space, ability to handle cargo of exceptional size and has proximity to the motorway network. In February 2024, the Port of Waterford handled the delivery of 80m long turbine blades and turbine towers for a wind farm in County Offaly. Recent (2024) works to adapt the Slieverue and Luffany Roundabouts have been completed to facilitate the transport of large turbine components from the port to the M9 motorway network. Therefore, no further works between the Port of Waterford and Exit 8 (Kilkenny) on the M9 motorway will be required for the delivery of the Ballynalacken Windfarm turbine components.

Turbine components transportation vehicles will use the motorway and national road network from port, joining the M9 and using Exit 8 (Kilkenny) then the N10. The vehicles will then follow the N77 and then the N78 (Kilkenny - Castlecomer Road); travel into Castlecomer town and then turning towards Ballyragget onto the R694 (Castlecomer – Ballyragget - Freshford Road); and then onto the Local Roads (L58451, L5845, L5846 and L5840) as far as the Site Entrances. In order to access the windfarm site some works and activities will be required, mainly along the public road and also in private lands, these are detailed in the subsections below.

3.1.1.1 Haul Route Works & Activities at Kilkenny City (HR1 – HR7)

During the delivery of turbine components to site, the oversized loads will be accompanied by escort vehicles. An Garda Síochána will also be informed prior to turbine component transportation as it will be necessary to temporarily manage traffic as the components pass through junctions etc.

For the Ballynalacken Windfarm, the turbine components will exit the M9 motorway at Exit 8 (Kilkenny). Some minor works and activities will be required at Exit 8 and at roundabouts on the N10 and N77 around Kilkenny City, as outlined in the table below. These works will be temporary works. A description is included of the reinstatement works at each location.

Details of the haul route works are as follows:

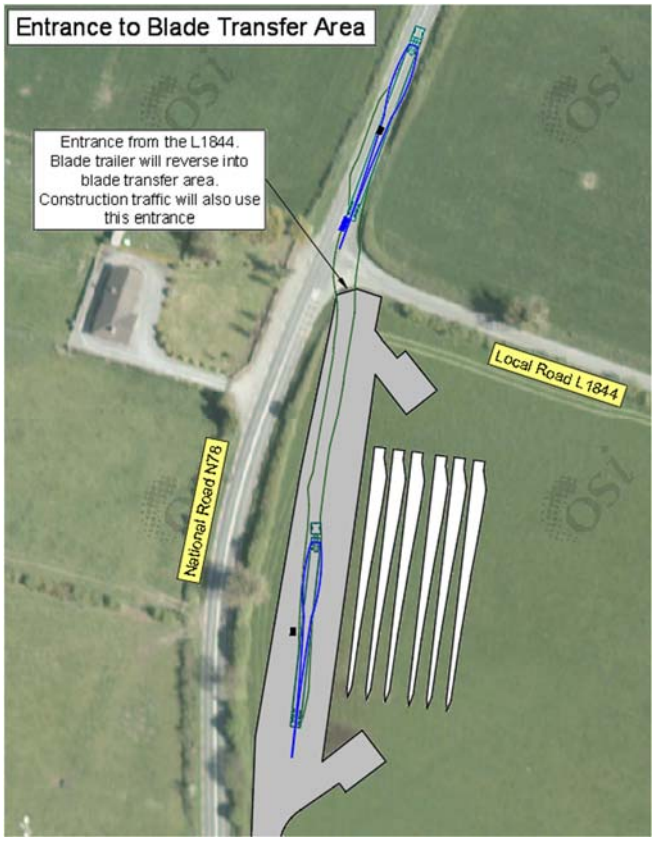
Table 0-4: HR1 to HR7 Haul Route Works & Activities (including reinstatement)

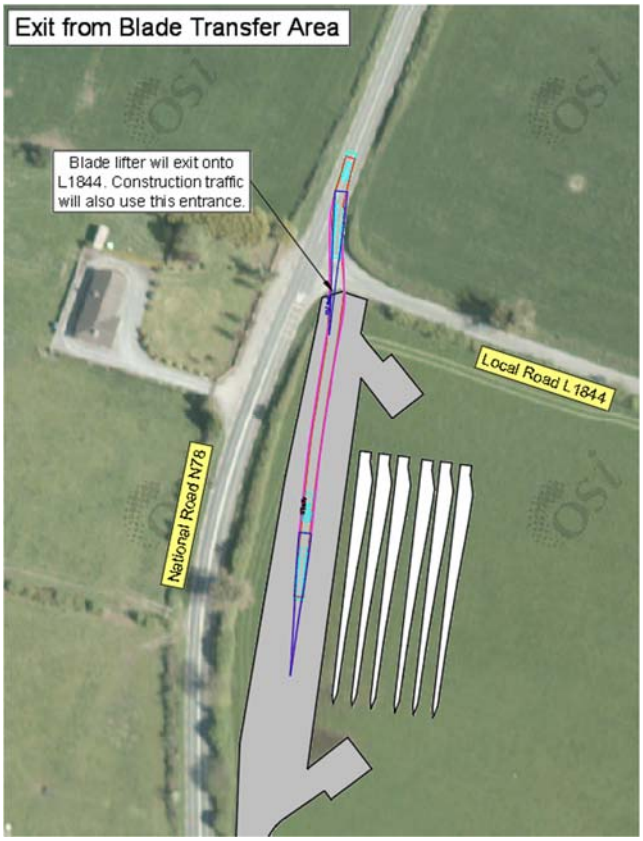
ID - Townland	Locational Context	Description of construction works	Description of reinstatement works	Traffic Management Measures:
HR1 - Rathgarvan or Clifden	Turning off the M9 (Exit 8) onto the N10	Temporary removal of chevron signs.	Chevron signs reinstated immediately following each transportation event.	Advanced warning signs and flagmen will alert traffic to the presence of works in the verge of the off-ramp at Exit 8. No lane closures needed
HR2 – Blanchfieldslands	Roundabout 1 on the N10	Construction of hardcore area on the roundabout	Topsoil will be overlaid on the hardcore area, and reseeded /	Works will take place on the roundabout. Traffic flow will be maintained during works.

ID - Townland	Locational Context	Description of construction works	Description of reinstatement works	Traffic Management Measures:
			replanted	Advanced warning signs and flagmen will alert traffic to the presence of works
HR3 – Blanchfieldslands & Garrincreen	Roundabout 2 on the N10, turning right onto the N77	Temporary removal of road signs.	Immediate reinstatement of road signs following each transportation event.	Works will take place on the roundabout. Traffic flow will be maintained during works. Advanced warning signs and flagmen will alert traffic to the presence of works
HR4 - Newpark Upper	Roundabout 3 continuing straight on the N77	Temporary removal of road signs. Temporary removal of some vegetation and soil from part of the roundabout. Construction of hardcore area on the roundabout	Immediate reinstatement of road signs following each transportation event. Topsoil will be overlaid on the hardcore area following final component delivery, and reseeded / replanted.	Works will take place on the roundabout. Traffic flow will be maintained during works. Advanced warning signs and flagmen will alert traffic to the presence of works
HR5 – New Orchard	Roundabout 4 continuing straight on the N77	Temporary removal of road signs. Temporary removal of some vegetation on part of the roundabout. Construction of hardcore area	Immediate reinstatement of road signs following each transportation event. Topsoil will be overlaid on the hardcore area following final component delivery, and reseeded / replanted.	Works will take place on the roundabout. Traffic flow will be maintained during works. Advanced warning signs and flagmen will alert traffic to the presence of works
HR6 - Baun	Roundabout 5, taking a right and continuing straight on the N77	Temporary removal of road signs	Immediate reinstatement of road signs following each transportation event.	Works will take place on the roundabout. Traffic flow will be maintained during works. Advanced warning signs and flagmen will alert traffic to the presence of works
HR7 - Dunmore East	Roundabout 6, leaving the N77 and continuing straight onto the N78	Temporary removal of road signs. Temporary removal of some vegetation on part of the roundabout, Construction of hardcore area	Immediate reinstatement of road signs following each transportation event. Topsoil will be overlaid on the hardcore area following final component delivery, and reseeded / replanted.	Works will take place on the roundabout. Traffic flow will be maintained during works. Advanced warning signs and flagmen will alert traffic to the presence of works

3.1.1.2 Blade Transfer Area (HR 8)

In order to facilitate the transport of the turbine blades through Castlecomer town, it will be required to change the type of trailer transporting the turbine blades. A temporary hardstanding area (2000m^2) will be constructed in an agricultural grassland field adjacent to the N78, and the turbine blades will be lifted by crane from the extendable flatbed semi-trailers onto a blade-lift trailer. Construction traffic for this temporary hardstanding area will access the area from the Local Road L1844. The blade trailers will also access the Blade Transfer Area from the L1844. This manoeuvre will be controlled under Garda escort and therefore sightlines will not need consideration. Any vegetation removal will therefore be kept to a minimum. There will be some small amount of hedgerow removal at the entrance on the L1844 (15m). The existing field gates will also be temporarily widened to 15m.





Following the completion of blade deliveries, topsoil will be overlaid on the hardcore area, and the area will be reseeded with grass species. Post and rail fence will be installed along original alignment of the roadside boundary on the L1844 road.

Traffic Management Measures:

- Vehiclular maneuvers at entering and exiting HR8 will be done under Garda excort.
- The hardcore area will be sufficiant to accommodate the 3 no. blade trailer convoy, so blade trailers are not left standing on the National Road
- The delivery of turbine components are expected to take place overnight or during off-peak hours due to the oversize nature of some of the components such as the blades
- Access point is from the Local Road L1844

Haul Route Works at Castlecomer and along the R694 (HR9 – HR11)

Works and activities will be required in Castlecomer town and along the R694 to facilitate the transportation of the turbine components.

Table 0-5: HR9 to HR11 Haul Route Works & Activities (including reinstatement)

ID - Townland	Locational Context	Description of construction works	Description of reinstatement works	Traffic Management Requirments
HR9 - Castlecomer	N78 driving straight onto the R426 (Chatsworth Row) and then reversing back onto the N78 (High Steet) to continue onto the R694 (Barrack St)	Temporary removal of street furniture, Temporary removal of overhead lines and poles	Immediate reinstatement of street furniture following each transportation event. Overhead lines and poles will be reinstated following the completion of blade deliveries. The services will be rerouted through the existing electricity/telecoms network while works are ongoing.	Traffic flow will be maintained during street furniture, overhead lines and poles removal works. Advanced warning signs and flagmen will alert traffic to the presence of works During turbine deliveries an an All Stop traffic control will be implemented. Any single vehiclular movement through HR9 is expected to take less that 10 mins and during off peak or overnight.
HR10 - Castlecomer	Continuing straight on the R694. Haul Route Works occur in a narrow finger of land between the R694 and L5853 roads.	Temporary removal of road signs and street furniture, Temporary removal of overhead lines, Temporary removal of vegetation (shrubs), Construction of hardcore area	Immediate reinstatement of road signs and street furniture following each transportation event. Overhead lines will be reinstated following the completion of blade deliveries. The services will be rerouted through the existing electricity/telecoms network while works are ongoing. Topsoil will be overlaid on the hardcore area, and reseeded / shrubs replanted.	Traffic flow will be maintained during street furniture, overhead lines and poles removal works and hardcore area construction. Advanced warning signs and flagmen will alert traffic to the presence of works During turbine deliveries an an All Stop traffic control will be implemented. Any single vehiclular movement through HR10 is expected to take less that 10 mins and during off peak or overnight.
HR11 - Castlecomer, Donaguile, and Glenmagoo or Firoda Lower	Continuing straight on the R694	Trimming of tree branches along the R694	None required	Hedge cutting works along the R694 will be done under Mobile Lane Closure during the short duration of works. Traffic flow will be maintained. Advanced warning signs and flagmen will alert traffic to the presence of works

The turning manoeuvre in Castlecomer Town (HR9) is illustrated on **Figure TMP 4.9** at the back of this chapter.

Junction Works in the vicinity of the Windfarm Site HR12 – HR13

In the area of the Ballynalacken Windfarm, a number of works in private lands and along the public road corridor will be required to facilitate the delivery of the turbine components. These works include the provision of a temporary hardstanding areas in agricultural lands adjacent to public road junctions (HR12, HR13).

Table 0-6: HR12 and HR13 Haul Route Works & Activities (including reinstatement)

ID - Townland	Locational Context	Description of construction works	Description of reinstatement works	Traffic Management Requirments
HR13 - Ballymartin	Leaving the L-58451 and turning right onto the L-5845.	This junction to be temporarily widened into the corner of the agricultural field on the north side of the junction Construction of hardcore area. Roadside boundary bank and tree removal. Temporary removal of overhead lines.	Topsoil will be overlaid on the hardcore area, and reseeded with grass species. Post and mesh fence installed along original road boundary alignment. Telephone pole re-erected outside hardcore area and overhead line reinstated. The service will be rerouted through the existing electricity/telecoms network while works are ongoing.	Works will take place off the public road from the agricultural land adjacent to the road. Advanced warning signs and flagmen will alert traffic to the presence of works. These roads are very lightly trafficked. Flagmen will be present to allow vehicle pass the works and keep traffic flowing.
HR12 - Ballymartin	Continuing straight on the L-5845 onto the L-5840 (for the north side of the site) or turning right onto the L-5846 (for T5 and T6 side of the site)	Construction of hardcore area at crossroads on the northeast and southeast corners of the crossroads - fence and gate removal, road sign removal	Topsoil will be overlaid on the hardcore area, and reseeded with grass species. Post and mesh fence installed along original alignment. Road signs will be reinstated	Works will take place off the public road from the agricultural land adjacent to the road. Advanced warning signs and flagmen will alert traffic to the presence of works. These roads are very lightly trafficked. Flagmen will be present to allow vehicle pass the works and keep traffic flowing.

3.1.2 Road Widening, Internal Cable Link and Internal Windfarm Cable works

The widening of the public road is required on the L5845 (750 linear meters), L5840 (2150 linear meters) and the L5846 (850 linear metres). Each of these roads will be widened by an average of 1 meter to provide a running width of 4.5 meters for the turbine component haulage. Road widening works will involve the permanent removal of approximately 0.5m of roadside verge and underlying soils on both sides of the existing road carriageway, and the laying of hardcore along the excavated verges to create a suitable load-bearing surface. The Internal Cable Link crosses the L5845 in one location and within the verge along the L58422. The Internal Windfarm Cable works cross the L5846 at 2 no. locations.

Traffic Management Measures: Works will take from the public road. Advanced warning signs and flagmen will alert traffic to the presence of works. These roads are very lightly traffic. When a car arrives at the works location a Stop/Go system will be in place. Machinery will then move out of the way of the traffic to allow the vehicle to pass the works. At Internal cable crossing locations, due to the low volume of traffic on the road, steel plates will be laid over the trench to allow for traffic to pass.

3.1.3 Ballynalacken Grid Connection

The Ballynalacken Grid Connection will be 1961m in length, comprising underground cables and Joint Bays, connecting the Tinnalintan Substation to the national electricity system at the existing EirGrid Ballyragget Substation. The Ballynalacken Grid Connection cabling will be laid under hardcore area (23m) at the Tinnalintan Substation; under private access road (523m); under the local road L58442 (393m), under the Regional Road R432 (907m), and under the existing hardcore area (115m) associated with the EirGrid Ballyragget Substation.

Typical Trenching Works set-up

Traffic Management Measures: Works will require a one lane closure along both the R432 and the L58442. Advanced warning signs and flagmen will alert traffic to the presence of works. Works will also be completed at offpeak times over a 2 weeks period.

4 General Traffic Management Measures

4.1 Surveying, Monitoring Measure and Mitigation Measures applicable to the TMP

SM No.	Surveying & Monitoring Measure (SM)
SM09	Confirmatory condition surveys involving pre-construction and post-construction inspections, high-definition video surveys and FWD surveys will be undertaken along the routes of concentrated construction traffic between the R694 and the windfarm Site Entrances and along the route of the Internal Cable Link and of the Ballynalacken Grid Connection route.
SM10	Confirmatory consultations with Uisce Eireann, Eir, ESB Networks, and Gas Networks Ireland and confirmatory ground surveys at service locations will be carried out ahead of, and throughout, the cabling, site entrance and haul route works in close proximity to existing overhead and underground services.
SM14	A suitably qualified engineer will supervise all windfarm site excavations and construction works.
SM23	During working hours, the construction contractor will monitor dust control methods. The Environmental Clerk of Works will monitor weather forecasts for dry and windy conditions and will carry out weekly on-site and off-site inspections to monitor dust caused by the construction works. Public roads Construction Works Areas will be regularly inspected for cleanliness and regular dust soiling checks of surfaces within 100m of site boundary will also be carried out. The frequency of monitoring will be increased when construction activities with a high potential to produce dust are being carried out and during prolonged dry or windy

SM No.	Surveying & Monitoring Measure (SM)
	conditions.
SM24	All plant and machinery which will be used during construction will be fit for purpose and in good working order prior to mobilisation to works areas

MM No.	Mitigation Measure (MM)
MM04	The excavation of materials will be completed in accordance with best practices for the management and treatment of such materials. (i.e. British Standards BS6031:2009 Code of Practice for Earthworks).
MM05	During windfarm construction works, excavations will be backfilled as soon as is possible.
MM08	Along the cable route on the public road, there will be no storage of overburden and all excavations from road trenches will be removed to licensed waste facilities in accordance with the Waste Management Plan. The excavated material will be covered during transportation to prevent spillages and reduce dust.
MM46	To ensure that local roads are kept clean, and site roadways are clear of mud, a road sweeper and dry wheel washes will be used. The dry wheel washes will be installed near the entrance to the public road at Site Entrance No.s 4, 5, and 9. All HGVs and other delivery vehicles, will drive over the wheel wash before leaving the site. The loose debris will be removed regularly from under the dry wheel washes, this material will be removed off site to a licensed facility.
MM47	Any loads of material which have the potential for dust emissions (such as aggregate) will be covered during transportation.
MM48	Construction operations shall generally be restricted to between 0700-1800hrs Monday to Friday, and 0700-1400hrs on Saturdays. Site activities which are likely to create high levels of noise or vibration will be limited to these hours of operation. However, to ensure that optimal use is made of good weather period or at critical periods within the programme (i.e., concrete pours) or to accommodate delivery of large turbine component along public routes it could be necessary on occasion to work outside of these hours.
MM49	A Community Liaison Officer (CLO) will be appointed. The CLO will liaise with and keep the local community up-to-date with relevant construction work schedules, through the use of signage at selected Site Entrances, letter drops to nearest neighbours and through the Project website which will be kept up-to date. The CLO will be the point of contact for local residents for matters relating to noise and vibration. The Environmental Clerk of Works will liaise with the CLO and will be the point of contact between the contractor/developer and the Local Authority regarding any matters relating to noise or vibration from the construction works.
MM57	'Goal Posts' will be used to identify and highlight the height of nearby overhead lines; all excavation works and use of large plant in close proximity to services will be supervised by a banksman; and a stock of repair materials will be kept at active works locations along the public road.
MM58	The roadside boundary will be maintained during the construction phase and following the removal of the boundary to provide a widened transport area or to provide sightlines, a post and mesh boundary fence will be erected. This boundary will be removed immediately before the transportation of abnormal loads and reinstated immediately after the transportation has been completed.
MM59	Hedgerows and roadside vegetation within the visibility splays will be trimmed and maintained to ensure proper visibility of site entrances.

MM No.	Mitigation Measure (MM)
MM60	Cabling works within the public road network and public road widening will be carried out in co-ordination with Kilkenny County Council and in accordance with "Guidelines for the Opening, Backfilling and Reinstatement of Openings in Public Roads (Department of Transport, Tourism & Sport, 2017).
MM61	Any damage to structures or road pavements along cable routes and along concentrated construction haul routes, because of the construction works and deliveries to the works areas, will be repaired to at least as good a condition as pre-works.
MM63	Flag-men will be used on public roads which will be subject to one lane closure. These flagmen will control the movement of traffic on the public road, so that road users can continue to use the public road network in a in a safe and efficient manner. The works will be carried out according to the Traffic Management Plan which forms part of the Ballynalacken Windfarm Project Environmental Management Plan.
MM64	Local residents likely to be affected by road works, will be kept up to date on works schedules by the Community Liaison Officer.
MM65	The largest traffic volumes are associated with the concrete pours for the turbine foundations. No other deliveries to the windfarm will be scheduled to occur on the same days as the concrete pours.
MM66	The site entrance works, haul route work and road widening works on the L58451, L5845, L5846 and L5840 will not be carried out during peak delivery periods. Where feasible to do so, the road widening works will be carried out prior to the main construction period at the windfarm site. In addition, any works on the public road will be completed under licence from Kilkenny County Council Road Section.
MM67	The works along the cable routes on the Local Road L58442 will be carried out during off-peak hours.
MM68	Trenches will be excavated to a distance of c.20m ahead of the ducting works, instead of 50m, where trenches are likely to block access to a property. In addition, steel plating will be available to cover the open trench to ensure access to property is maintained.
MM69	On the L58442 local road along the Internal Cable Link, smaller plant and machinery will be used and this plant and machinery will move off the road (i.e. into a field entrance or gateway) to facilitate access to local residents and maintain access to properties along the full length of the road. The Community Liaison Officer will liaise with local residents in order to determine the peak traffic hours for the local road, and the construction schedule for the Internal Cable Link will reflect the peak usage patterns of the road so that works can occur outside of peak usage periods.
MM70	Service owners of overhead lines in Castlecomer town will be consulted prior to the commencement of haul route works in the town, to request that the overhead lines are rerouted or realigned so that the lines do not impede the turbine component transportation. End users will be notified of any planned outages.

4.2 Signage

4.2.1 Signage for Construction Traffic

General construction traffic will be most concentrated in the vicinity of the windfarm Site Entrances, with peak periods expected during the road building phase and during turbine foundation concrete pours. In addition, construction traffic will occur on the roads subject to trenching and joint bay excavation works. Signage will be erected per;

- **Informational signage** will be erected to provide an overview of the construction traffic timetable and will include contact details for the Environmental Clerk of Works and the Community Liaison Officer. The signs will be provided at the entrances accessing the construction compounds - Site Entrance No. 4, Site Entrance No. 6 and Site Entrance No. 11. Up to date information will also be provided on the project website www.ballynalackenwindfarmplanning.ie

- **Directional signage** will be installed along the construction materials haul route to the Site Entrances. There will be directional signs on the Castlecomer-Ballyragget Road (R694), the Ballyragget – Ballinakill Road (R432) and on the Local Roads in the vicinity of the site.

- **Advance Warning signage** will be erected on approaches to site entrances and on the approaches to road widening works locations and to cabling works on the public road. The placement of this signage will be designed based on the recorded 85th percentile traffic speeds, or the posted limit, whichever is the higher.

Signage will be according to the Chapter 8: Temporary Traffic Measures and Signs for Roadworks of the Department of Transport, Tourism and Sport Traffic Signs Manual, August 2019.

The signage layout will take the individual feature of the site into consideration. All signs will be manufactured usin retro-reflective material and will be a minimum of 750mm X 750mm size. All cone will be 1m high and have reflector sleeves for additional visibility and sand bags will be used to weight down cones.

All temporary traffic signs will be placed such that they:

- Do not obstruct sight lines,
- Do not obstruct other signs, and
- Are themselves not obstructed by other signs.

Where signs could be obscured by hazards, hills or dips in the road, additional warning signs will be put in place.

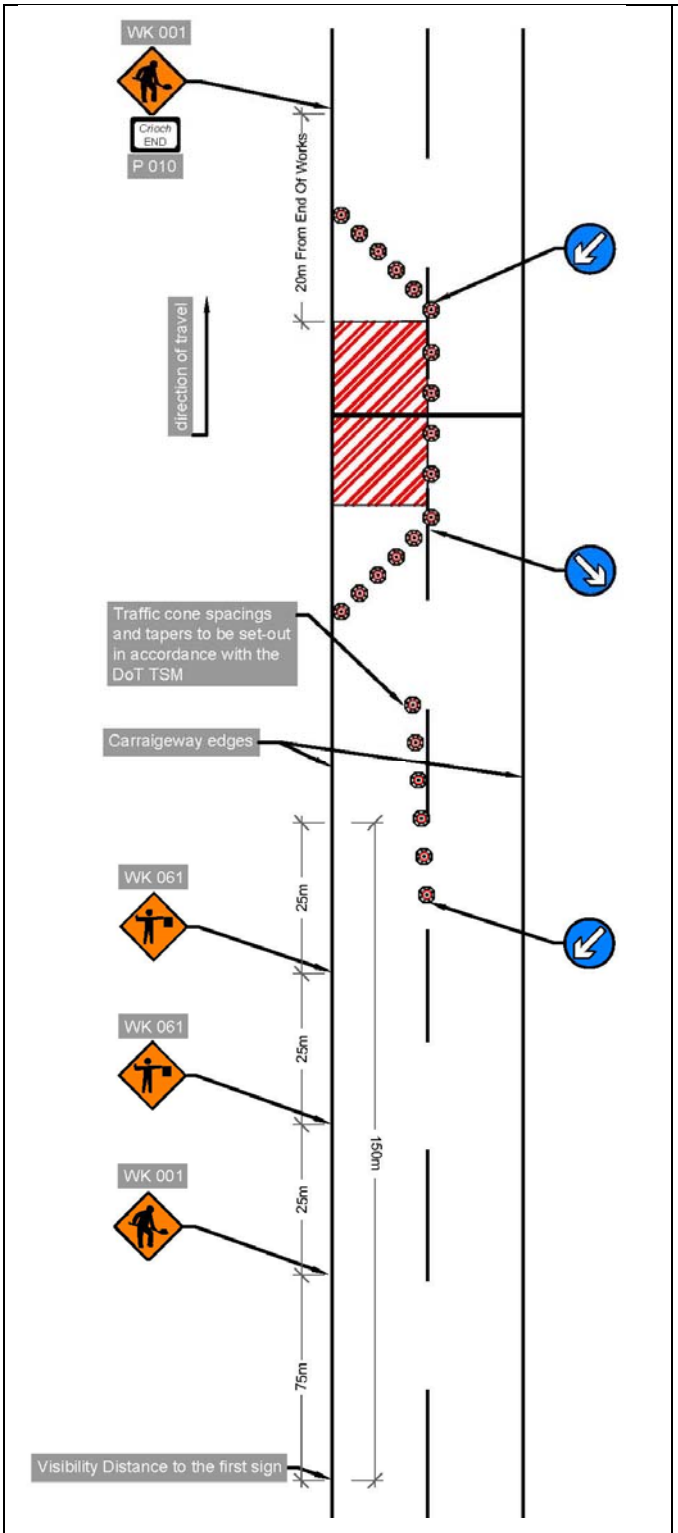
4.3 On-going communication with Kilkenny County Council Roads Section

The Project Manager for the construction of Ballynalacken Windfarm wil ensure that close communication with Kilkenny County Council Roads Section will be maintained throughout the construction stage. Such communication will include:

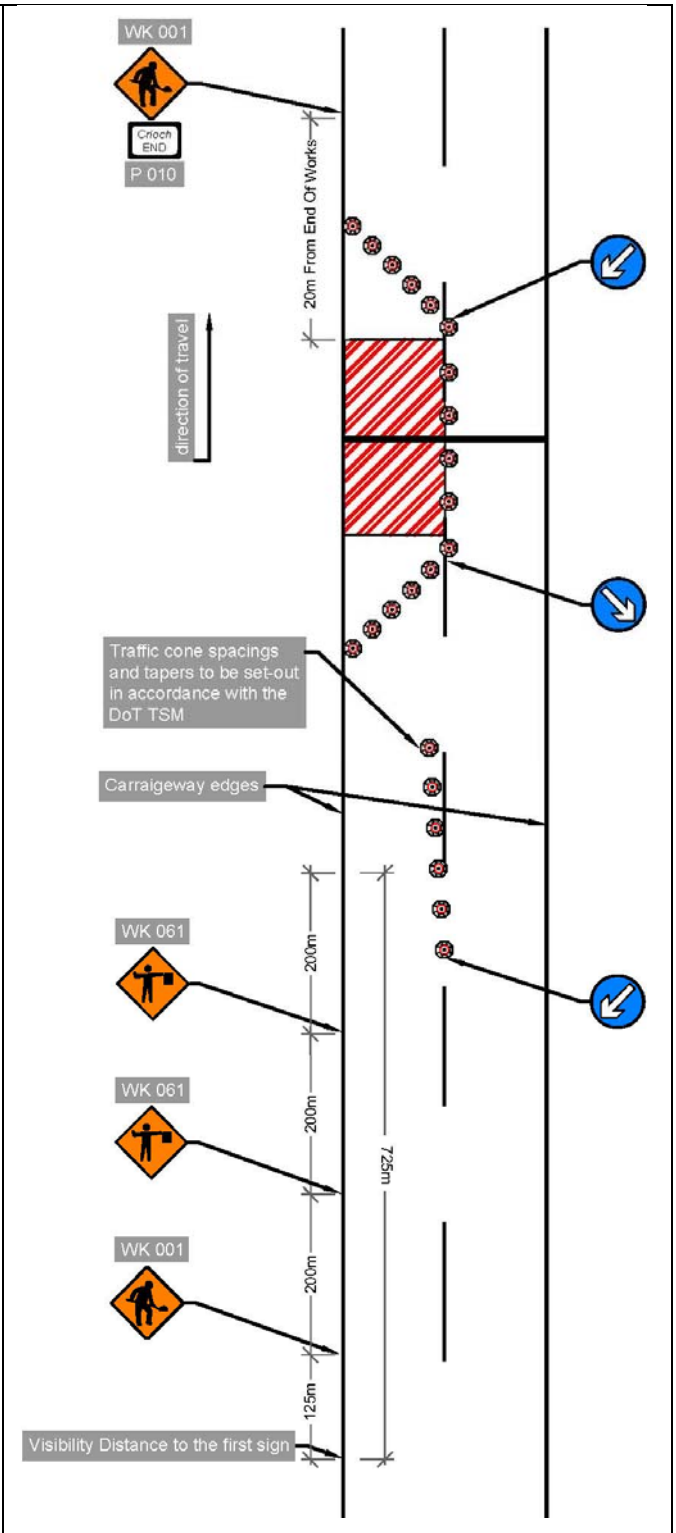
- Prior to commencement of construction the Project Manager and the Environmental Clerk of Works will meet with Kilkenny County Council Roads Section and agree any specific traffic requirements that they may have or that are subject to planning condition.
- Ongoing reporting relating to the condition of the road network and updates to construction programming will be provided to Kilkenny County Council.

4.3.1 Advance Warning Signage for Road Works

Advance warning signage will be erected on both approaches to road works locations. See below figures. The placement of this signage has been designed based on the recorded 85th percentile traffic speeds, or the posted limit, whichever is the higher.



Advance Warning Signage for Road Works on 50km/hr Roads



Advance Warning Signage for Road Works on 80km/hr Roads

4.4 Additional TMP Measures

4.4.1 Concealed Drain at Entrance

Permanent concealed drains will be installed at the Site Entrances at the public road to prevent water runoff from construction/site areas flowing onto the road.

4.4.2 Maintaining Access to Properties

Where works take place in the vicinity of a property entrance (house/farms/businesses/sports facilities), traffic flow will be maintained by placing a steel plate over trench or machinery moved to allow traffic to pass over.

5 Emergency Services

Emergency services vehicles will have priority over construction traffic vehicles at all times.

The telephone numbers for the Emergency Services are listed in the table below;

Emergency Contact Numbers

Emergency Service	Contact Number
Fire Brigade, Gardaí and Ambulance	Dial 112
Local hospital (St. Lukes Hospital Kilkenny)	Dial (056) 7785000
Utilities - ESB Networks	Dial 1850 372 999
Utilities – Eir	Dial 1850 245 424
PSCS appointed by the construction contractor for the windfarm	TBC

These numbers will be prominently posted at the site entrances and in the site offices.

If an incident occurs due to construction traffic, the PSCS (Project Supervisor Construction Stage) will provide all necessary assistance to the Gardaí, Ambulance and Fire Brigade services and local authority to deal with the emergency.

In the case of an emergency on the public road, the following incident management procedure will be followed:

- Emergency Services will be contacted immediately by dialling 112
- Exact details of the emergency / incident will be given by the caller to the emergency line operator to allow them to assess the situation and respond in an adequate manner
- The emergency will then be reported to the PSCS
- Flagmen will be deployed to warn and slow down any oncoming traffic
- The PCSC will notify all other construction traffic in the area of the incident, and
- The PCSC will ensure that personnel are available to guide the emergency services to the accident location.

All incidents will be recorded by the PSCS and remedial measures taken where appropriate. The incident management procedure will be part of the induction of all personnel coming onto the construction site including HGV drivers delivering to the site.

6 Figures and Mapping

Traffic Management Plan

TMP 1 - Construction Materials Haulage Route

Legend:

- Ballynalacken Windfarm Project
- L5845 Public Road Identification Number
- Construction Materials Haulage Route

HR8 - Blade Transfer Area

Temporary Entrance from the local road L1844

N78

Site Entrance No.10

L5838

T12

T11

Site Entrance No.9

T10

Borrow Pit No.2

L5840

T9

Site Entrance No.8

Site Entrance No.4

L5846

T8

Site Entrance No.7

Site Entrance No.5

T6

Construction Compound No.1

Site Entrance No.6

T7

Borrow Pit No.1

Construction Compound No.2

T5

T4

Site Entrance No.3

L5846

T3

L5845

T2

L58451

Site Entrance No.2

T1

R694

L58442

Site Entrance No.11

Internal Cable Link

Ballynalacken Grid Connection

R432

Construction Compound No.3

Site Entrance No.1

R694

R694

R694

Eirgrid Ballyragget Substation

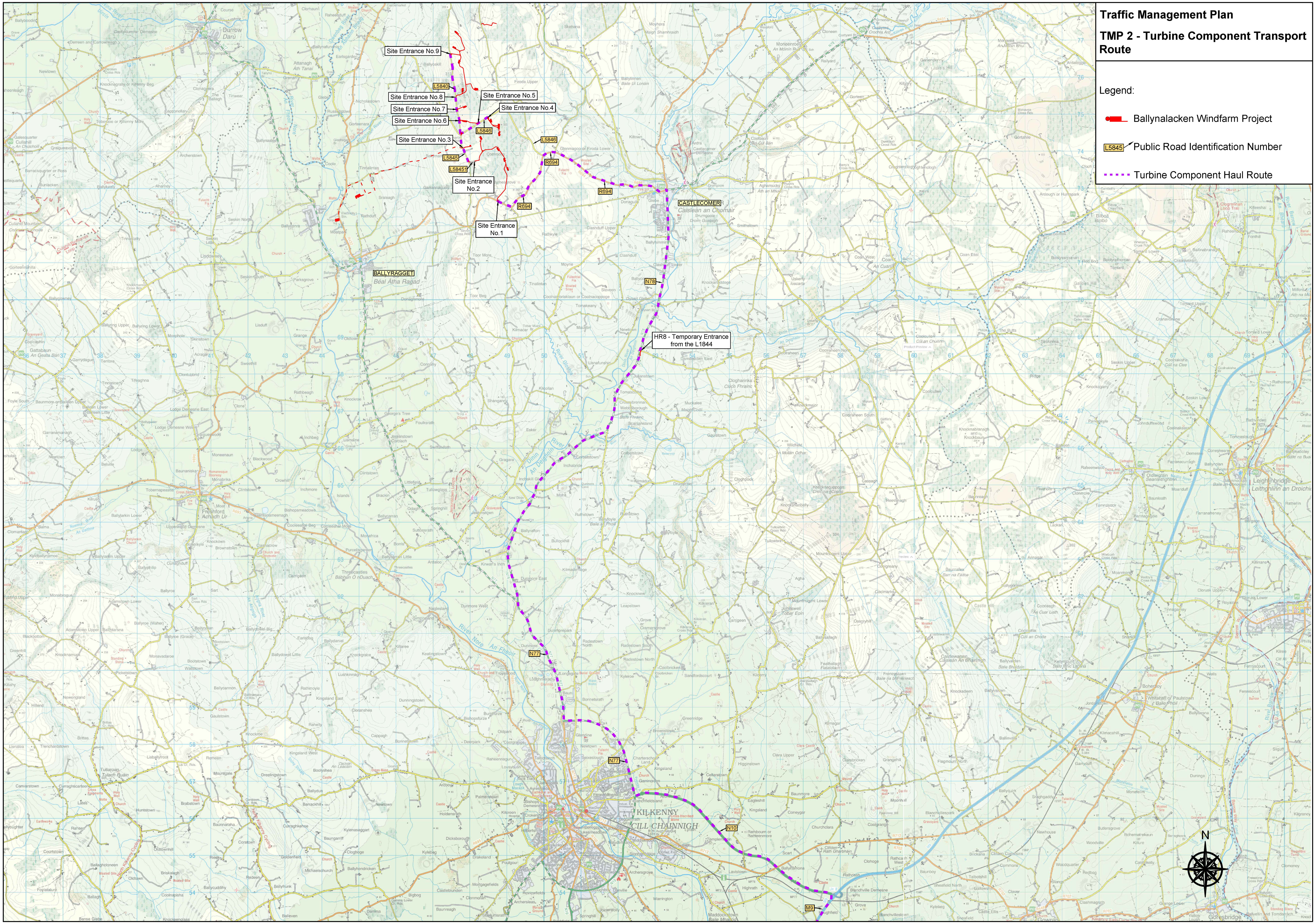
CASTLECOMER

BALLYRAGGET

Béal Átha Ragad

N78

N


Traffic Management Plan
TMP 2 - Turbine Component Transport Route
Legend:
Ballynalacken Windfarm Project
L5845 Public Road Identification Number
Turbine Component Haul Route
Site Entrance No.9
L5840
Site Entrance No.8
Site Entrance No.7
Site Entrance No.6
Site Entrance No.5
Site Entrance No.4
L5846
Site Entrance No.3
L5845
L58451
Site Entrance No.2
Site Entrance No.1
L5846
R694
R694
R694
CASTLECOMER
Caisleán an Chomair
BALLYRAGGET
Béal Átha Ragad
N78
HR8 - Temporary Entrance from the L1844
N77
N77
KILKENNY
CILL CHAINNIGH
N10
M9
N

Traffic Management Plan

TMP 3 - Location of Road Works

Legend:

- Ballynalacken Windfarm Project
- Ballynalacken Windfarm Project (Haul Route Works)
- Public Road Widening Works
- Houses
- L5845 Public Road Identification Number

Ballynalacken Grid Connection

Eirgrid Ballyragget Substation

Site Entrance No.11

Internal Cable Link

Public Road Widening Works

Site Entrance No.9

Site Entrance No.8

Site Entrance No.7

Site Entrance No.6

Site Entrance No.4

Site Entrance No.5

Site Entrance No.3

Site Entrance No.2

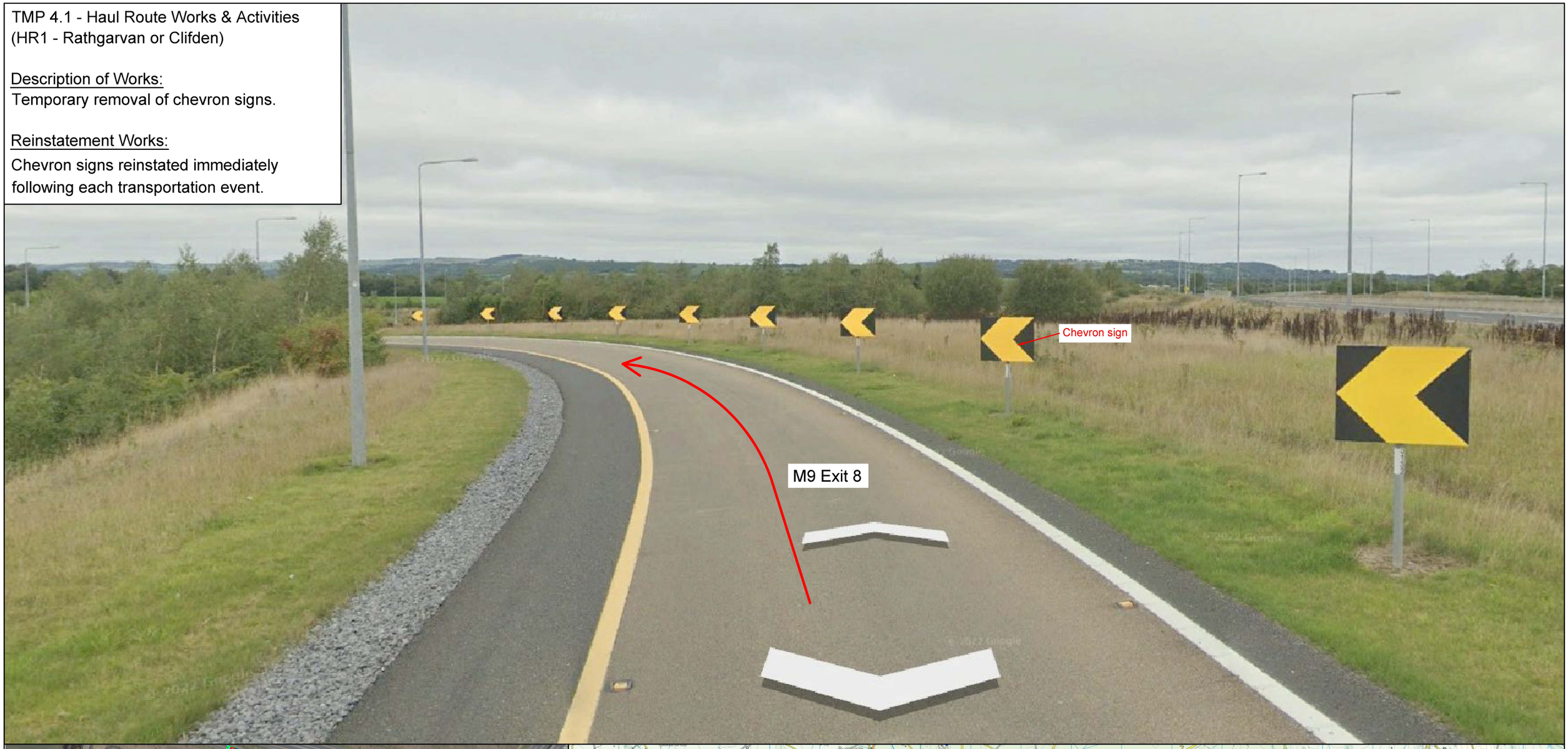
Site Entrance No.1

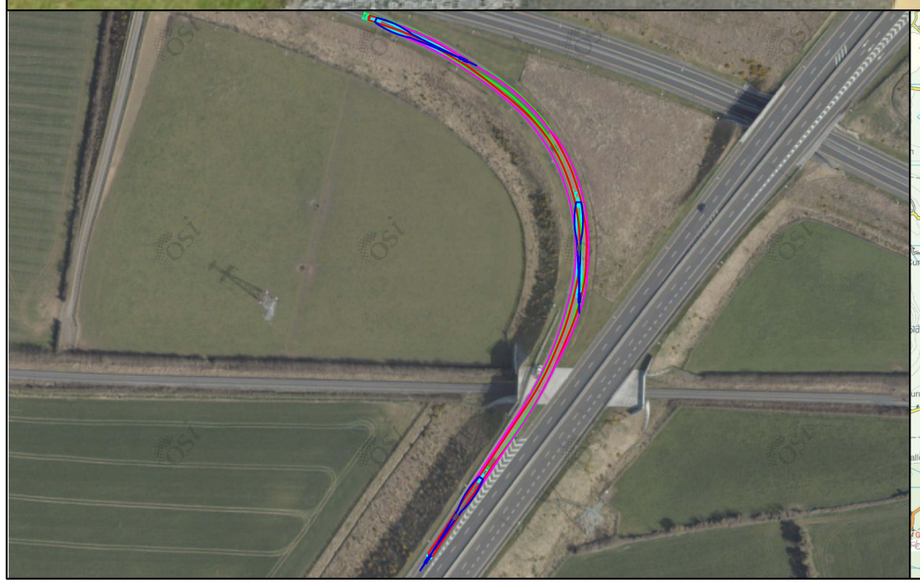
HR8 - Temporary Entrance from the L1844

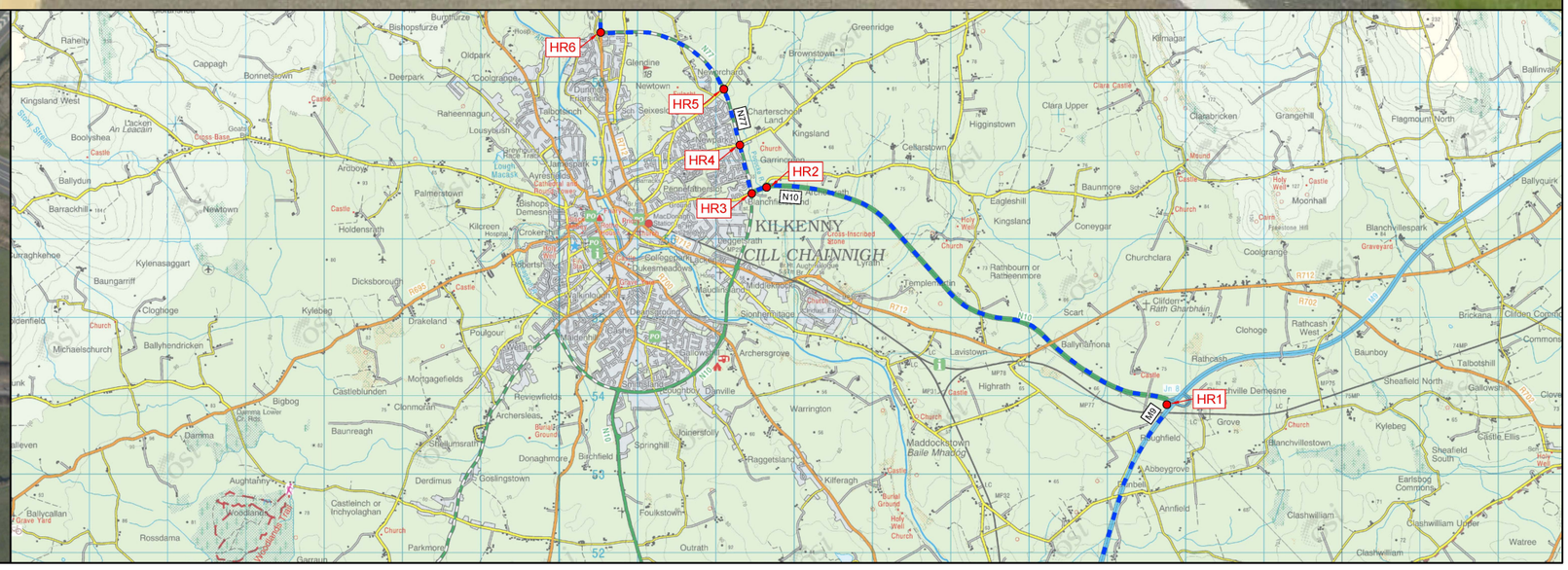
TMP 4.1 - Haul Route Works & Activities
(HR1 - Rathgarvan or Clifden)

Description of Works:
Temporary removal of chevron signs.

Reinstatement Works:
Chevron signs reinstated immediately following each transportation event.



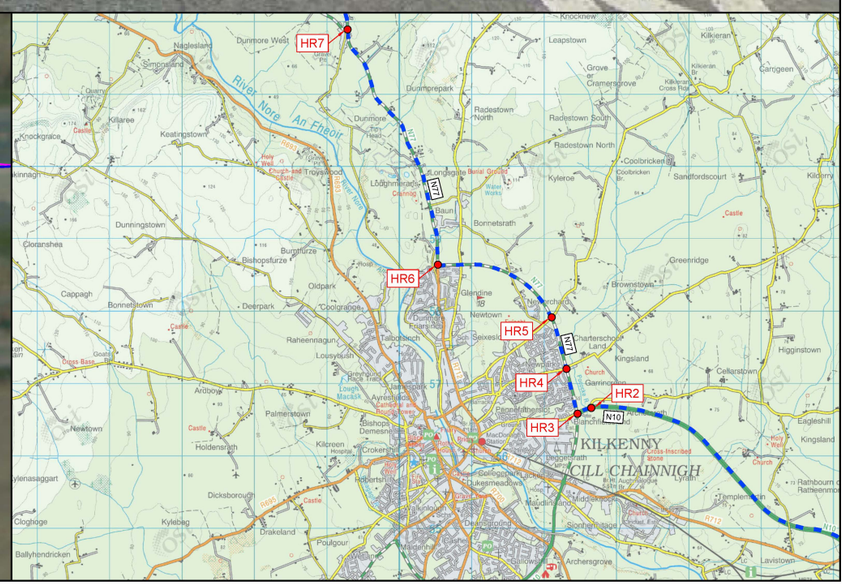




TMP 4.2 - Haul Route Works & Activities
(HR2 - Blanchfields)

Description of Works:
Construction of hardcore area on the roundabout.

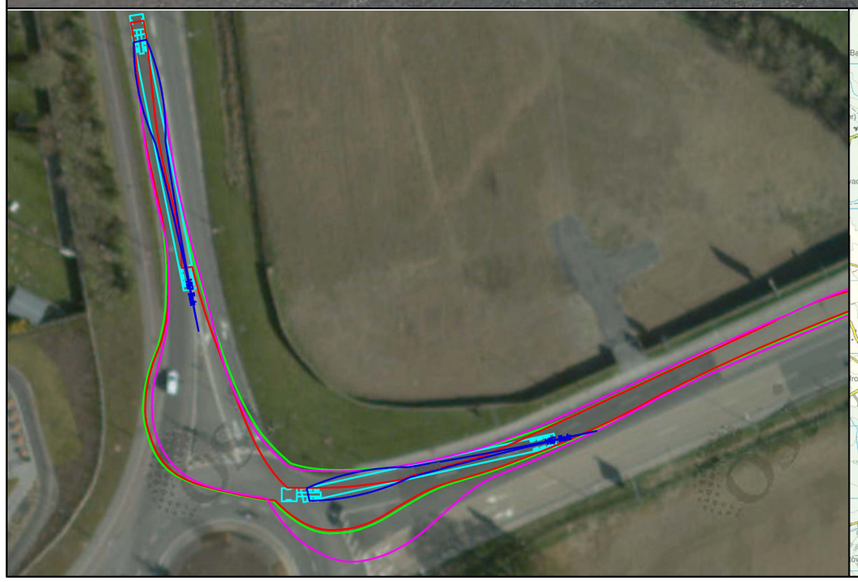
Reinstatement Works:
Topsoil will be overlaid on the hardcore area, and reseeded / replanted.



TMP 4.3 - Haul Route Works & Activities
(HR3 - Hebron Road Roundabout)

Description of Works:
Temporary removal of road signs.

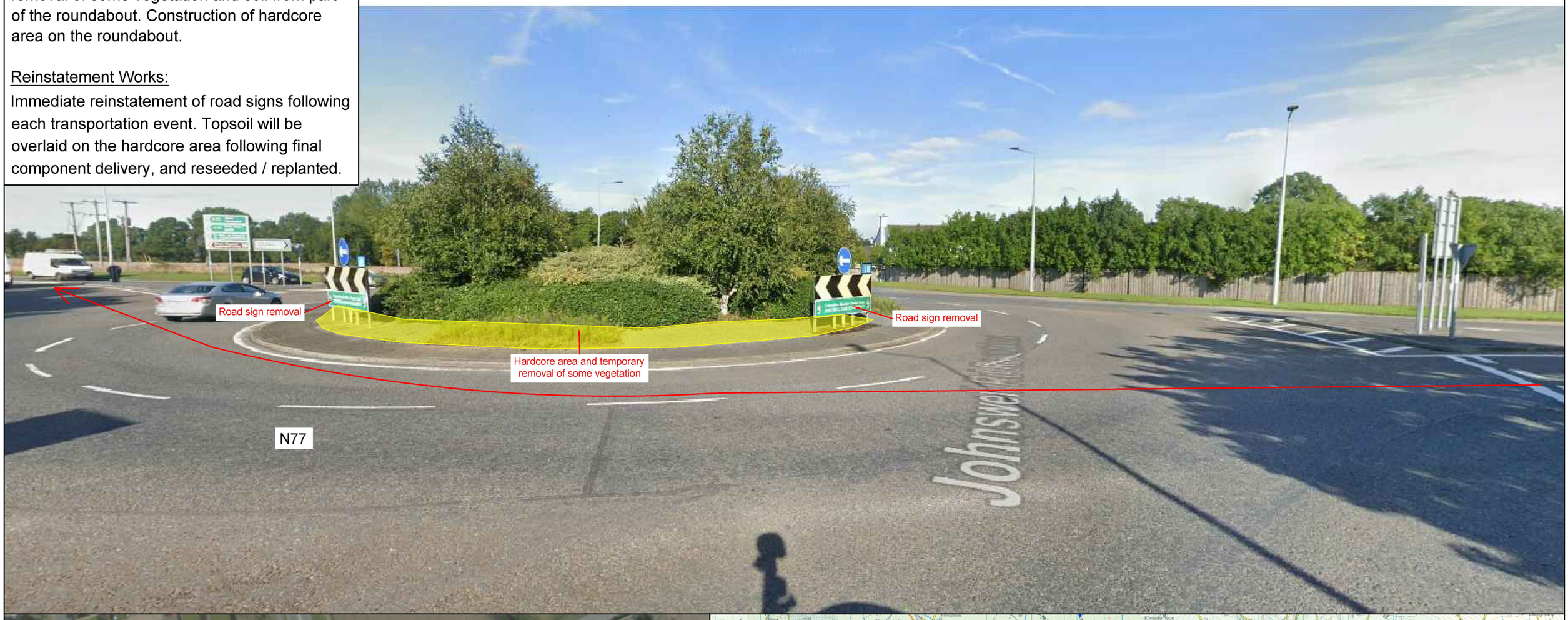
Reinstatement Works:
Immediate reinstatements of road signs following each transportation event.

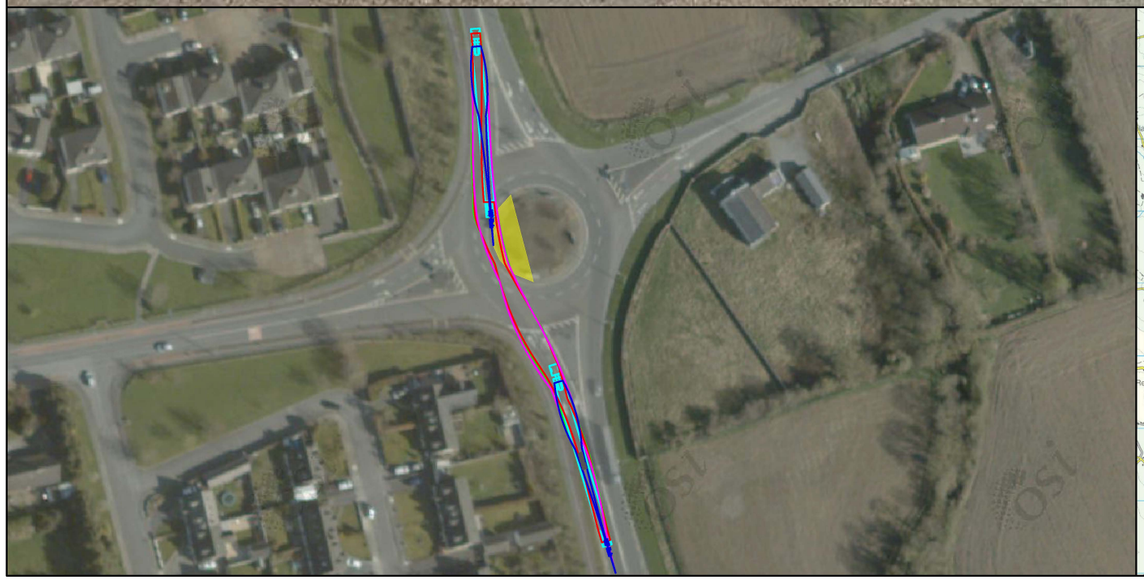


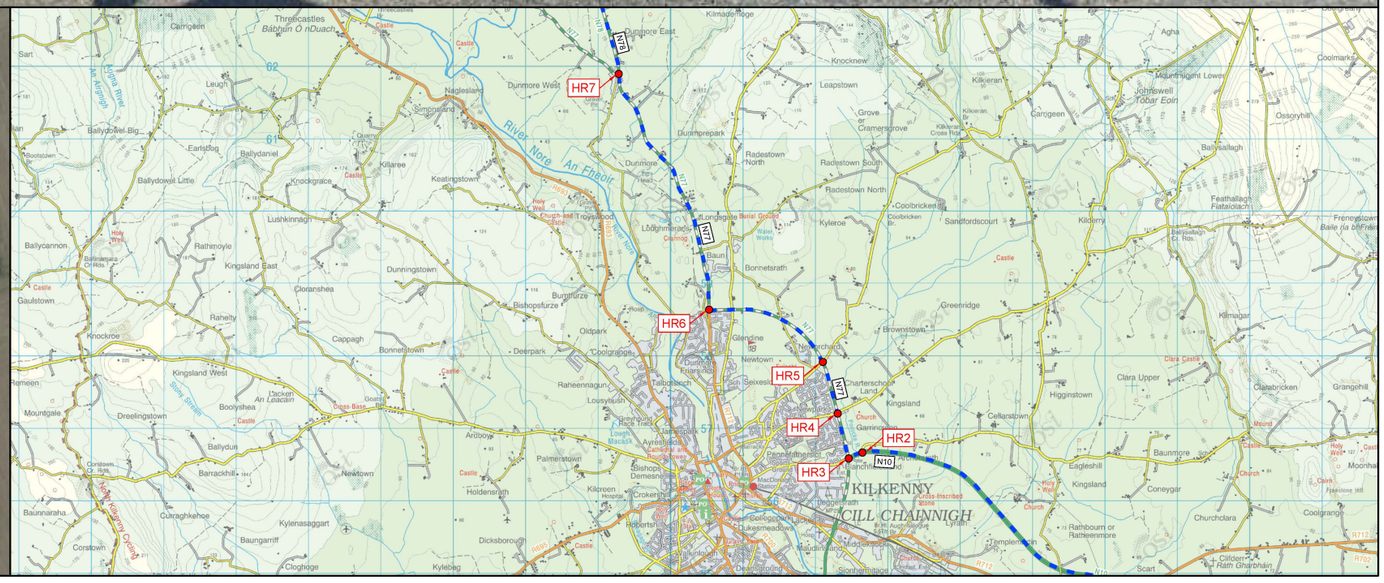
TMP 4.4 - Haul Route Works & Activities
(HR4 - Johnswell Road Roundabout)

Description of Works:
Temporary removal of road signs. Temporary removal of some vegetation and soil from part of the roundabout. Construction of hardcore area on the roundabout.

Reinstatement Works:
Immediate reinstatement of road signs following each transportation event. Topsoil will be overlaid on the hardcore area following final component delivery, and reseeded / replanted.







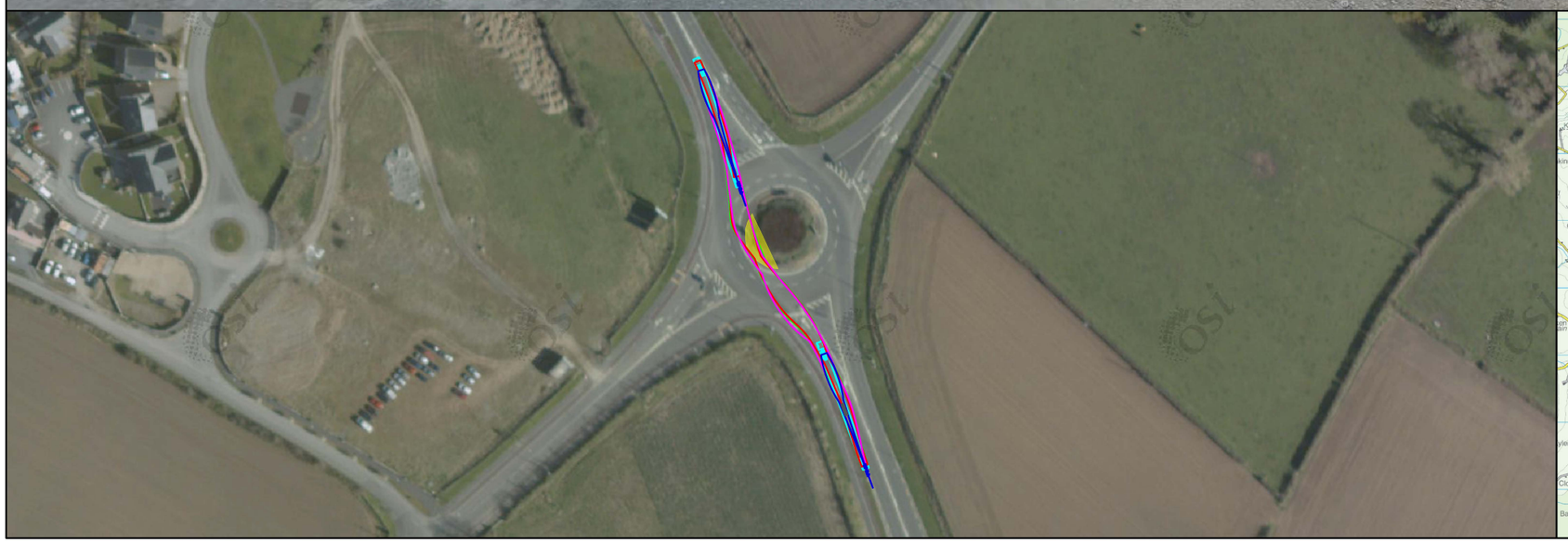
TMP 4.5 - Haul Route Works & Activities
(HR5 - New Orchard Road Roundabout)

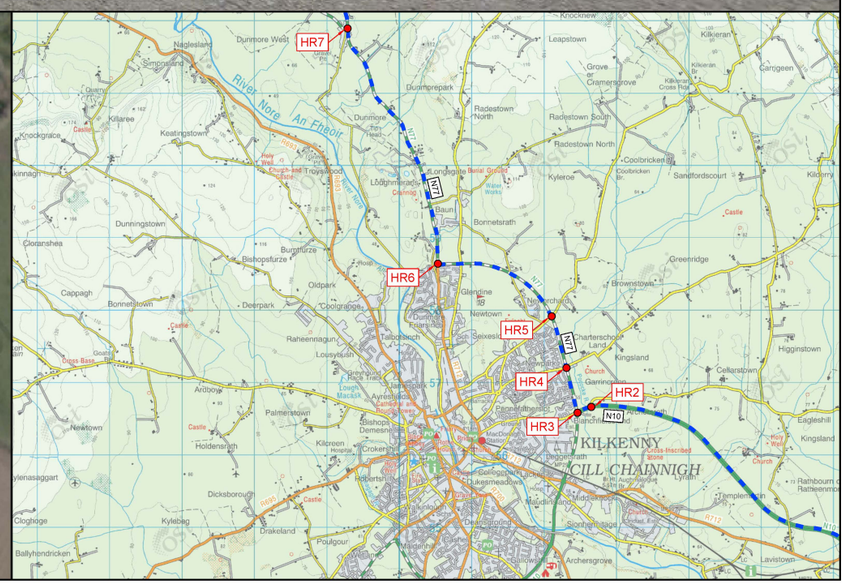
Description of Works:

Temporary removal of road signs. Temporary removal of some vegetation and soil from part of the roundabout. Construction of hardcore area on the roundabout.

Reinstatement Works:

Immediate reinstatement of road signs following each transportation event. Topsoil will be overlaid on the hardcore area following final component delivery, and reseeded / replanted.

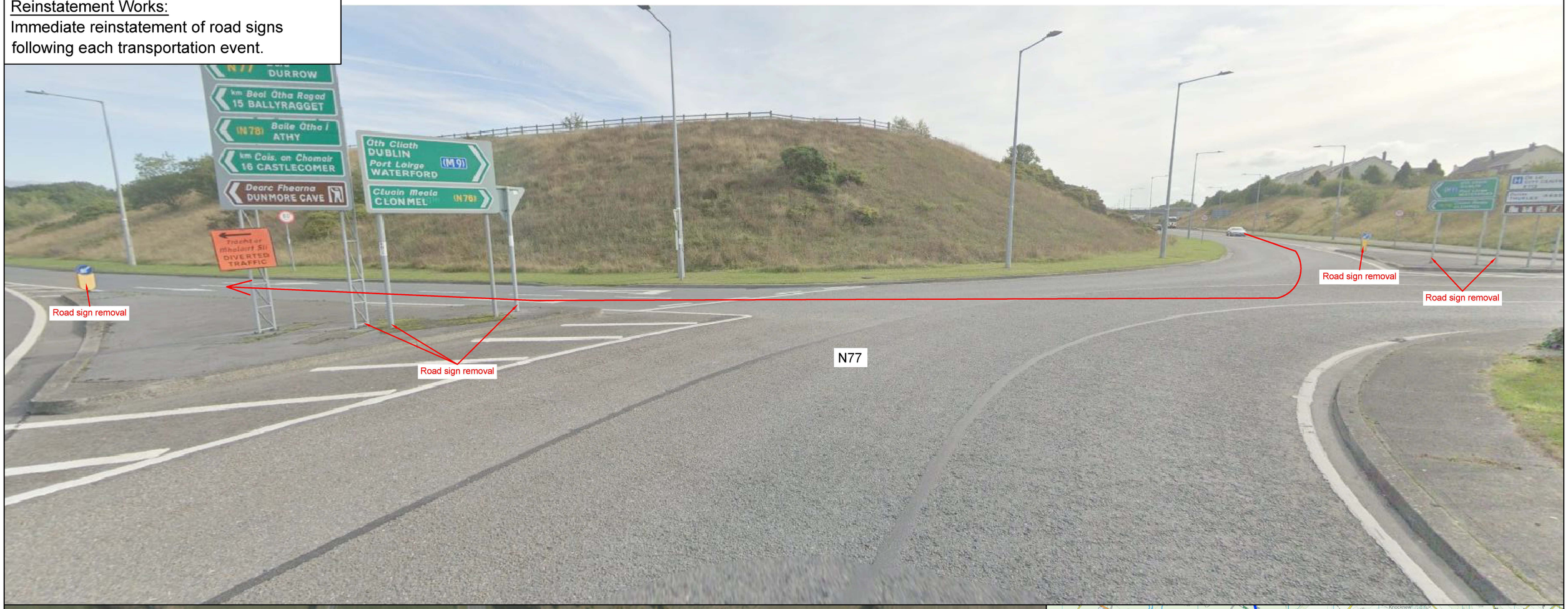


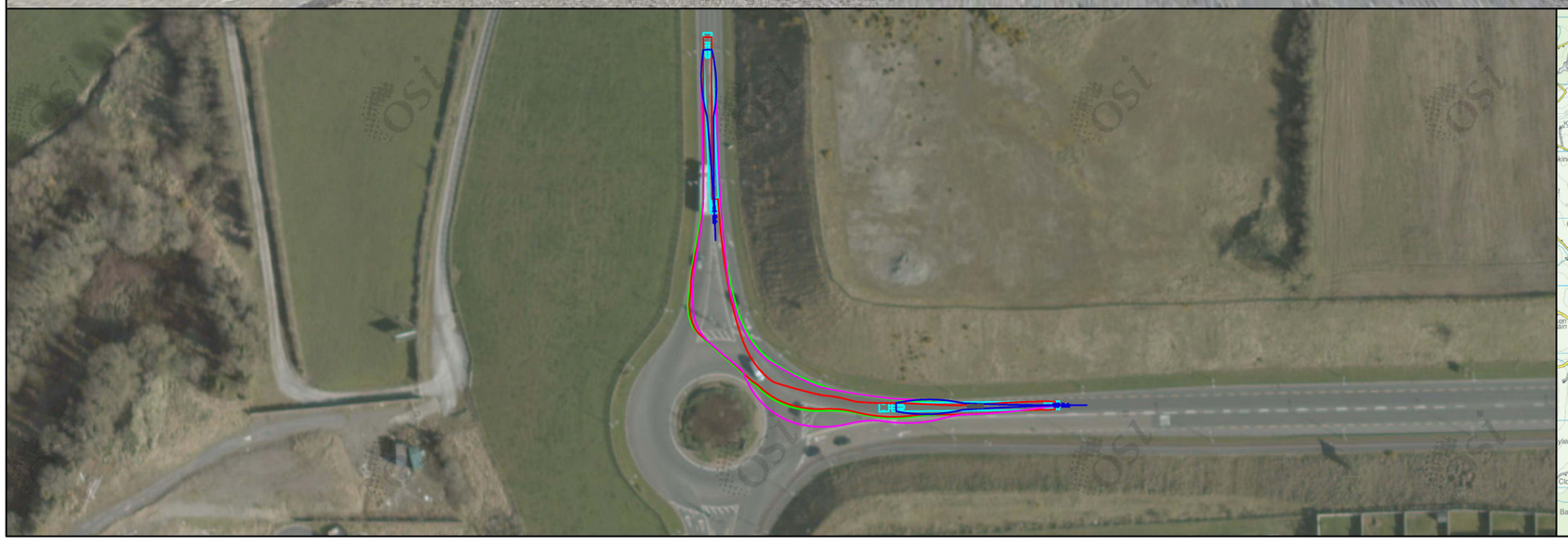


TMP 4.6 - Haul Route Works & Activities
(HR6 - Castlecomer Road Roundabout)

Description of Works:
Temporary removal of road signs.

Reinstatement Works:
Immediate reinstatement of road signs following each transportation event.





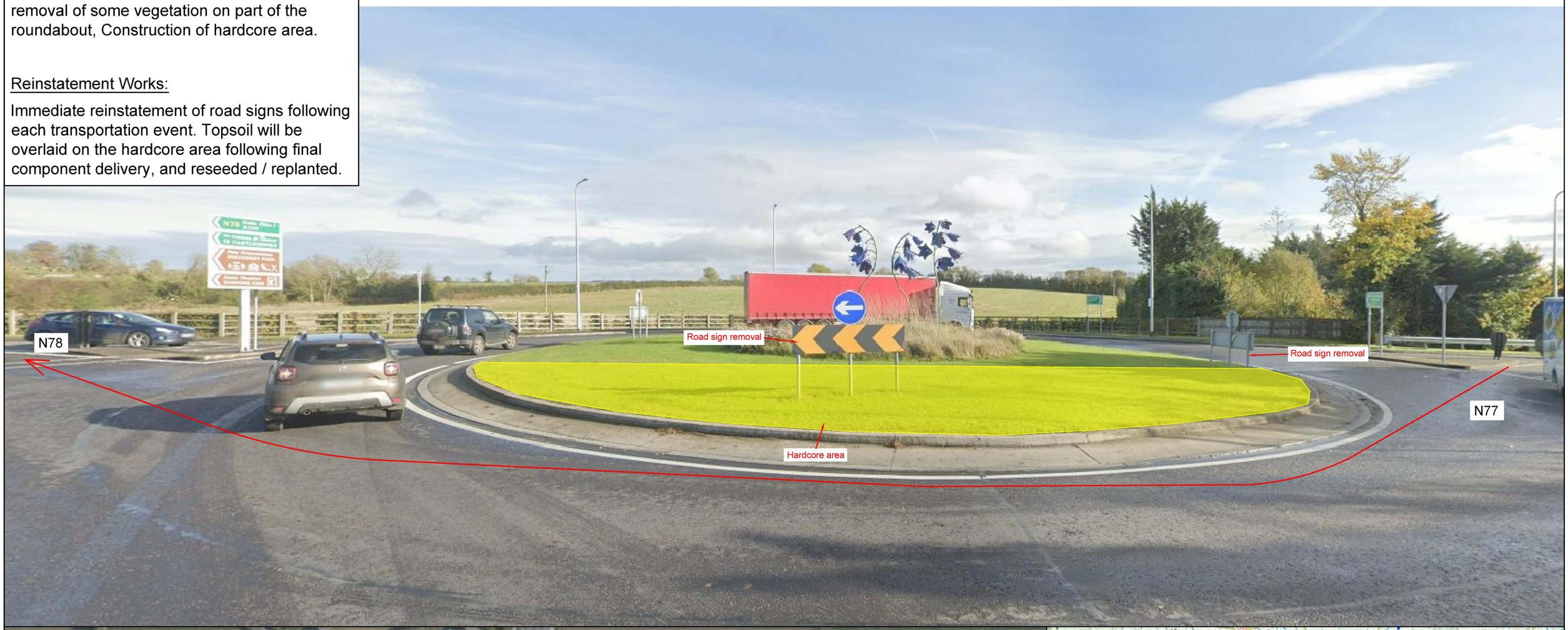
TMP 4.7 - Haul Route Works & Activities
(HR7 - Dunmore East/Henebry's Cross)

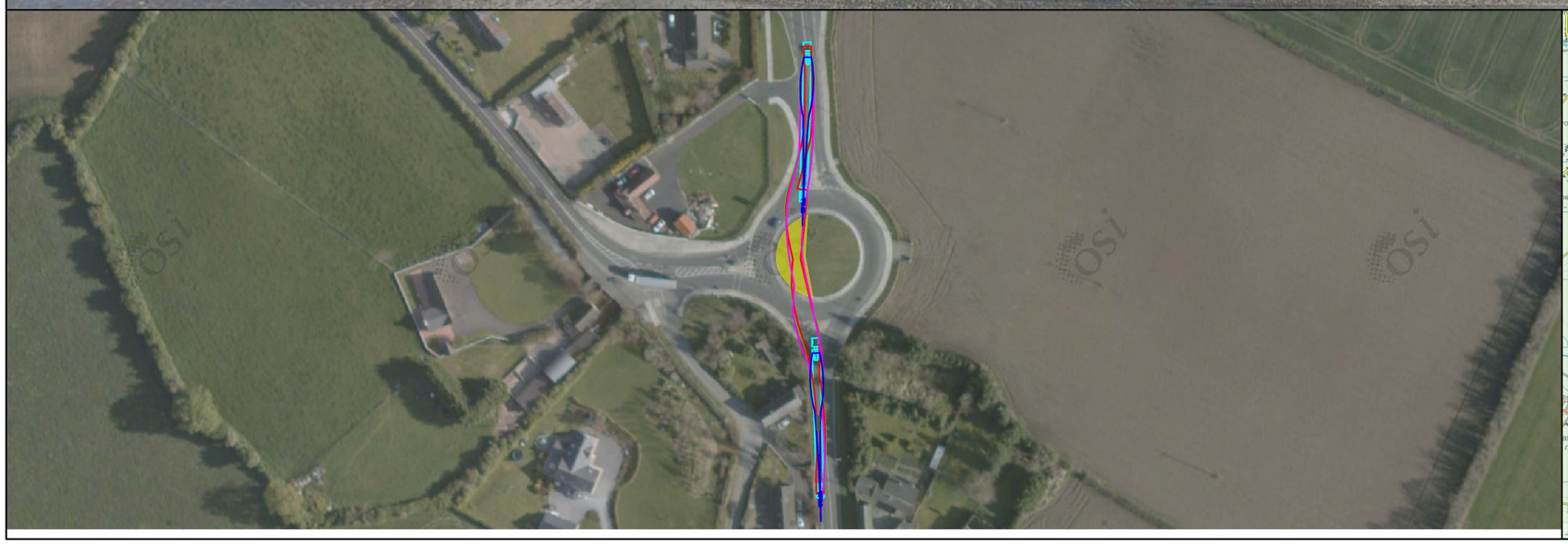
Description of Works:

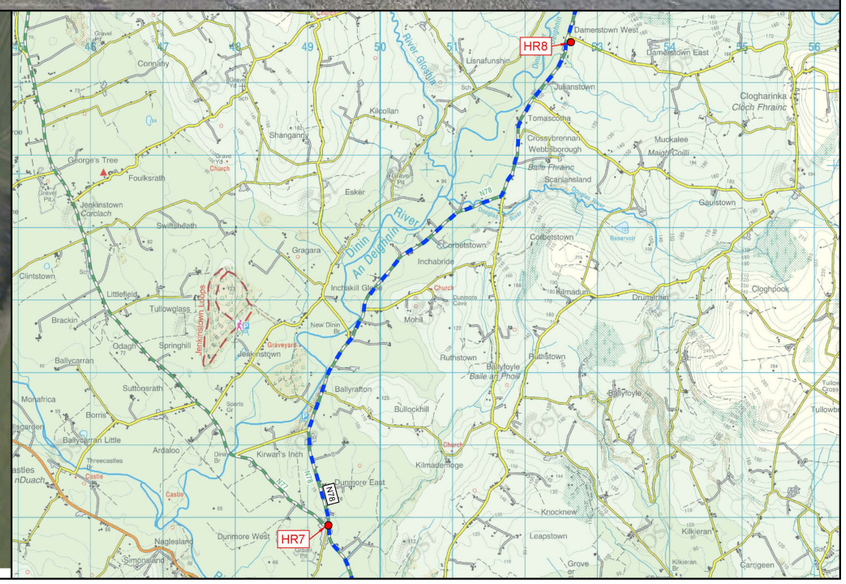
Temporary removal of road signs. Temporary removal of some vegetation on part of the roundabout, Construction of hardcore area.

Reinstatement Works:

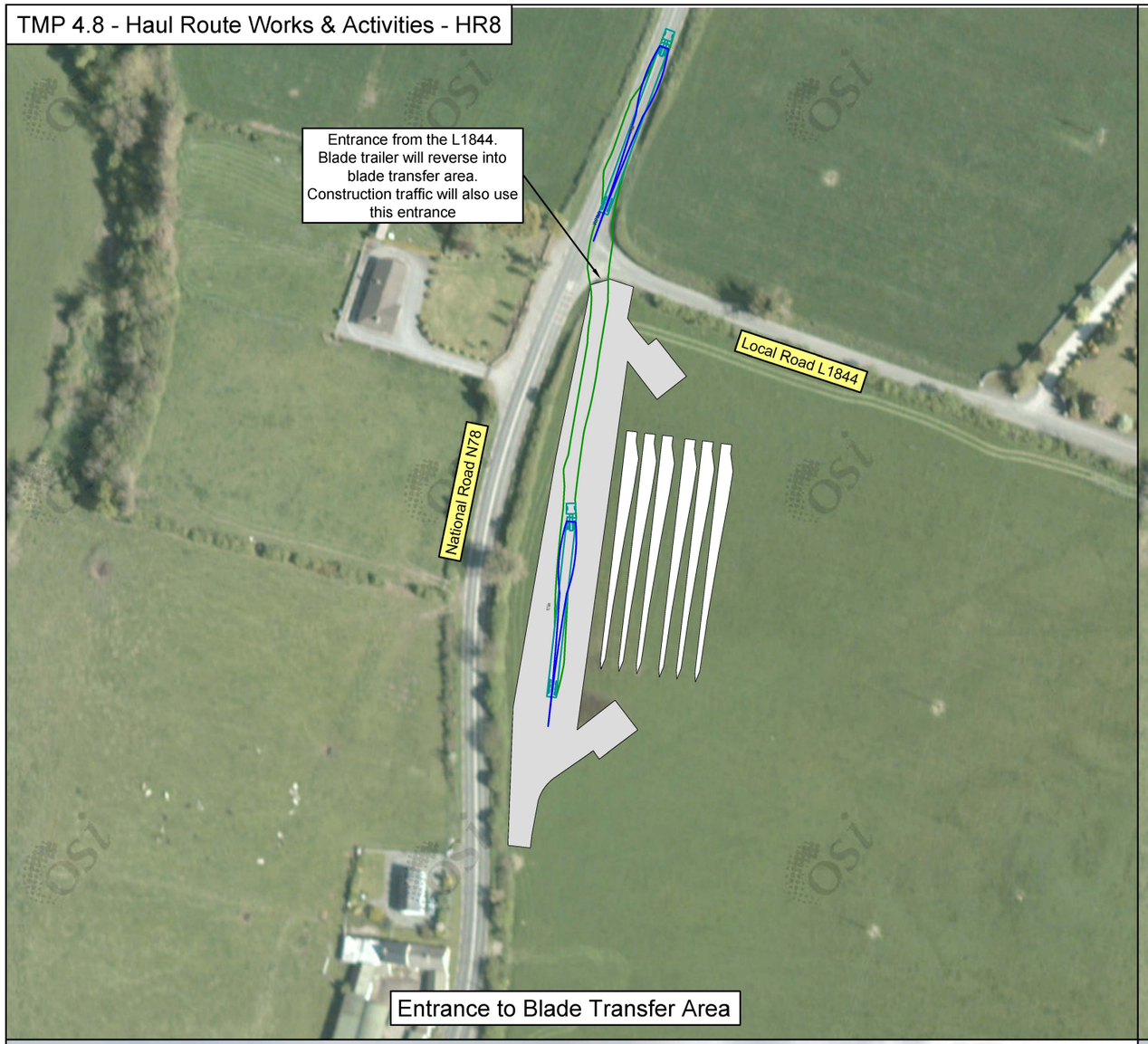
Immediate reinstatement of road signs following each transportation event. Topsoil will be overlaid on the hardcore area following final component delivery, and reseeded / replanted.



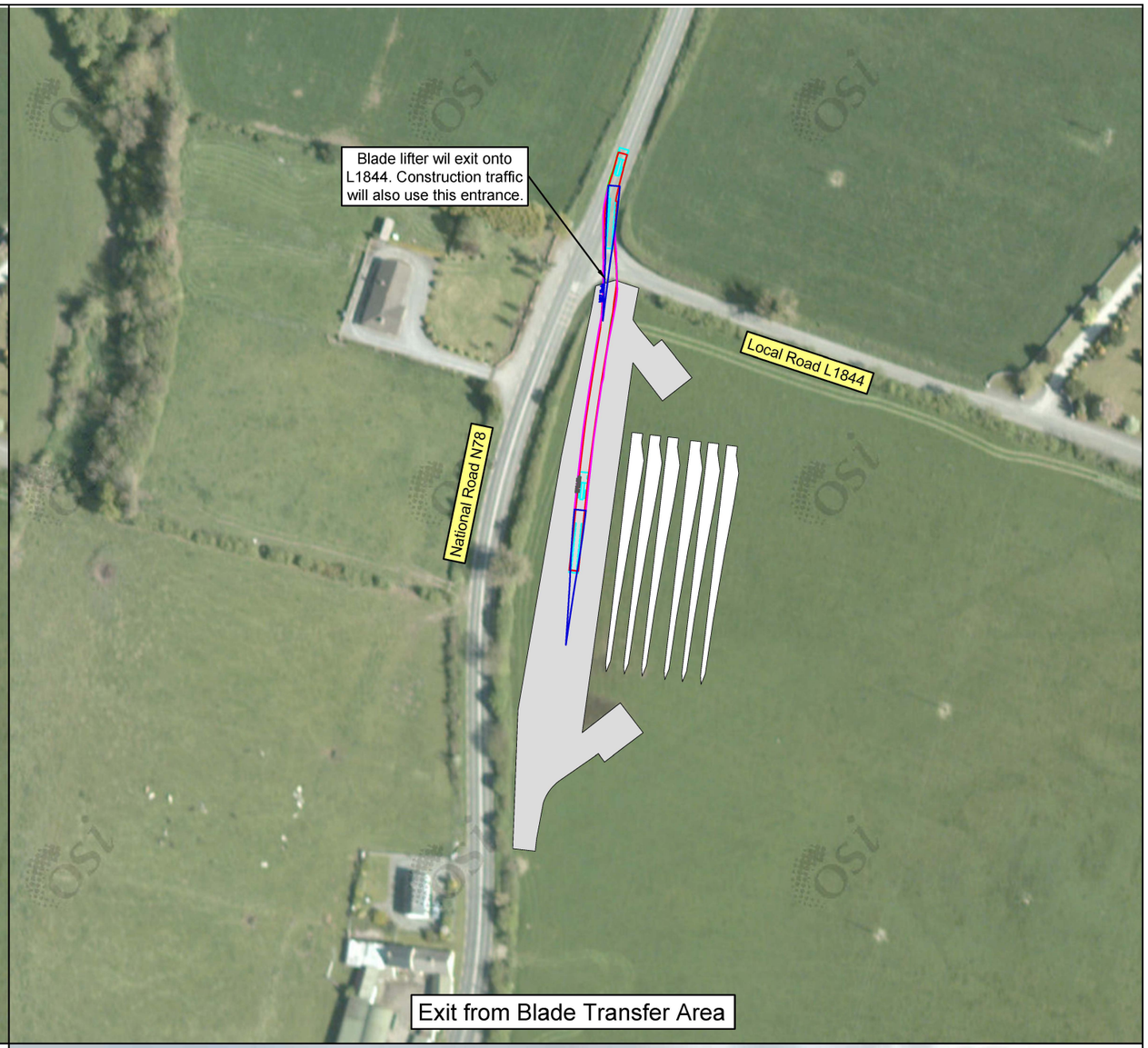




TMP 4.8 - Haul Route Works & Activities - HR8



Entrance to Blade Transfer Area

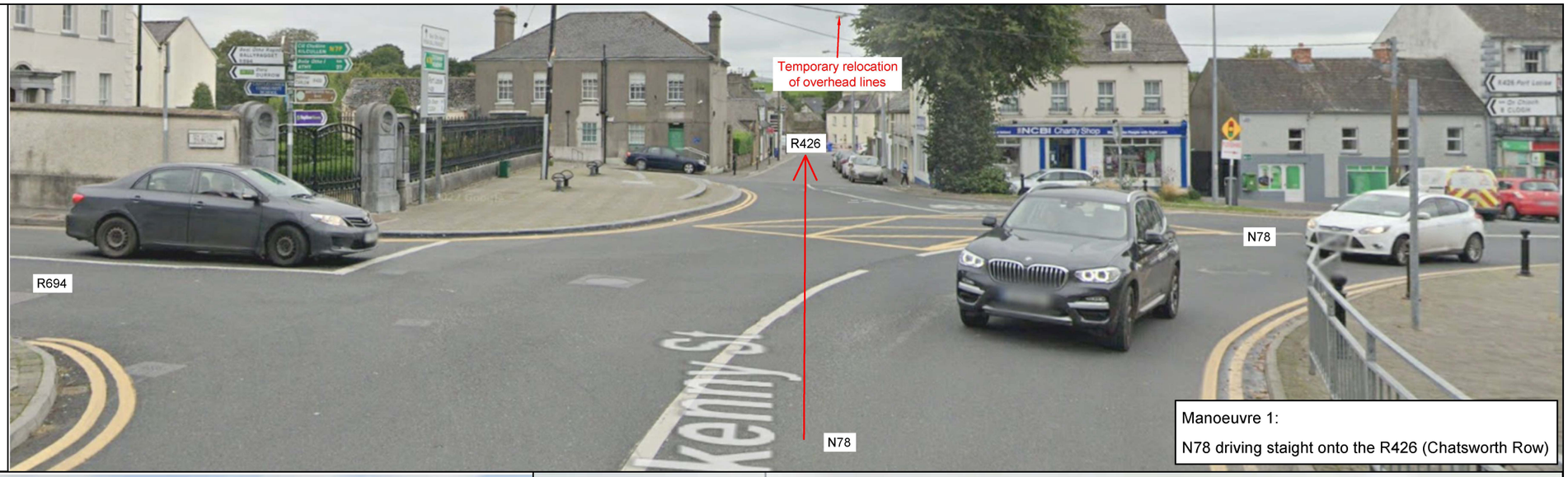


Exit from Blade Transfer Area

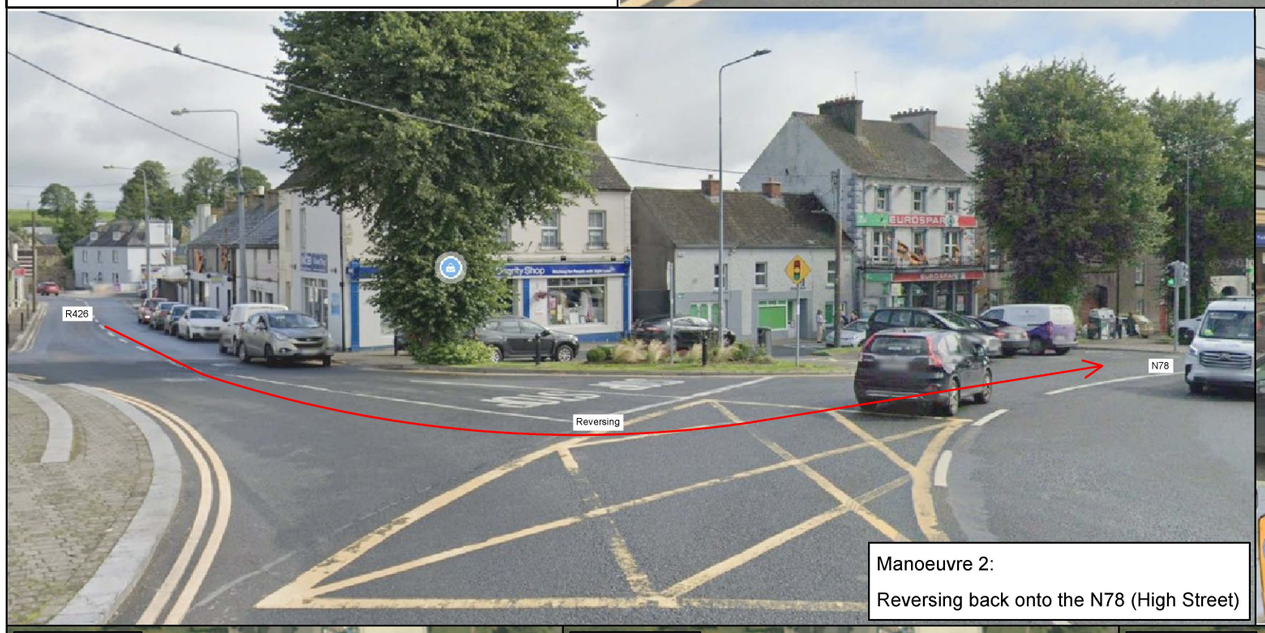
TMP 4.9 - Haul Route Works & Activities
(HR9 - Castlecomer)

Description of Works:
Temporary removal of street furniture, Temporary removal of overhead lines and poles.

Reinstatement Works:
Immediate reinstatement of street furniture following each transportation event. Overhead lines and poles will be reinstated following the completion of blade deliveries.

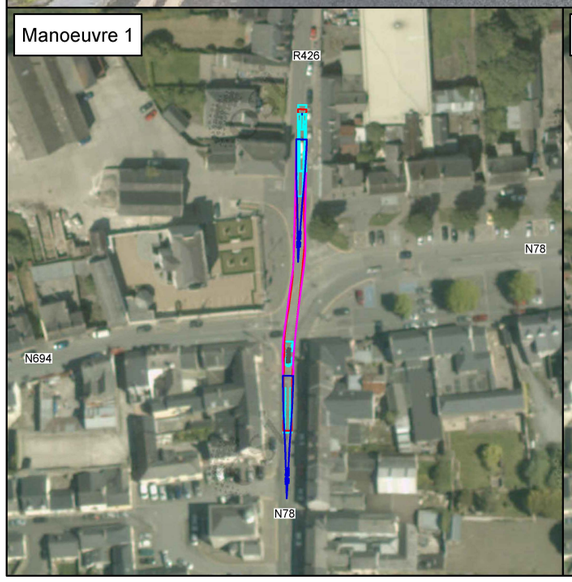


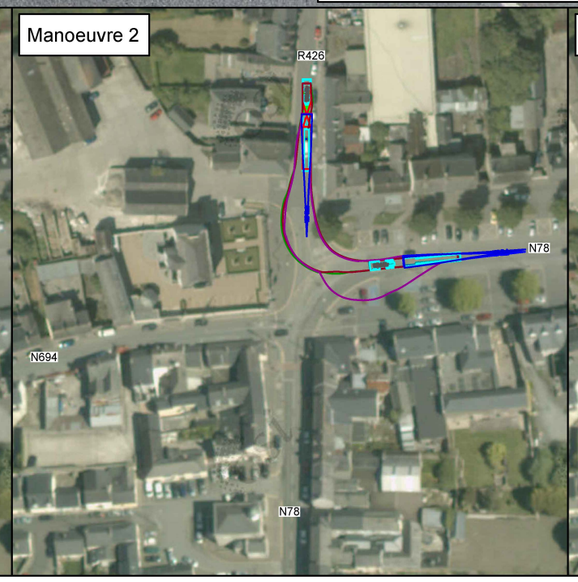
Manoeuvre 1:
N78 driving staight onto the R426 (Chatsworth Row)

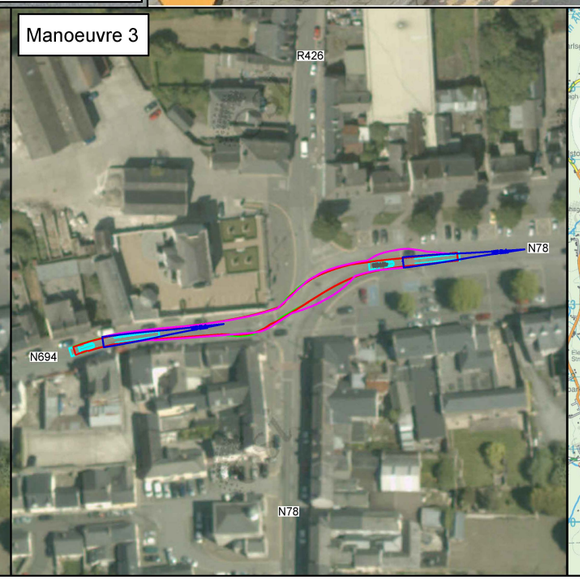


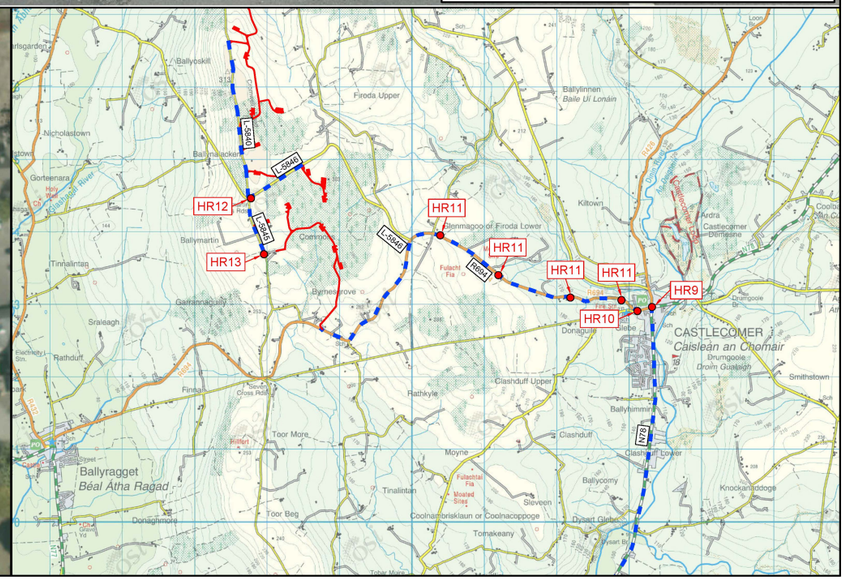
Manoeuvre 2:
Reversing back onto the N78 (High Street)

Manoeuvre 3:
Continuining onto the R694 (Barrack Street)





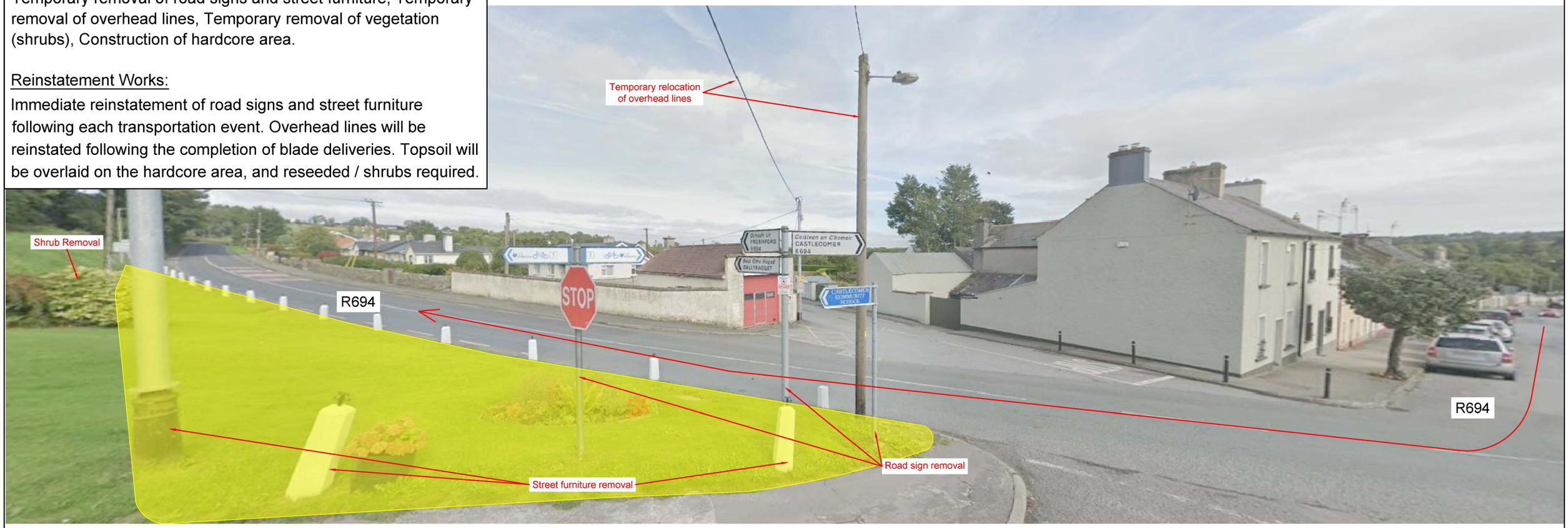


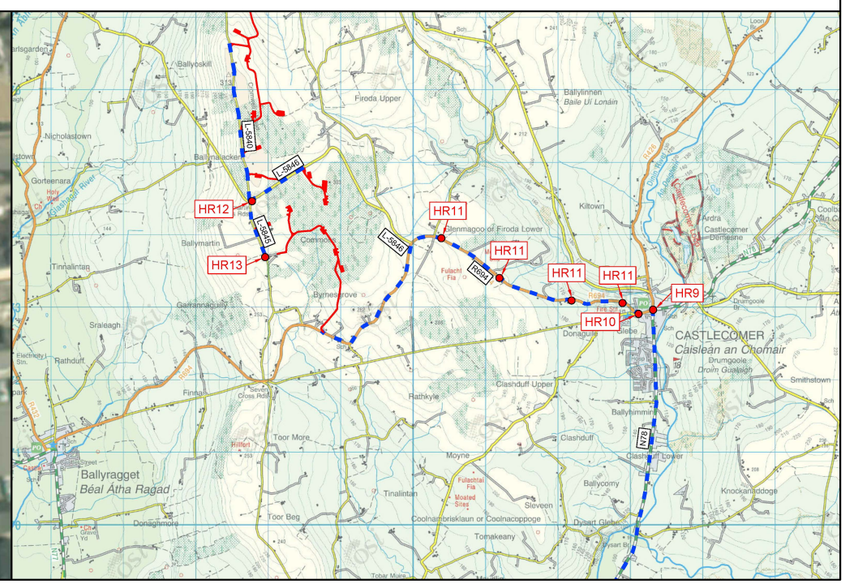


TMP 4.10 - Haul Route Works & Activities
(HR10 - Castlecomer)

Description of Works:
Temporary removal of road signs and street furniture, Temporary removal of overhead lines, Temporary removal of vegetation (shrubs), Construction of hardcore area.

Reinstatement Works:
Immediate reinstatement of road signs and street furniture following each transportation event. Overhead lines will be reinstated following the completion of blade deliveries. Topsoil will be overlaid on the hardcore area, and reseeded / shrubs required.

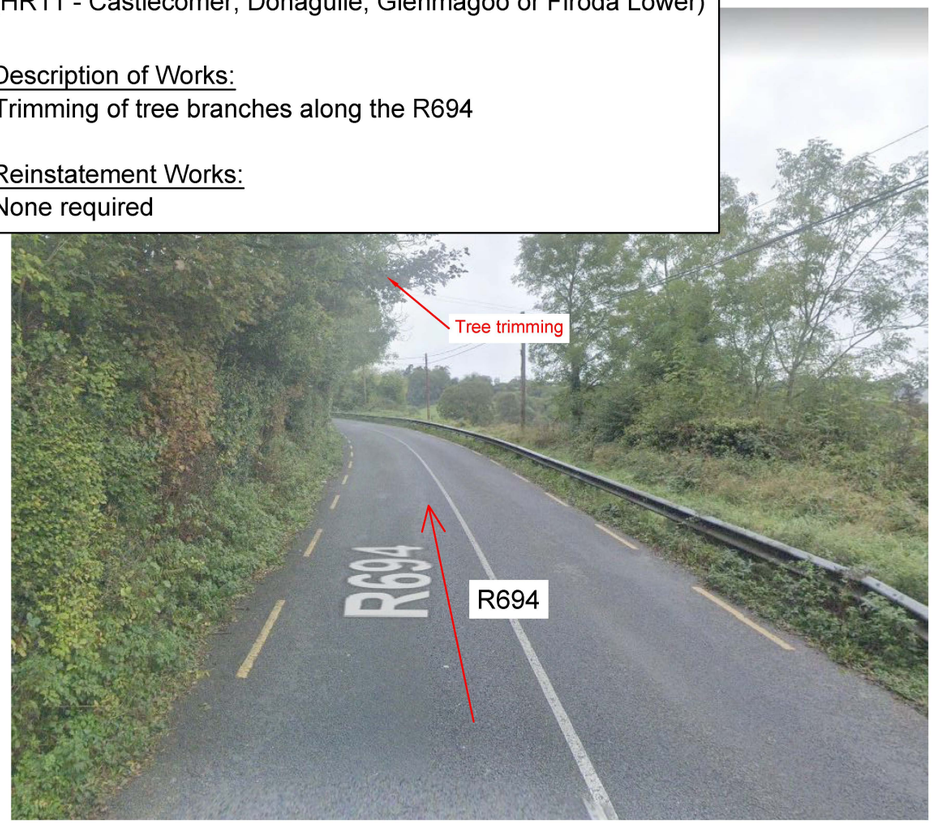


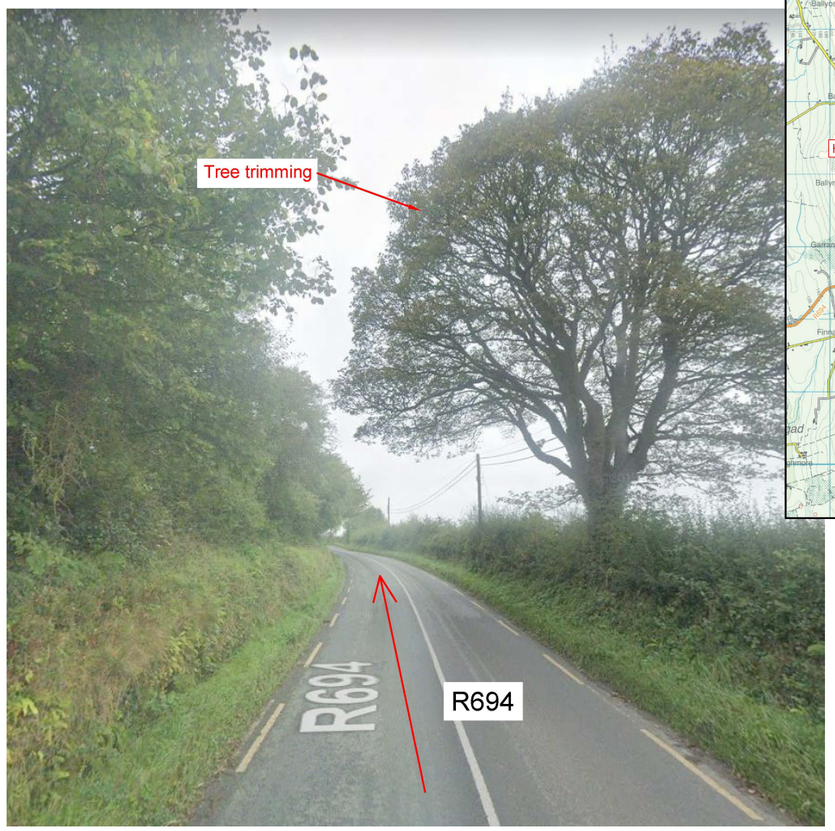


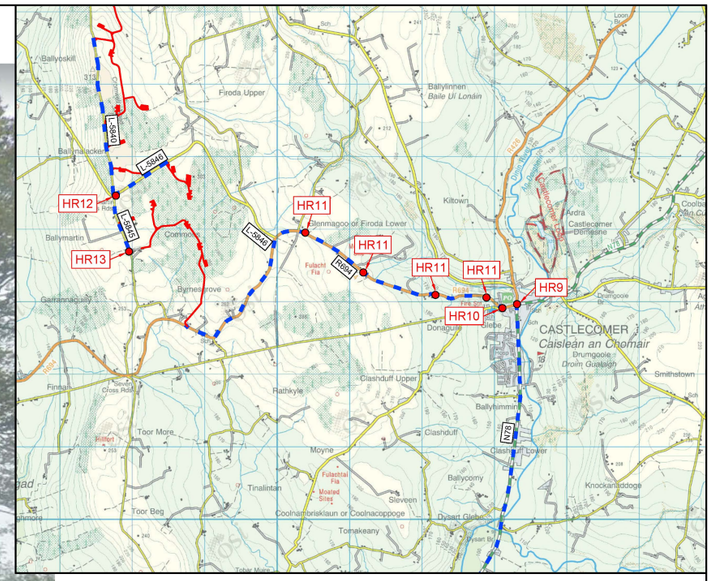
TMP 4.11 - Haul Route Works & Activities
(HR11 - Castlecomer, Donaguile, Glenmagoo or Firoda Lower)

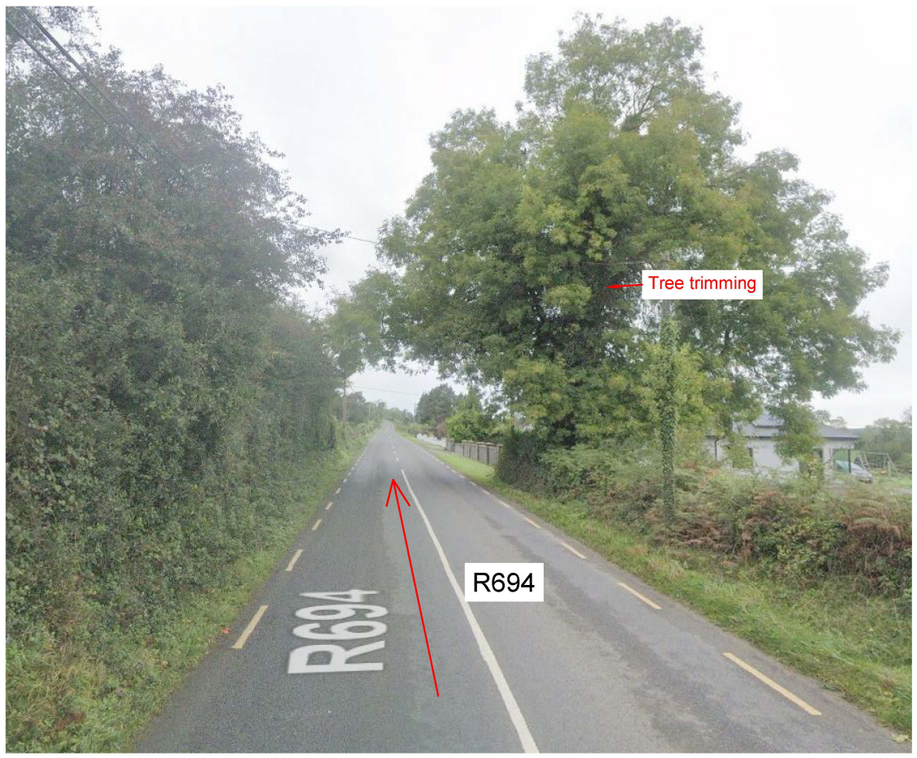
<u>Description of Works:</u>
Trimming of tree branches along the R694

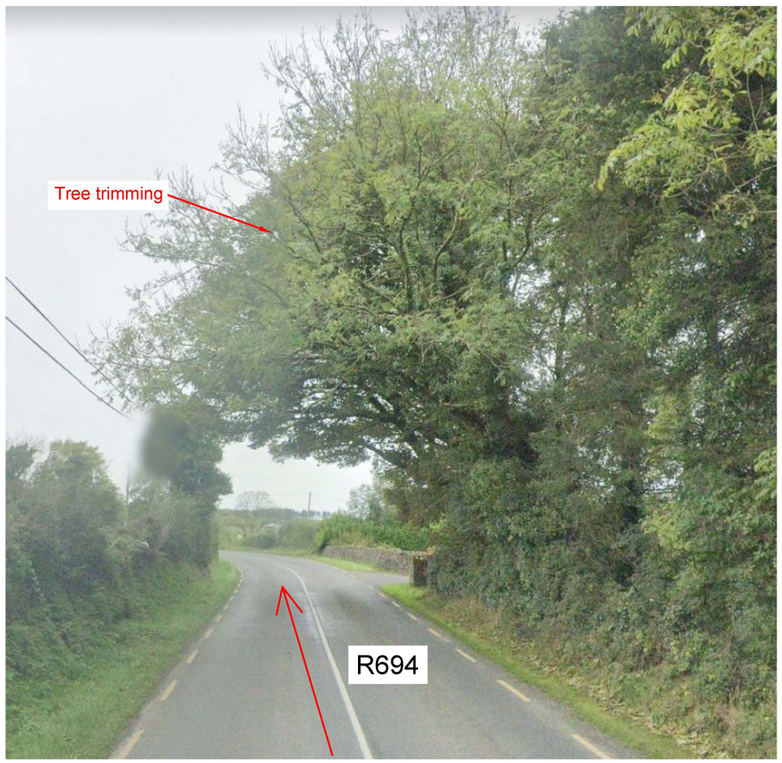
<u>Reinstatement Works:</u>
None required







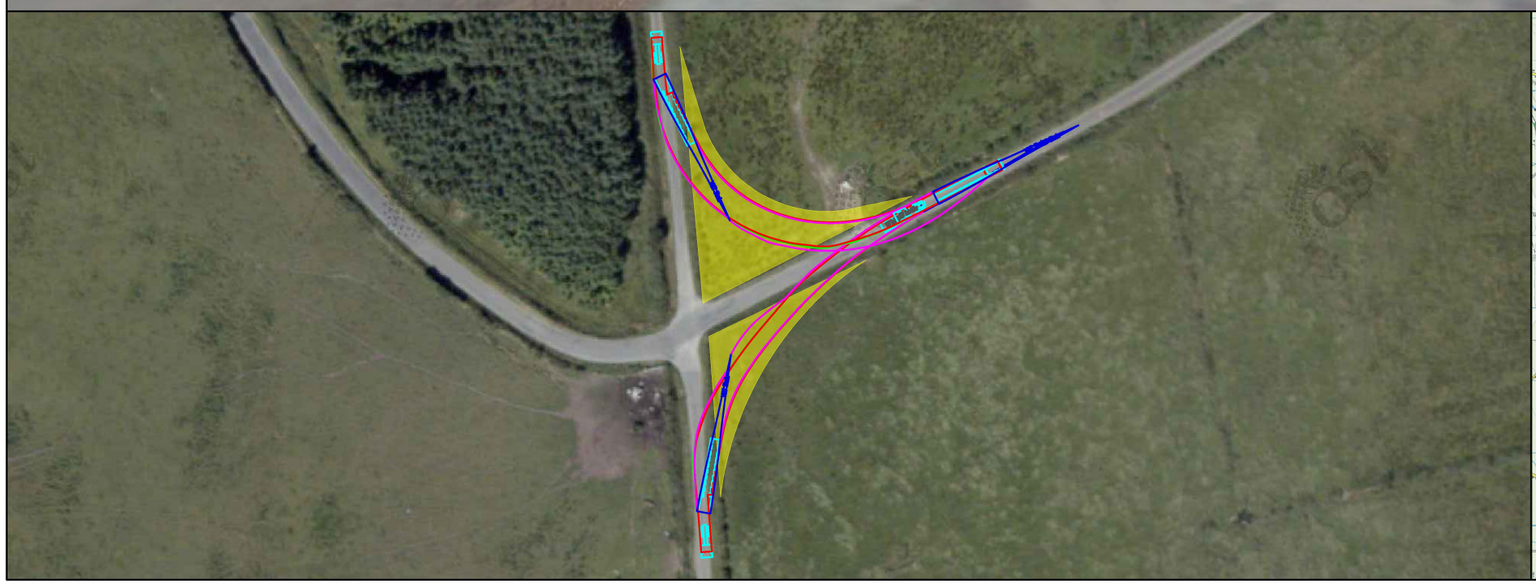


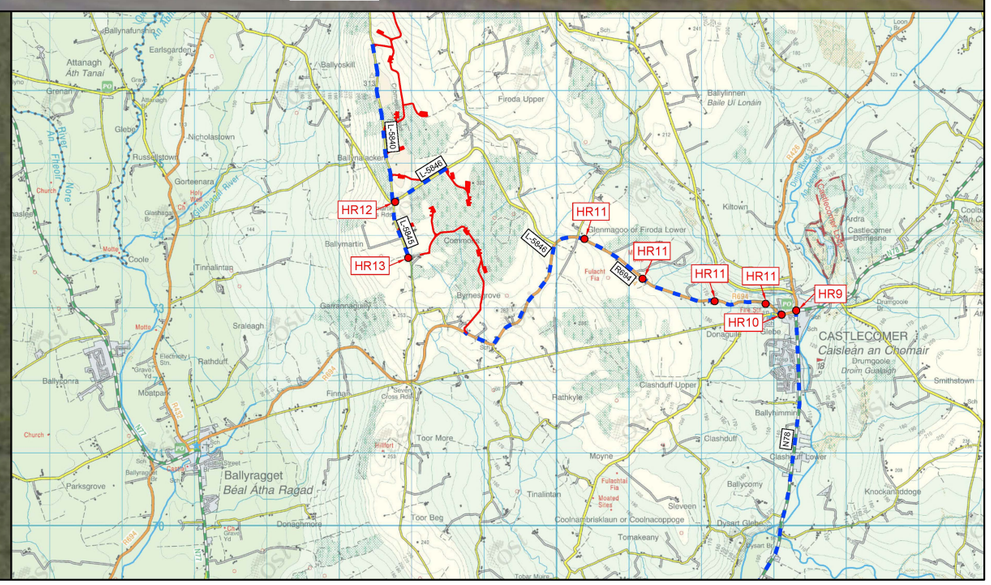


TMP 4.12 - Haul Route Works & Activities
(HR12 - Ballymartin)

Description of Works:
Construction of hardcore area at crossroads - fence and gate removal, road sign removal.

Reinstatement Works:
Topsoil will be overlaid on the hardcore area, and reseeded with grass species. Post and mesh fence installed along original alignment. Road signs will be reinstated.

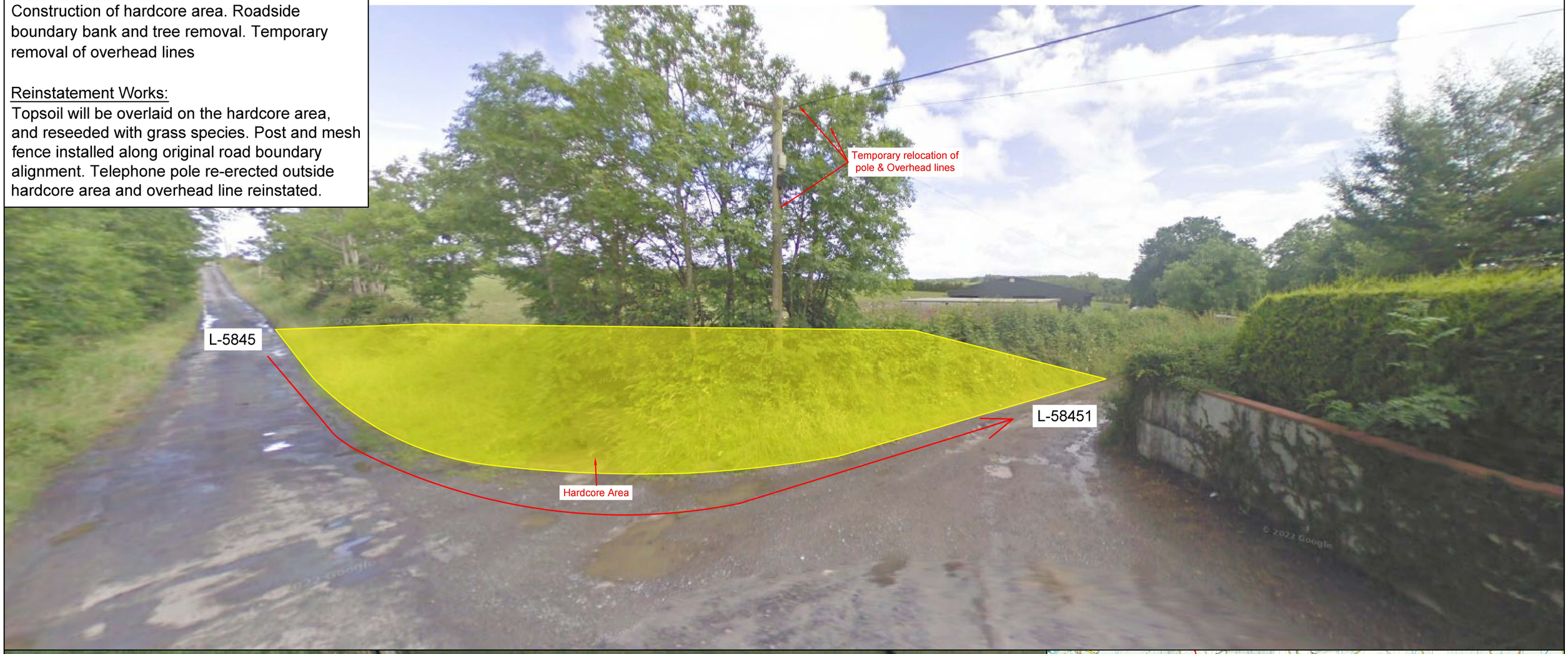


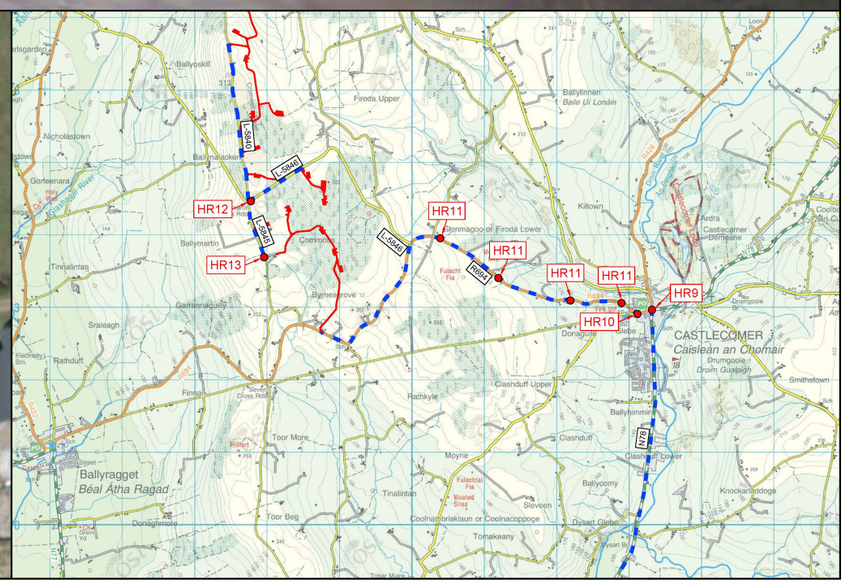


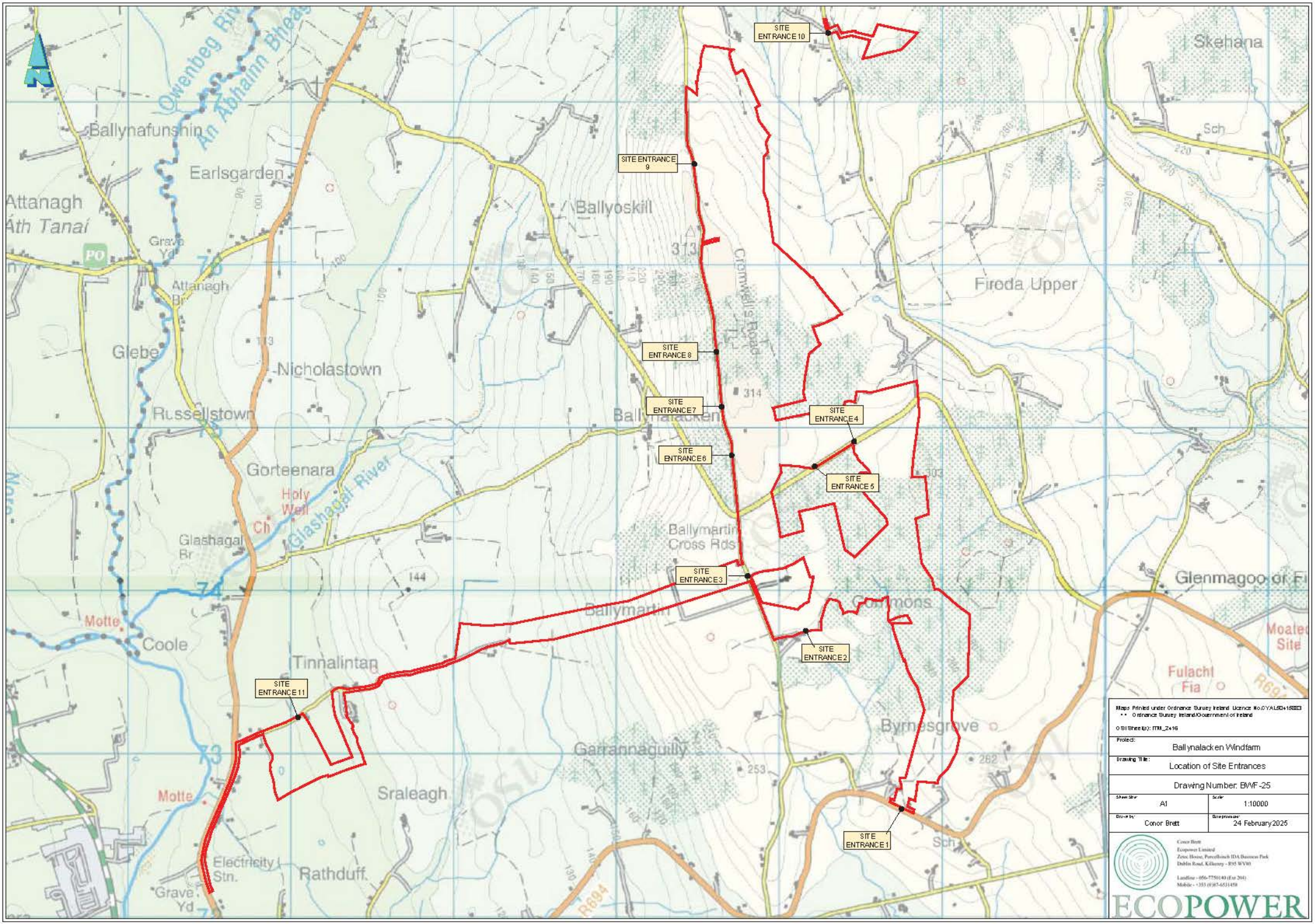
TMP 4.13 - Haul Route Works & Activities
(HR13 - Ballymartin)

Description of Works:
Construction of hardcore area. Roadside boundary bank and tree removal. Temporary removal of overhead lines

Reinstatement Works:
Topsoil will be overlaid on the hardcore area, and reseeded with grass species. Post and mesh fence installed along original road boundary alignment. Telephone pole re-erected outside hardcore area and overhead line reinstated.






SITE ENTRANCE 10
SITE ENTRANCE 9
SITE ENTRANCE 8
SITE ENTRANCE 7
SITE ENTRANCE 6
SITE ENTRANCE 4
SITE ENTRANCE 5
SITE ENTRANCE 3
SITE ENTRANCE 2
SITE ENTRANCE 1
SITE ENTRANCE 11
Skehana
Ballynafunshin
Earlsgarden
Attanagh
Áth Tanaí
Ballyoskill
Firoda Upper
Glebe
Nicholastown
Russellstown
Gorteenara
Holy Well
Glashagal River
Glashagal Br
Ballymartin Cross Rds
Ballymartin
Commons
Glenmagoo or Fi
Coole
Tinnalintan
Motte
Fulacht Fia
Byrnesgrove
Garrannaguilly
Sraleagh
Rathduff
Electricity Stn.
Grave Yd
Cromwells Road
R694
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OSI Sheet(s): ITM_Z416
Project: Ballynalacken Windfarm
Drawing Title: Location of Site Entrances
Drawing Number: BWF-25
Sheet Size: A1
Scale: 1:10000
Drawn by: Conor Brett
Date processed: 24 February 2025
Conor Brett
Ecopower Limited
Zeus House, Purcellsinch IDA Business Park
Dublin Road, Kilkenny - R95 WV80
Landline - 056-7750140 (Ext 204)
Mobile - +353 (0)87-6531458
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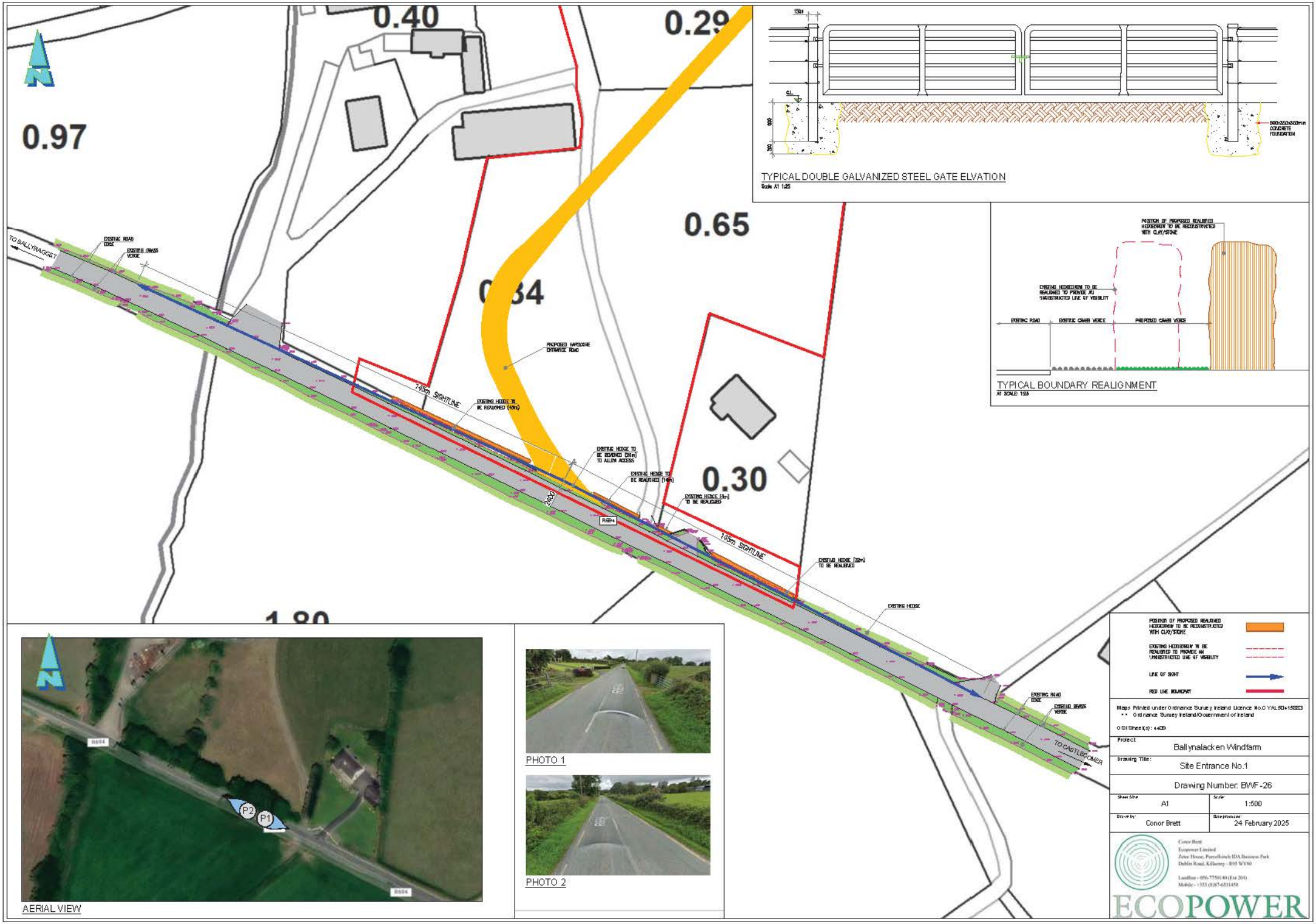

AERIAL VIEW

PHOTO 1

PHOTO 2

SITE ENTRANCE NO.2

PROPOSED ENTRANCE GATES. REFER TO DRAWING NO. BWF-28 FOR DETAILS.

Existing forestry road to be upgraded

PUBLIC ROAD L-8848-1

PUBLIC ROAD

0.35

0.29

AERIAL VIEW

N.T.S.

RED LINE BOUNDARY

OSI Sheet(s): 4429

Project: Ballynalacken Windfarm

Drawing Title: Site Entrance No.2

Drawing Number: BWF-27

Sheet Size	Scale
A1	1:250
Drawn by: Conor Brett	Date processed: 24 February 2025

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Dublin Road, Kilkenny - R95 WV80
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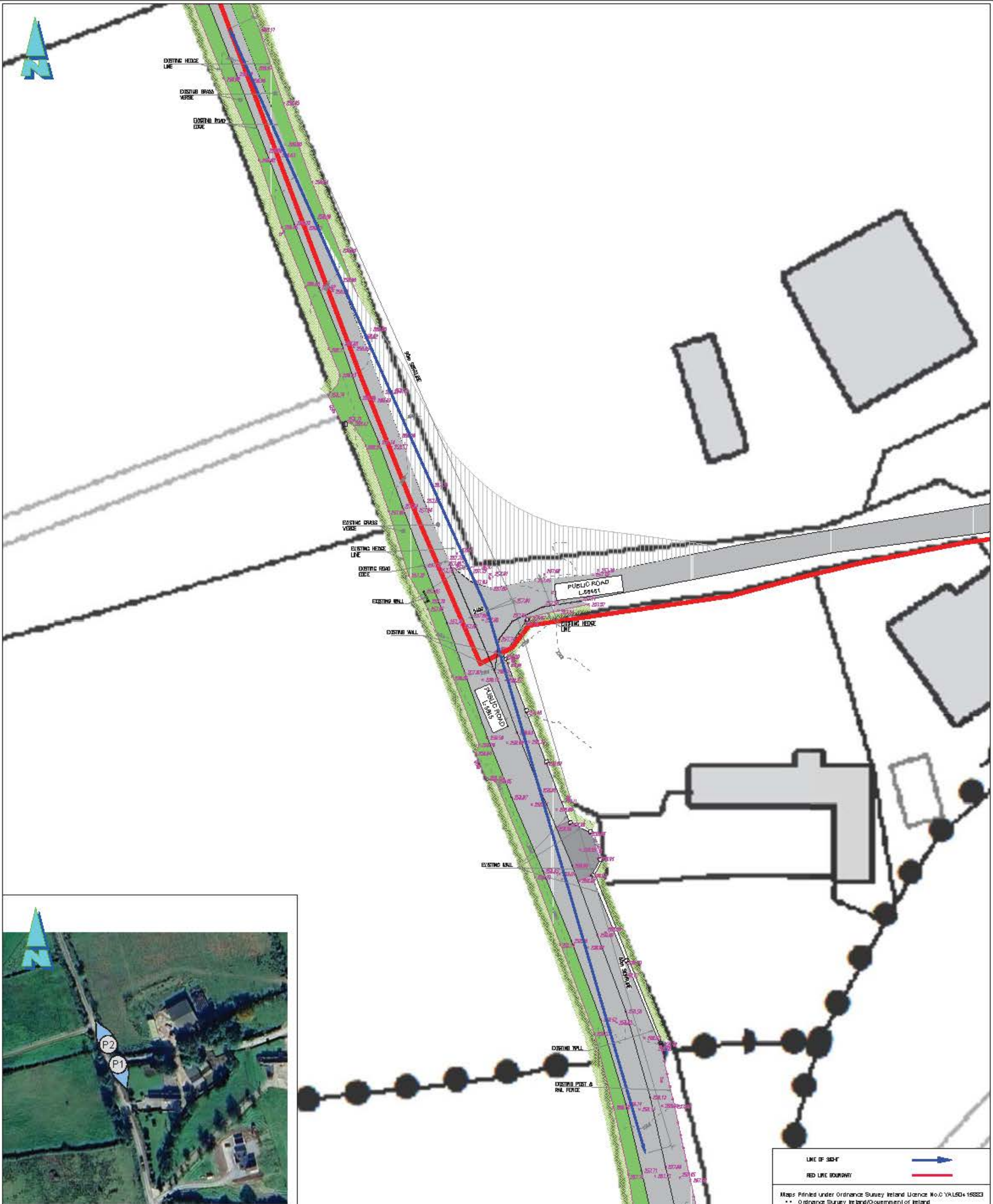

AERIAL VIEW
N.T.S.

PHOTO 1

PHOTO 2

LINE OF SIGHT	(blue arrow)
RED LINE BOUNDARY	(red line)

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OSI Sheet(s): 4408

Project: Ballynalacken Windfarm	
Drawing Title: Sightlines at Local Road Junction L5845 and L58451	
Drawing Number: BWF-28	
Sheet Size: A1	Scale: 1:250
Drawn by: Conor Brett	Date produced: 24 February 2025

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Ecopower Limited
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Dublin Road, Kilkenny - R95 WV80

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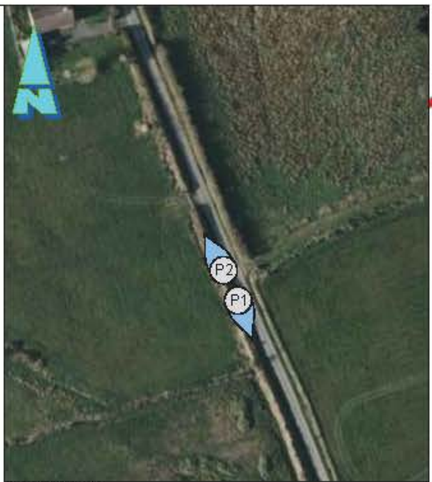

AERIAL VIEW
N.T.S.

PHOTO 1

PHOTO 2

Legend	
POSITION OF PROPOSED REALIGNED HEDGEROW TO BE RECONSTRUCTED WITH CLAY/STONE	(orange)
EXISTING HEDGEROW TO BE REALIGNED TO PROVIDE AN UNOBSTRUCTED LINE OF VISIBILITY	(dashed)
LINE OF SIGHT	(blue arrow)
RED LINE BOUNDARY	(red line)

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OSI Sheet(s): 4408

Project: Ballynalacken Windfarm

Drawing Title: Site Entrance No.3

Drawing Number: BWF-29

Sheet Size: A1	Scale: 1:250
Drawn by: Conor Brett	Date produced: 24 February 2025

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Dublin Road, Kilkenny - R95 WV80

Landline - 056-7750140 (Ext 204)
Mobile - +353 (0)87-6531458

ECOPOWER

AERIAL VIEW
N.T.S.

PHOTO 1

PHOTO 2

EXISTING HEDGEROW TO BE REMOVED TO PROVIDE AN UNOBSTRUCTED LINE OF VISIBILITY

LINE OF SIGHT

RED LINE BOUNDARY

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OSI Sheet(s): 4409

Project: Ballynalacken Windfarm	
Drawing Title: Site Entrance No.4	
Drawing Number: BWF-30	
Sheet Size: A1	Scale: 1:250
Drawn by: Conor Brett	Date produced: 24 February 2025

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Dublin Road, Kilkenny - R95 WV80

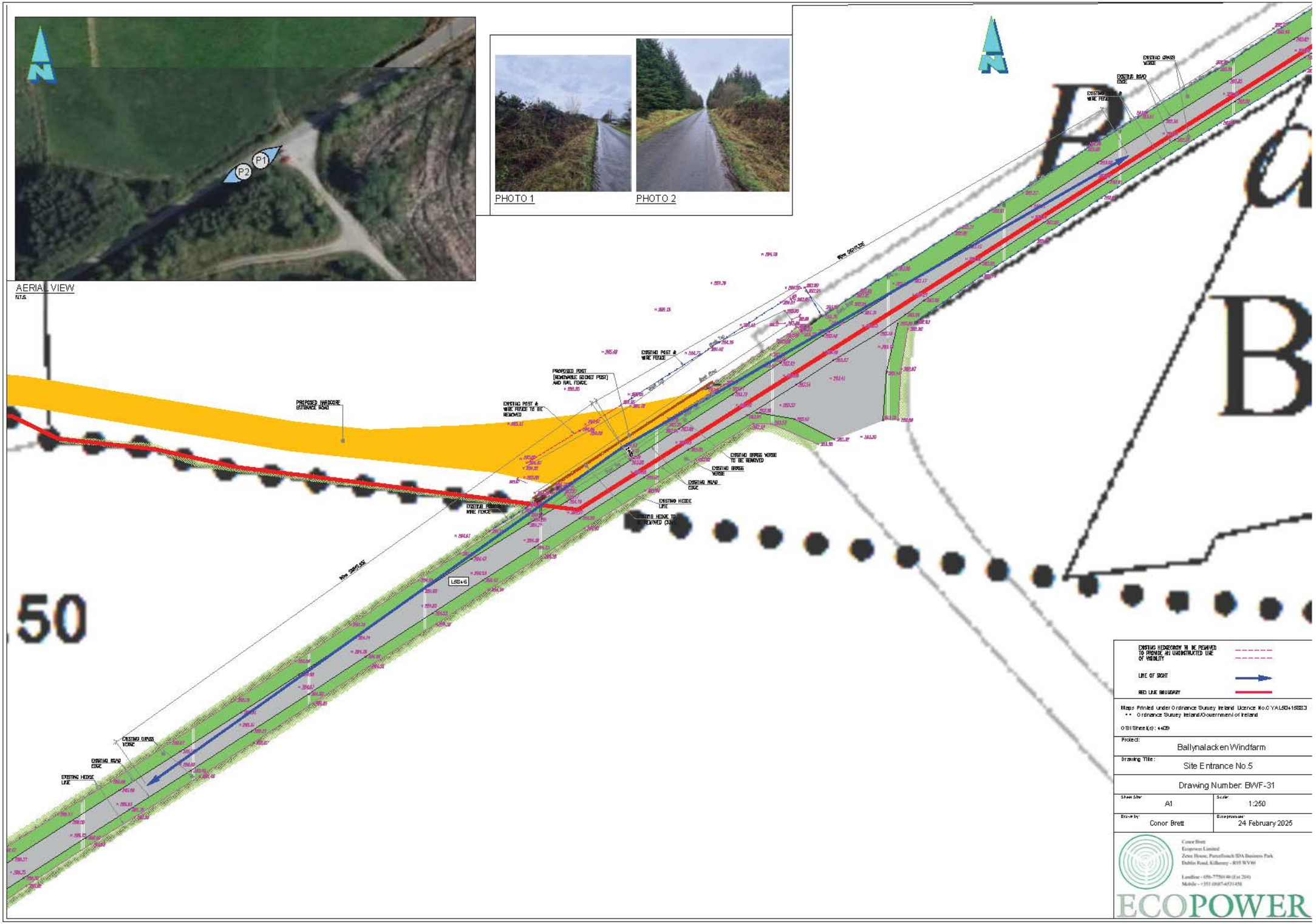
Landline - 056-7750140 (Ext 204)
Mobile - +353 (0)87-6531456

ECOPOWER

AERIAL VIEW

PHOTO 1

PHOTO 2



EXISTING HEDGEROW TO BE REMOVED TO PROVIDE AN UNOBSTRUCTED LINE OF VISIBILITY

LINE OF SIGHT

RED LINE BOUNDARY

OSI Sheet(s): 4409

Project: Ballynalacken Windfarm

Drawing Title: Site Entrance No.5

Drawing Number: BWF-31

Sheet Size	Scale
A1	1:250
Drawn by: Conor Brett	Date produced: 24 February 2025

Conor Brett
Ecopower Limited
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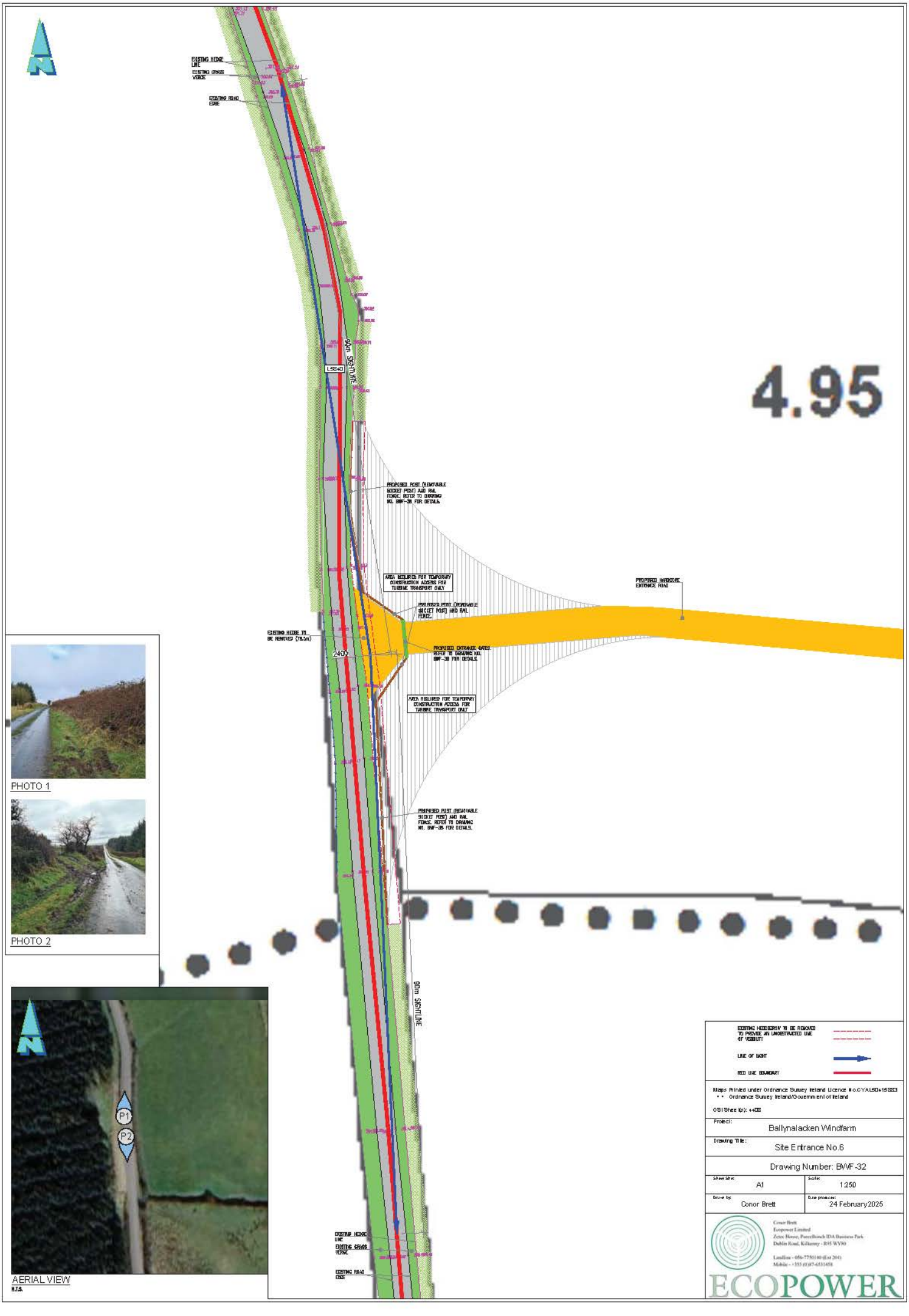
Landline - 056-7750140 (Ext 204)
Mobile - +353 (0)87-6531458

ECOPOWER



4.95

PHOTO 1

PHOTO 2

AERIAL VIEW
N.T.S.

EXISTING HEDGEROW TO BE REMOVED TO PROVIDE AN UNOBSTRUCTED LINE OF VISIBILITY

LINE OF SIGHT

RED LINE BOUNDARY

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OSI Sheet No's: 4408

Project: Ballynalacken Windfarm

Drawing Title: Site Entrance No.6

Drawing Number: BWF-32

Sheet Size:	Scale:
A1	1:250
Drawn by: Conor Brett	Date produced: 24 February 2025

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Mobile - +353 (0)87-6551458

ECOPOWER

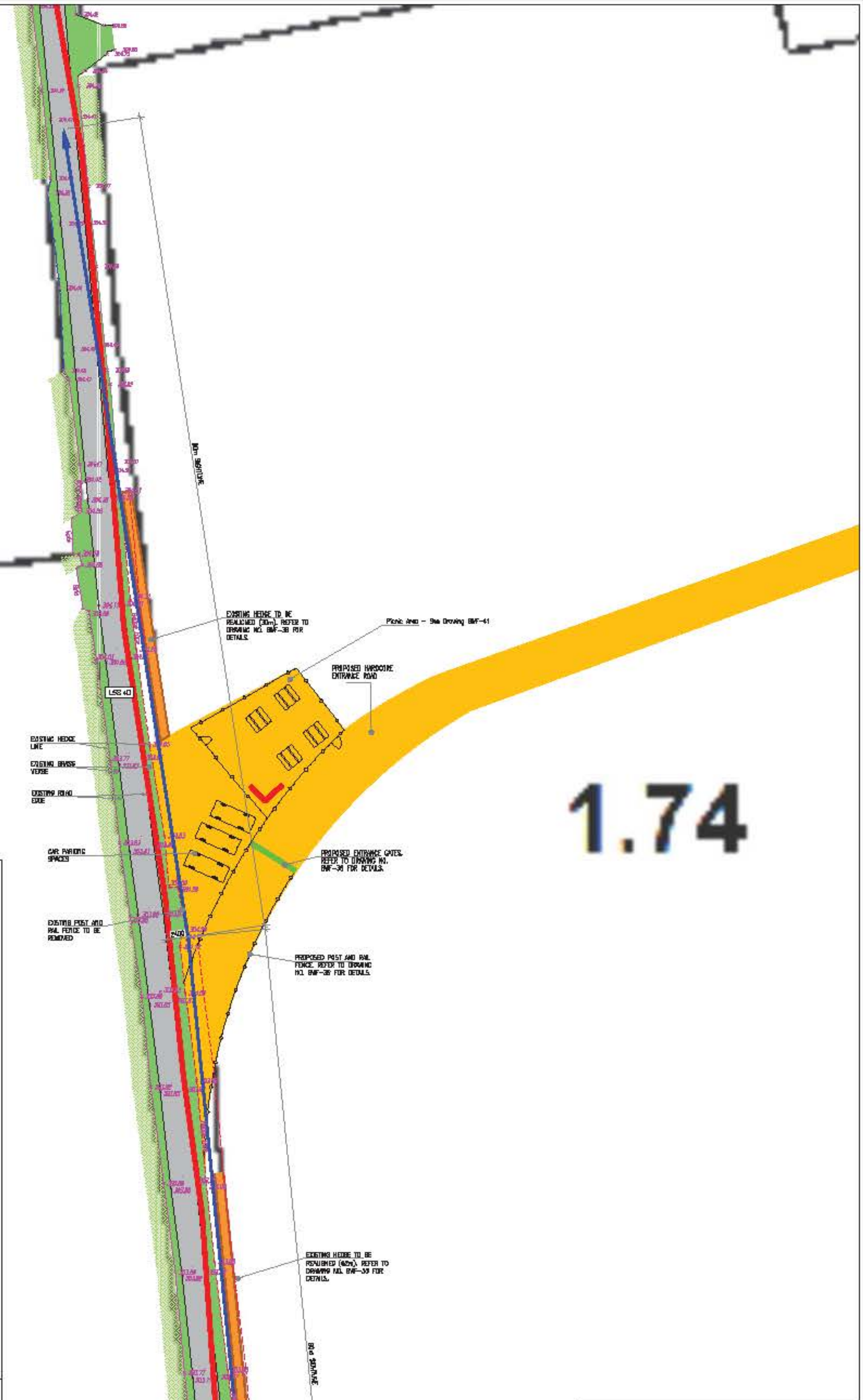

PHOTO 1

PHOTO 2

AERIAL VIEW
N.T.S.

POSITION OF PROPOSED REALIGNED HEDGEROW TO BE RECONSTRUCTED WITH CLAY/STONE	(orange bar)
EXISTING HEDGEROW TO BE REALIGNED/REMOVED TO PROVIDE AN UNOBSTRUCTED LINE OF VISIBILITY	(red dashed lines)
LINE OF SIGHT	(blue arrow)
RED LINE BOUNDARY	(red line)

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OSI Sheet(s): 4350

Project: Ballynalacken Windfarm

Drawing Title: Site Entrance No.7

Drawing Number: BWF-33

Sheet Size:	Scale:
A1	1:250
Drawn by: Conor Brett	Date produced: 24 February 2025

Conor Brett
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Dublin Road, Kilkenny - R95 WV80

Landline - 056-7750140 (Ext 204)
Mobile - +353 (0)87-6531458

ECOPOWER

PHOTO 1

PHOTO 2

AERIAL VIEW
N.T.S.

POSITION OF PROPOSED REALIGNED HEDGEROW TO BE RECONSTRUCTED WITH CLAY/STONE	(orange bar)
EXISTING HEDGEROW TO BE REALIGNED TO PROVIDE AN UNOBSTRUCTED LINE OF VISIBILITY	(red dashed lines)
LINE OF SIGHT	(blue arrow)
RED LINE BOUNDARY	(red line)

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OSI Sheet(s): 4350

Project: Ballynalacken Windfarm	
Drawing Title: Site Entrance No.8	
Drawing Number: BWF-34	
Sheet Size: A1	Scale: 1:250
Drawn by: Conor Brett	Date produced: 24 February 2025

Conor Brett
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Aztec House, Purcellsinch IDA Business Park
Dublin Road, Kilkenny - R95 WV80

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ECOPOWER

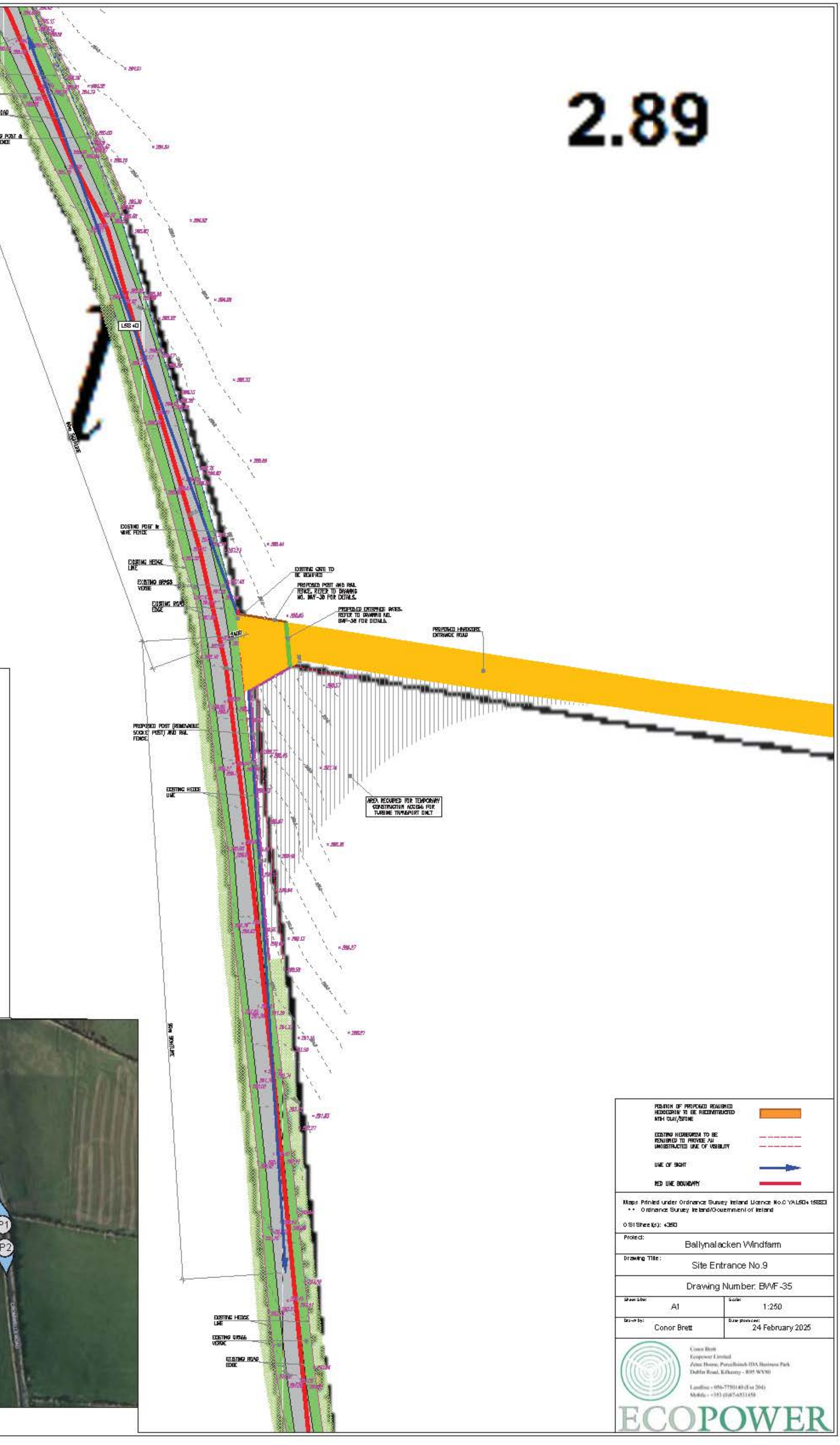
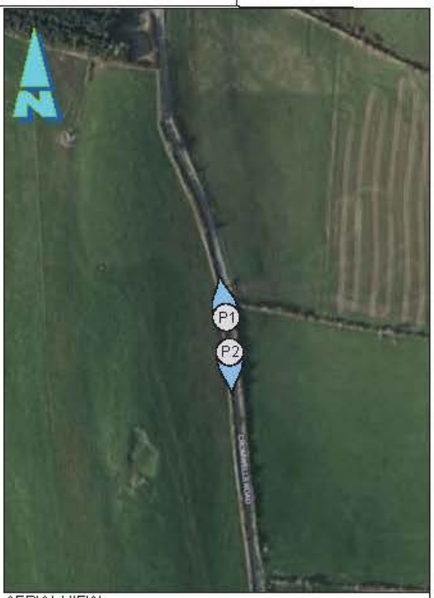


PHOTO 1

PHOTO 2



AERIAL VIEW
N.T.S.

POSITION OF PROPOSED REALIGNED HEDGEROW TO BE RECONSTRUCTED WITH CLAY/STONE	
EXISTING HEDGEROW TO BE REALIGNED TO PROVIDE AN UNOBSTRUCTED LINE OF VISIBILITY	
LINE OF SIGHT	
RED LINE BOUNDARY	

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OSI Sheet(s): 4350

Project: Ballynalacken Windfarm

Drawing Title: Site Entrance No.9

Drawing Number: BWF-35

Sheet Size:	Scale:
A1	1:250
Drawn by: Conor Brett	Date produced: 24 February 2025

Conor Brett
Ecopower Limited
Zetec House, Purcellsinch IDA Business Park
Dublin Road, Kilkenny - R95 WY80
Landline - 056-7750140 (Ext 204)
Mobile - +353 (0)87-6531458

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AERIAL VIEW
N.T.S.

EXISTING HEDGE LINE
EXISTING GRASS VERGE
EXISTING ROAD EDGE
EXISTING HEDGE TO BE REALIGNED (10m). REFER TO DRAWING NO. BWF-39 FOR DETAILS.
EXISTING POST & WIRE FENCE
PROPOSED HARDCORE ENTRANCE ROAD
EXISTING HEDGE/ EMBANKMENT
EXISTING HEDGE LINE
EXISTING GRASS VERGE
EXISTING ROAD EDGE
EXISTING HEDGE LINE
EXISTING GRASS

PHOTO 1

PHOTO 2

PHOTO 3

POSITION OF PROPOSED REALIGNED HEDGEROW TO BE RECONSTRUCTED WITH CLAY/STONE

EXISTING HEDGEROW TO BE REALIGNED TO PROVIDE AN UNOBSTRUCTED LINE OF VISIBILITY

LINE OF SIGHT

RED LINE BOUNDARY

OSI Sheet(s): 4351

Project:	Ballynalacken Windfarm
Drawing Title:	Site Entrance No.10
	Drawing Number: BWF-36
Sheet Size: A1	Scale: 1:250
Drawn by: Conor Brett	Date produced: 24 February 2025

Conor Brett
Ecopower Limited
Zeus House, Purcellsinch IDA Business Park
Dublin Road, Kilkenny - R95 WY80
Landline - 056-7750140 (Ext 204)
Mobile - +353 (0)87-6531456

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AERIAL VIEW

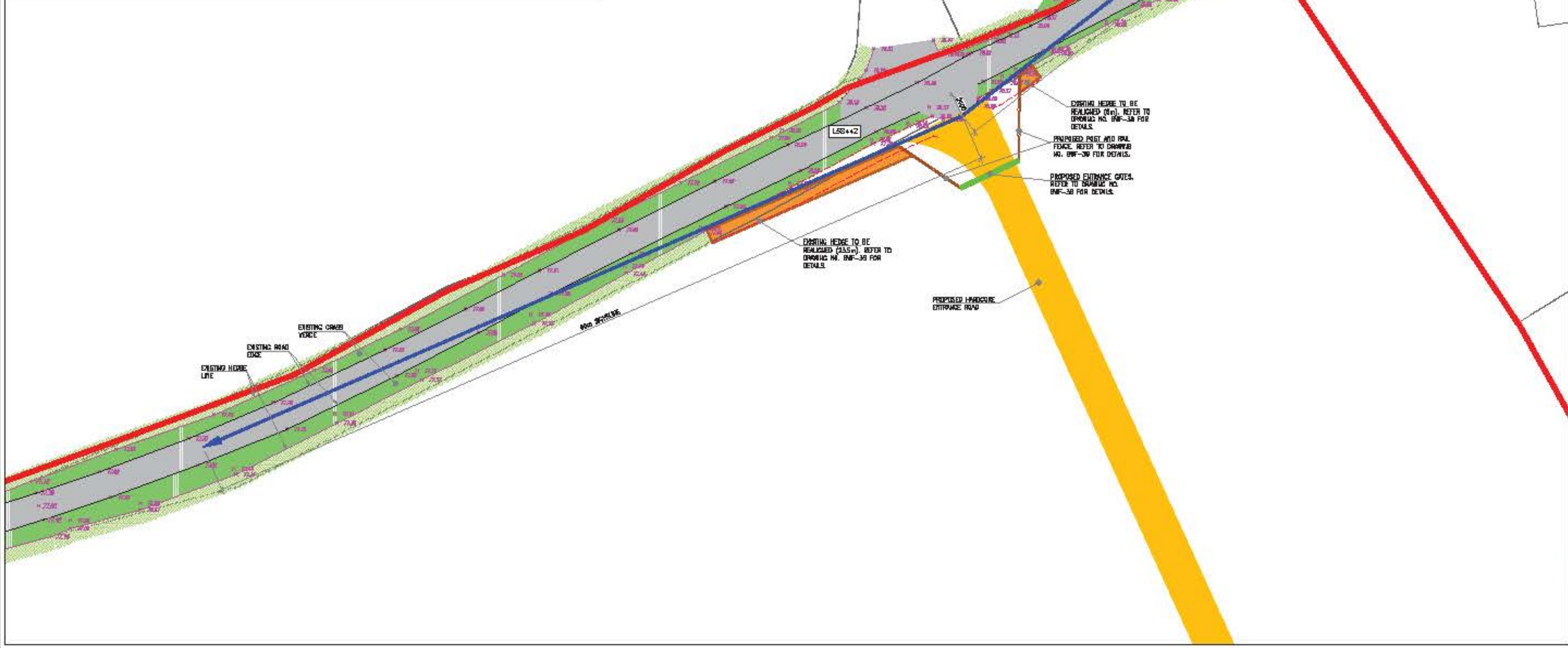
N.T.S.

PHOTO 1

N.T.S.

PHOTO 2

N.T.S.



POSITION OF PROPOSED REALIGNED HEDGEROW TO BE RECONSTRUCTED WITH CLAY/STONE

EXISTING HEDGEROW TO BE REALIGNED TO PROVIDE AN UNOBSTRUCTED LINE OF VISIBILITY

LINE OF SIGHT

RED LINE BOUNDARY

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OSI Sheet(s): 4408

Project: Ballynalacken Windfarm	
Drawing Title: Site Entrance No.11	
Drawing Number: BWF-37	
Sheet Size: A1	Scale: 1:250
Drawn by: Conor Brett	Date produced: 24 February 2025

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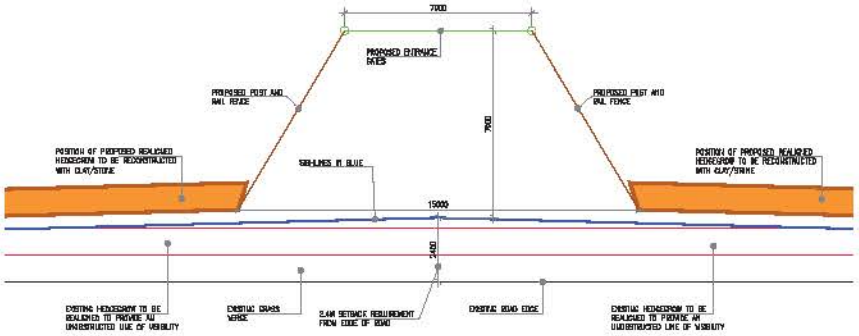
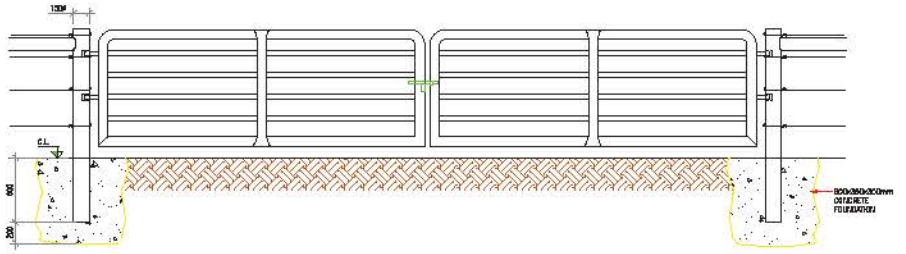


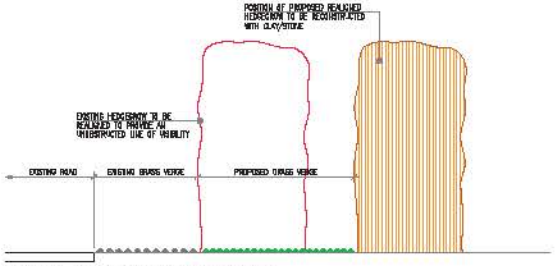
TYPICAL ENTRANCE LAYOUT

A1 SCALE: 1:100



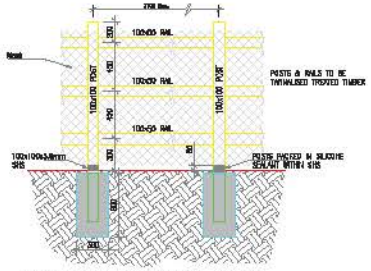
TYPICAL DOUBLE GALVANIZED STEEL GATE ELVATION

Scale A1 1:25



TYPICAL BOUNDARY REALIGNMENT

A1 SCALE: 1:25



TYPICAL POST AND RAIL DETAIL

A1 SCALE: 1:25

Project: Ballynalacken Windfarm	
Drawing Title: Typical Details for Site Entrance	
Drawing Number: BWF-38	
Sheet Size: A1	Scale: As shown
Drawn by: Conor Brett	Date processed: 24 February 2025

Conor Brett
Ecopower Limited
Zeiss House, Purcellsinch IDA Business Park
Dublin Road, Kilkenny - R95 WY80
Landline - 056-7750140 (Ext 208)
Mobile - +353 (0)87-6531458

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