



Clifton Scannell Emerson
Associates

Preliminary Design Report

Bóthar Stiofáin Cycle Network Scheme



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1 Introduction

Clifton Scannell Emerson Associates (CSEA) were commissioned by Galway County Council (GCC) to carry out consultancy services and PSDP role for the design of approximately 850m in length of cycle infrastructure along Bóthar Stiofáin, from the junction with Ragoon Road to the junction with Western Distributor Road.

The scheme is one of six routes that comprises the Galway Cycle Network Stage 2, which is approximately 6km in length. The Bóthar Stiofáin route is identified as part of a Primary Network in the Proposed Cycle Network from the Galway Transport Strategy.

1.1 Project Background

The overall aspiration of the proposed Galway Cycle Network Stage 2 is to provide a safe and comfortable environment for cyclists in the city and surrounding areas. As an area with relatively flat topography and a compact city centre, Galway is well suited to cycling as a means of transport. The cycle network proposed in the Galway Transport Strategy is intended to maximise the provision of high-quality dedicated cycling facilities and to improve measures giving priority to cyclists, encouraging uptake in cycling both for commuting and as a leisure activity in the city and surrounding areas.

The overall aspiration of the proposed Galway City cycle network is to provide a safe, comfortable environment for cyclists in the city and surrounding areas. As an area with relatively flat topography and a compact city centre, Galway is well suited to cycling as a means of transport. The cycle network proposed in the Galway Transport Strategy (GTS) is intended to maximise the provision of high-quality dedicated cycling facilities and to improve measures giving priority to cyclists, encouraging uptake in cycling both for commuting and as a leisure activity in the city and surrounding areas.

1.1.1 Preferred Option

The proposed solution, which emerged as the preferred option from an options study, proposes to install a 14m cross-section with 2m raised adjacent cycletracks on both sides of the road with some landtake required from eastern side, and zebra crossings on raised platforms at suitable intervals. The preliminary layout is shown in CSEA Drawing No's. 19_151-CSE-GEN-XX-DR-C-2107- 2109 (Appendix A). This solution will achieve the scheme objectives whilst providing the NTA and GCC with the best value-for-money design for the medium to long term.

1.2 Purpose of Preliminary Design Report

This Report has been prepared by Clifton Scannell Emerson Associates (CSEA) on behalf of GCC outlining the proposed works for the approximately 850m cycle infrastructure along Bóthar Stiofáin, from the junction with Ragoon Road to the junction with Western Distributor Road.

2 Project Description

2.1 *Need for the Scheme*

Galway City is undergoing an exciting and continual process of change in order to adapt and anticipate the needs of its current and growing population. The GTS proposes significant traffic management changes that will change the culture and expectation of mobility within the city. Such changes will contribute greatly to increased use of public transport and better utilisation of the public realm.

The scheme is one of six routes that comprises the Galway Cycle Network Stage 2. At approximately 6km long in total, these 6 routes run through and connect areas that are somewhat different in character. The challenge is to reconcile the complex and often competing demands for the available space through innovative design and engineering, and to secure stakeholder buy-in through robust analysis, effective communications, and certainty of quality of delivery. A number of the Stage 2 routes would benefit greatly from traffic management type solutions to make them self-enforcing low speed routes where cyclists are comfortable travelling on the carriageway with motorised traffic. Traffic management type solutions on some mature residential roads, combined with segregated facilities on wider busier carriageways, will lead to the development of a cycle network in a manner that best suits the competing community needs.

The Bóthar Stíofáin route is identified as part of a Primary Network in the Proposed Cycle Network from the GTS. The route typifies both the opportunity and the challenges of urban cycling in Galway City. At present, there is a latent demand for good cycle facilities in the west of Galway City as Knocknacarra is a large residential settlement, and surrounding trip attractors include Leisureland, Blackrock Diving Tower, and other outdoor amenities, NUIG, University Hospital Galway, Pearse Stadium on busy match and concert days, numerous schools, etc.

At present, the route is recognised as lacking the provision of quality cycle facilities, which discourage people from cycling within this area of Galway and to and from the city centre. In most cases, cyclists must share the road with the general traffic in traffic lanes that are wide enough to encourage unreasonably high speeds for the residential nature of these roads. The lack of proper cyclist facilities discourages some people from cycling even for short journey trips (e.g. less than 15minutes trips).

There is a need to provide high-quality facilities for pedestrians, cyclists and public transport in order to encourage people to switch to sustainable modes of transport and to provide safe and efficient movement of people within Galway City. This provision would be an investment in Galway City and County, its economy, environment and its public realm. The proposed scheme would create better quality public realm with visual enhancement of the area. This investment would facilitate increased pedestrian and cycle movement across the city improving connectivity between businesses, schools, housing, places of worship, etc creating more attractive and vibrant streets. It would also reduce dependence on the use of cars for short and short to medium trips reducing carbon footprint.

There is an opportunity with this scheme to reward the cycling and walking culture by delivering a high-quality pedestrian and cycling facilities along these popular routes and, in doing so, to reinforce the qualities and successes of the places through which it passes. The proposed scheme will not only increase accessibility and permeability within the study area but will also provide enhanced and safer connectivity with other areas and routes. Ultimately, the route should be delivered to improve safety, reduce journey times, and contribute towards increased numbers of trips being made by bicycle and by foot in the local catchment.

2.2 Description of the Scheme

The proposed scheme is identified as part of a Primary Network in the Proposed Cycle Network from the GTS. The cycle network proposed in the GTS is intended to maximise the provision of high-quality dedicated cycling facilities and to improve measures giving priority to cyclists, encouraging uptake in cycling both for commuting and as a leisure activity in the city and surrounding areas. Appendix F of the GTS deals specifically with Cycle network and Infrastructure Development. This Appendix sets out the development of the proposed cycle network for Galway City, including an audit process undertaken to identify engineering constraints, evaluate the feasibility and suitability of each cycle link with regard to these constraints and propose alternative facilities or mitigation measures to enable the implementation of the overall network. This project, Galway Cycle Network Stage 2, forms part of the Cycle Network Strategy within the GTS.

Appendix D of the GTS details an audit process undertaken to evaluate the feasibility and appropriateness of the proposed bus network developed for Galway City. In addition, Appendix B proposes a cross city public transport network serving east-west movements.

2.3 Scheme Objectives

The overriding purpose of the project is the delivery of continuous and consistent two-way cycle links or traffic calmed roads along the route (and for all routes comprising Stage 2 of the Galway Cycle Network). These links will be safe and attractive premium cycle routes that cater for commuting, leisure, tourist and family cycling, as well as improved accessibility for pedestrians.

The proposed scheme must not only increase accessibility and permeability within the immediate study area, but also provide enhanced and safer connectivity with other areas and routes. Ultimately the route should be delivered to improve safety, reduced vehicle speeds, reduce journey times, and contribute towards increased numbers of trips being made by bicycle and by foot in the local catchment.

Stage 2 of the Galway Cycle Network aims to provide improved pedestrian and cyclist facilities that provide high quality linkage from the city centre to the suburbs, including:

- Improvement of footpath & crossing facilities for vulnerable road users and pedestrians, e.g. reduced crossing delays and additional crossing locations for pedestrians;
- Provision of cycling facilities and improvements to cyclist priority and safety along the route, particularly at junctions;
- Reduce vehicle speeds and carriageway widths on self-enforcing traffic calmed roads where cycle facilities are on a shared road surface;
- To provide a safe and legible route for commuter, leisure and delivery cyclists to access the retail and residential premises along the route; and
- Introduce streetscapes that are conducive to cycling, ie; bollards instead of guard rails, providing shelter from wind/rain where possible, provision of smooth surfaces that are free from obstructions, routes that minimise inclines, reducing conflict points for cyclists by providing cyclist priority, avoidance of street clutter, removal of on street parking.

The proposed solutions will consider the impact on general traffic in the study area as these routes serve as links for public transport and private vehicles also. The proposed solutions will achieve the above objectives whilst providing GCC and the NTA with the best value-for-money design for the medium to long term. A multi-disciplinary approach reflecting the vision of the Design Manual for Urban Roads and Streets (DMURS) for an integrated design process and providing opportunities for improvement of the public realm for all will be taken in the design of this cycle route.

The Scheme aims to provide a local route that provides connectivity at a neighbourhood level by providing dedicated cycle facilities to access local retail outlets, hospitality services, workplaces, schools and sports clubs with residential hubs

The overall Scheme objective is to provide both a utility network (to connect residential, shopping, work and education centres for functional cycle trips) and a recreational network (to provide a route of sufficient length and quality to cater for exercise, social and tourism trips).

The objective of the Bóthar Stíofáin route is to provide a safe, direct, cohesive, comfortable and attractive cycle network. Table 1 shows specific route objectives for the route.

Route – Bóthar Stíofáin	
Scheme Objectives	<ul style="list-style-type: none"> • To provide a connection to the cycle facilities on the Western Distributor Road; • To introduce traffic calming measures (reduced carriageway width, zebra crossings etc) to enhance safety for vulnerable road users; • To provide a route that can cater for demand – this route, in particular, has a high density catchment from staff/customers accessing Gateway Retail Park; • To provide a safe cycle network with segregated cycle tracks to encourage uptake of cycling;
Target Users	Local residents, delivery cyclists, commuter cyclists, leisure cyclists, students/staff of Gaelscoil Mhic Amhlaigh, staff/customers of Gateway Retail Park and members/visitors of Galway Bohemians FC.

Table 1: Scheme Objectives – Bóthar Stíofáin

3 Policy Context and Design Guidance

The proposed facilities are to be implemented within an existing road corridor that is recognised as needing to cater for a variety of transport modes and uses. The existing infrastructure is considered substandard for some road users, particularly for cyclists. As such, the design of the dedicated cycle facilities on multi-modal corridor, will need to comply with a number of other relevant standards and guidance documents.

The following local, regional and national policy documents and relevant national design guidelines have been reviewed.

3.1 Local Policy

3.1.1 Galway City Development Plan 2023-2029

The Galway City Development Plan 2023-2029, published in 2022 by GCC sets out policies for the sustainable development of Galway City. The plan has been developed against a background of significant national policy changes to promote sustainable transport and reduce transport related greenhouse gas emissions. Travel demands for Galway City are increasing in conjunction with population growth and improvements to the transportation network will be essential if Galway is to become a sustainable, compact and connected city in line with national and regional policy direction.

Policy 4.4 of the Plan relates to 'Sustainable Mobility – Walk and Cycle'. The relevant policy points to this Scheme are outlined as:

1. Support the Galway Transport Strategy proposals for a primary cycle network to facilitate safe and convenient medium distance journeys.
2. Support the Galway Transport Strategy proposals for a secondary cycle network and feeder links to facilitate safe and convenient local journeys and to afford linkage into the primary cycle network.
4. Implement a structured programme of improvements across the whole city pedestrian network and at street crossings.
8. Promote, facilitate and maintain maximum connectivity and permeability for pedestrians and cyclists in the design and management of new public and private projects and in upgrading and retrofitting existing developments in accordance with the Design Manual for Urban Roads and Streets (2019) and Permeability a Best Practice Guide, NTA (2015).
9. Ensure facilities for pedestrians and cyclists are designed in accordance with national standards.
10. Promote the implementation of a Wayfinding Scheme with provision of directional information and signage at appropriate locations across the city as part of the implementation of the Public Realm Strategy.

3.1.2 BusConnects Galway

BusConnects Galway is an infrastructure project underpinned by the Galway City Development Plan, Project Ireland 2040 and the RSES with the aim to transform the city bus services. The objectives of the BusConnects projects are to:

- Connect – with 4km of multi-modal routes, creating new connections and links;
- Bus Patronage – Increase bus passenger numbers by 8% (average annual increase);
- Time – Bus priority to ensure journey saving times of up to 9minutes;
- Opportunity – Service future developments and create a network of connected amenities and services; and
- Growth – Cater for Galway's predicted population growth to reach 120,000 by 2040.

3.1.3 Galway Transport Strategy, August 2016

The GTS is an integrated transport management programme for Galway City and environs which was published in August 2016. *This Transport Strategy will facilitate Galway with an opportunity to grow both physically and economically, offering better transport choices, and creating a public realm to be enjoyed by residents and visitors alike.*

The Current Issues with respect to the movement of people and goods outlined in this Strategy that are particularly relevant to the proposed Galway Cycle Network Stage 2 scheme include:

- An over-reliance on private cars;
- Large amounts of residential development located proximate to major employment and educational destinations city-wide, but not readily accessible by walking, cycling or public transport, thereby encouraging travel by private car;
- Limited road space on most of the principal roads, which reduces opportunities for safe and comfortable cycling.

The Transport Strategy for Cycling includes that *'For cycling to provide a means of 'mass' movement in the city, it will be necessary to provide a 'core' network combining good segregation from traffic where practical, and traffic management elsewhere. Feeder networks will also need to be defined to fill the gaps between core corridors.'*

Chapter 7 of the Strategy relates to Cycling, Walking and Public Realm and Section 7.1 explains how the strategic objectives of the Strategy can be met as follows: *'overall aspiration of the proposed cycle network is to provide a safe and comfortable environment for cyclists in the city and surround areas, in turn supporting an increase in the number of cyclists and encouraging a greater modal shift from the private car to cycling.'*

It also notes that: *'As area with relatively flat topography and a compact city centre, Galway is well suited to cycling as a means of transport. However, the existing cycling facilities in the city and surrounding areas are limited and discontinuous. The cycle network proposed in this Transport Strategy is intended to maximise the provision of high quality dedicated cycling facilities and to improve measures giving priority to cyclists, encouraging uptake in cycling both for commuting and as a leisure activity in the city and surrounding areas.'*

Figure 1, below, is an extract from Figure 7.1 of the GTS showing the Proposed Cycle Network for the west of Galway City.

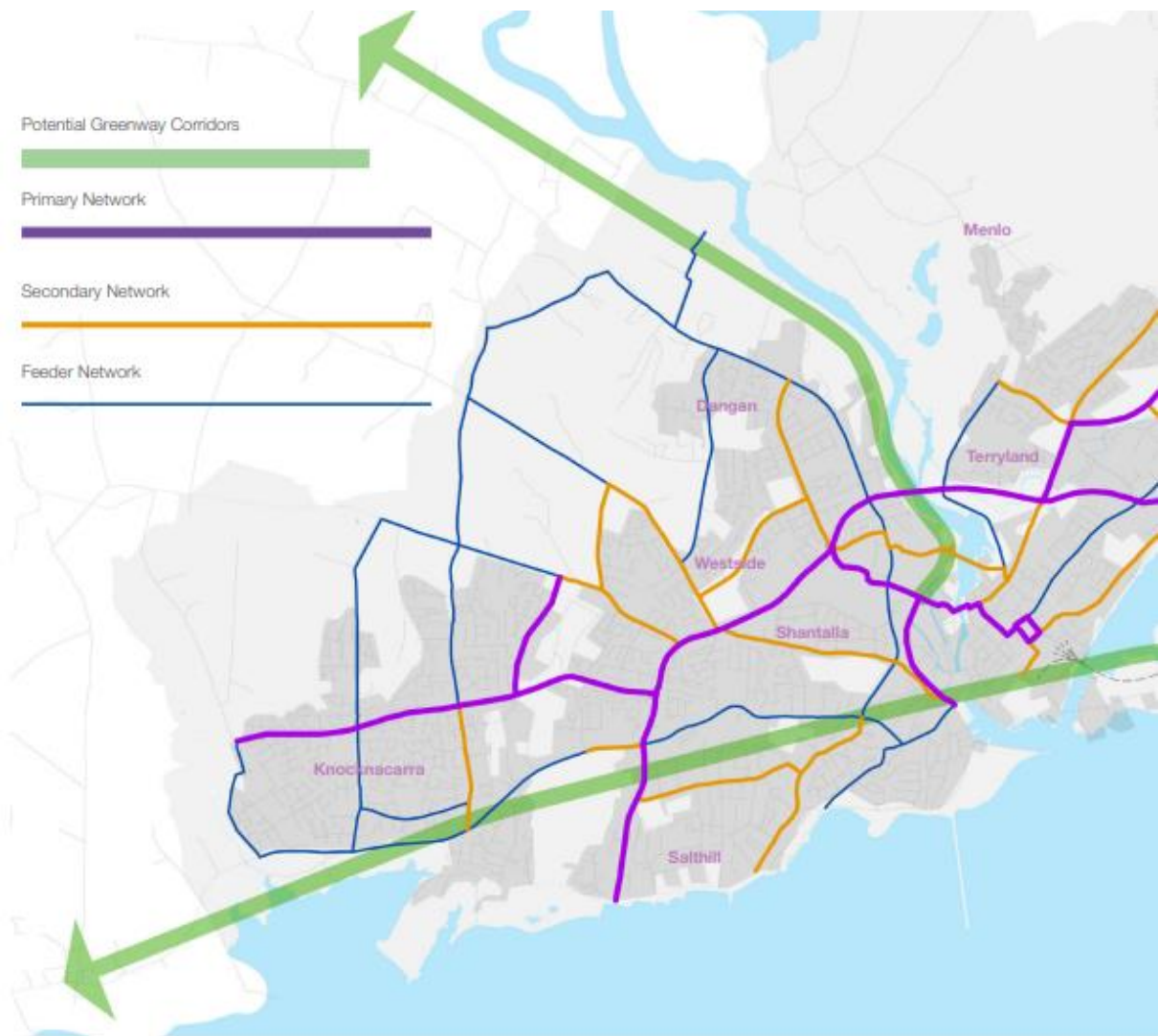


Figure 1: An extract from Figure 7.1 Proposed Cycle Network from the GTS

Bóthar Stíofáin is a Primary Route that ties into the Primary Route on the Western Distributor Road and Secondary/Feeder Route on Ragoon Road.

Figure 2, below, is an extract from Figure 5.1 of the GTS showing the Proposed Public Transport Network for the west of Galway City. Whilst Bóthar Stíofáin is not a proposed bus route, the scheme interacts with the proposed bus routes at Ragoon Road and Western Distributor Road.



Figure 2: An extract from Figure 5.1 Proposed Bus Routes from the GTS

Appendix F of the GTS sets out the development of the proposed cycle network for Galway City, including an audit of constraints, evaluation of feasibility and suitability of each link with regard to the constraints and proposals for alternative facilities or mitigation measures to enable implementation of the overall network.

Appendix F proposes the following cycling infrastructure summary for the proposed Bóthar Stíofáin route as part of Galway Cycle Network Stage 2:

Primary	Bóthar Stíofáin	Currently no facility in place. Proposal to install on-road cycle lanes on both sides of this section of road.	870 m
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Figure 3: Extract from Section F4.5 Knocknacarra North & Bushypark of Appendix F of the GTS

Appendix D of the GTS details an audit process undertaken to evaluate the feasibility and appropriateness of the proposed bus network developed for Galway City. This Appendix D proposes the public transport infrastructure summaries that interact with the proposed cycling scheme.

Although, Appendix B which proposes a cross city public transport network does not note Bóthar Stiofáin as being a part of the proposed BusConnects network.

3.1.4 Metropolitan Area Strategic Plan: Galway County Development Plan 2022 -2028

Chapter 6 of the Metropolitan Area Strategic Plan: Galway County Development Plan 2022 -2028 outlines aims to “encourage investment and improvements across all sectors of transport that will support targeted population, economic growth and more sustainable modes of travel including, walking, cycling and public transport”.

The plan recognises the benefits to the promotion of both walking and cycling including a reduction of congestion in urban areas, reduced greenhouse gas emissions, a healthier population, enhanced quality of life and more sustainable communities.

The relevant policy objectives for walking and cycling are:

- **WC 1 - Pedestrian and Cycling Infrastructure**

To require the design of pedestrian and cycling infrastructure to be in accordance with the principles, approaches and standards set out in the National Cycle Manual and the Design Manual for Urban Roads and Streets.

- **WC 3 - Sustainable Transport Movement**

To require sustainable transport movement to be given priority at the earliest design stage of development proposals.

- **WC 4 - Modern Network of Walking and Cycling Infrastructure**

To continue to work and engage with the National Transport Authority, the Department of Transport and other agencies in developing a modern network of walking and cycling infrastructure in the County.

3.2 Regional Policy

3.2.1 Regional Planning Guidelines for the West Region (2010-2022)

SG2 of the Regional Planning Guidelines for the West Region aims to *‘put in place an integrated sustainable transport and access infrastructure’* that, among other advantages, *‘minimises the need for car-based travel’*.

These RPGs include the following relevant policy objectives:

IO9: Support the sustainable development of an integrated transportation system for Galway City and County Areas;

IP13: Promote on-going Traffic Management policies and plans... ..with particular emphasis on measures to facilitate public transport, walking and cycling;

IP21: Promote a better environment for pedestrians, cyclists and persons with disabilities... ..so as to facilitate increased mobility and access for citizens;

IO32: Promote the development of safe and convenient pedestrian and cycling facilities in Galway City... ..to minimise the dependence on private motor vehicles and to encourage an active and healthy lifestyle.

3.2.2 Regional Spatial and Economic Strategy for the Northern and Western Region (RSES)

The RSES 2020-2032 for the Northern and Western Assembly is a strategic development framework published by the Northern and Western Regional Assembly and sets out a vision for the sustainable physical, economic and social development of the region and provide guidance for local level policies. The relevant priorities from the RSES are;

- Provision of a core, secondary and feeder cycle network which includes segregated cycle routes, on-road cycle lanes and /or wide bus lanes to cater for both buses and cyclists along the same route;
- Provision of a primary network of cycle routes comprising of two greenways connecting into the county settlements – the Oranmore to the City Centre and onwards to Bearna Greenway and City Centre to Oughterard Greenway;
- Provision of additional primary routes including cross-city routes to the north of the city and some key north –south links;
- Develop a secondary cycle network that will comprise connections from residential areas and areas of employment to the primary network accessing key destinations;
- Promotes appropriate public transport services – rail or bus transport and other sustainable modes of travel such as walking and cycling;
- Provide for Park and ride facilities on the periphery of the city linked in with the bus network to reduce the amount of commuter traffic entering into the city;
- Development of a cross-city network of bus services which can serve the major trip attractors with five core bus routes to provide a minimum 15-minute frequency service during the peak periods and sustain a high-frequency service throughout the day; and
- Support the extension of the public transportation options available to the travelling public throughout the region through the pursuit of a variety of options, including new/additional Quality Bus Corridors, commuter rail service, and appropriately located park and ride facilities, particularly in relation to the Gateway, the Tuam Hub, the Linked Hub Castlebar/Ballina and other towns such as Ballinasloe, Gort and Claremorris. Consideration should also be given, where appropriate, to the creation of additional lanes or alteration to existing lanes for Quality Bus Corridors on the main commuter routes into the Gateway, Hub and Linked Hub

3.3 National Policy

3.3.1 National Investment Framework for Transport in Ireland (NIFTI)

The National Investment Framework for Transport in Ireland (NIFTI) is the Department of Transport's framework for prioritising future investment in the land transport network to support the delivery of the National Strategic Outcomes. This will ensure that investments made will contribute to Ireland's decarbonisation efforts, support vibrant and successful communities, deliver a high-performing transport system, and promote a strong and balanced economy. NIFTI has been developed to ensure sectoral investment is aligned with the National Planning Framework (NPF) and supports the delivery of the ten National Strategic Outcomes (NSOs).

Having been identified as the second largest source of Irish greenhouse gas emissions, the transport sector will have to significantly decarbonise in the decades ahead for Ireland to meet its climate change goals and minimise the damage from climate breakdown, such as more frequent extreme weather events, rising sea levels and population displacement. As the economy has grown in recent years, transport activity and emissions have risen also, and the correlation between emissions and economic growth must be broken. This will require considerable investment in walking, cycling and public transport, which will also bring environmental benefits in terms of air quality and noise pollution. Tackling

congestion through the provision of sustainable mobility also lessens the amount of time people spend commuting each day and leads to improvements in public health.

Section 2.4 of the NIFTI Framework states that one of its main purposes is to “*Deliver Clean, Low-Carbon and Environmentally Sustainable Mobility*”. Furthermore, the reduction in greenhouse gas emissions is a foremost priority. It is a national objective to achieve a low-carbon, economically competitive and environmentally sustainable economy by 2050. NIFTI will support investment in public transport, walking and cycling within cities and large towns to encourage modal shift away from the private car.

3.3.2 National Sustainable Mobility Policy

The National Sustainable Mobility Policy sets out a strategic framework to 2030 for active travel (walking and cycling) and public transport journeys to help Ireland meet its climate obligations. It is accompanied by an action plan to 2025 which contains actions to improve and expand sustainable mobility options across the country by providing safe, green, accessible and efficient alternatives to car journeys. It also includes demand management and behavioural change measures to manage daily travel demand more efficiently and to reduce the journeys taken by private car.

The policy aims to deliver at least 500,000 additional daily active travel and public transport journeys by 2030 and a 10% reduction in the number of kilometres driven by fossil fuelled cars. It will make it easier for people to choose walking, cycling and use public transport daily instead of having to use a petrol or diesel car.

The National Sustainable Mobility Policy Action Plan has included the following as part of its *Core Actions* in achieving its goal of “*Expanding availability of sustainable mobility in regional and rural areas*”:

- *Develop pedestrian enhancement plans for the regional growth centres and key towns.*
- *Develop and publish cycle network plans for all counties.*

The policy supports *Safe and Green Mobility* by:

- *Continuing to protect and maintain the safety of existing walking, cycling and public transport networks and ensuring that new sustainable mobility infrastructure meets the highest safety standards.*
- *Developing pedestrian enhancement plans and cycle network plans to guide investment in new active travel infrastructure and retrofitting of existing infrastructure.*

Cycle network plans will be developed for all counties to guide investment in cycling infrastructure, including both new infrastructure and retrofitting of existing infrastructure, in order to develop a network of cycle routes for each county. In tandem with this, a strategic national cycle network will be identified, providing key inter-urban links and enabling the continued development and delivery of that network. The rollout of active travel infrastructure projects in local communities will be supported by staff resources dedicated to active travel projects in local authorities and National Roads Offices around the country.

The five benefits of Active Travel that can be capitalised on are identified as:

- Environmental - reduced levels of carbon emissions and greenhouse gases;
- Health - improved levels of fitness and public health generally from increased activity;
- Safety - increased levels of active travel can stimulate the increased provision of quality footpaths and cycle paths by public authorities;
- Economic - increased active travel usage can lead to reduced congestion levels and improved accessibility in urban areas; and
- Social - increased provision for active travel modes can drive improved transport equity.

The road user hierarchy, as set out in the National Sustainable Mobility Policy, states that the order of consideration to encourage sustainable travel patterns and safer streets is shown in Figure 3-1.

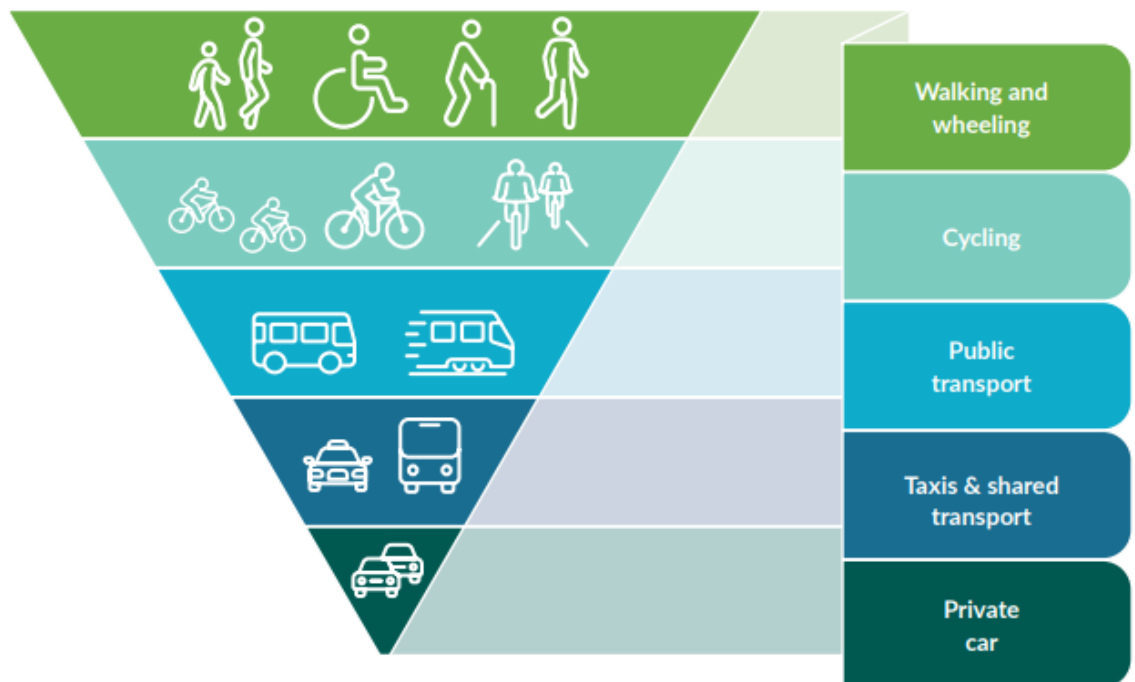


Figure 3-1 Road User Hierarchy from the National Sustainable Mobility Policy

Walking is recognised as the most sustainable form of transport. Furthermore, all journeys begin and end on foot. By prioritising design for pedestrians first, the number of short journeys taken by car can be reduced and public transport made more accessible.

3.3.3 National Development Plan 2018-2027

The National Development Plan sets out the investment priorities that will underpin the successful implementation of the new National Planning Framework (NPF). This will guide national, regional, and local planning and investment decisions in Ireland over the next two decades.

The NDP emphasises the need to provide “safe alternative active travel options such as segregated cycling and walking facilities can also help alleviate congestion and meet climate action objectives by providing viable alternatives and connectivity with existing public transport infrastructure”.

The NDP encourage a significant “modal shift through greater levels of investment and further development of meaningful alternatives to private car uses, such as new urban cycling and walking routes which will provide additional sustainable travel options.”

3.3.4 Climate Action Plan 2023

The Climate Action Plan 2023, published by the Department of the Environment, Climate and Communications, outlines the Irish Government’s plan for tackling the negative impacts that have been brought about as a result of climate breakdown, such as the risk of more frequent extreme weather events and flooding. It outlines the current state of play across key sectors including Electricity, Transport, Built Environment, Industry and Agriculture and charts a course towards ambitious decarbonisation targets. The Climate Action Plan sets a roadmap for taking decisive actions to halve

Ireland's omissions by 2023 and reach net zero emissions by 2050 and aims to create a more resilient, vibrant and sustainable country.

Under the Climate Action and Low Carbon Development (Amendment) Act 2021, Ireland's national climate objective requires the State to pursue and achieve, by no later than the end of the year 2050, the transition to a climate-resilient, biodiversity-rich, environmentally sustainable and climate-neutral economy. The Act also provides for a reduction of 51% in GHG emissions by 2030, compared to 2018 levels. Our statutory national climate objective and 2030 targets are aligned with Ireland's obligations under the Paris Agreement and with the European Union's objective to reduce GHG emissions by at least 55% by 2030, compared to 1990 levels and to achieve climate neutrality in the European Union by 2050.

Climate Action Plan 2023 action measures related to active travel include:

- Action No. TR/23/29: Advance roll out of 1,000km walking / cycling infrastructure.
- Action No. TR/23/30: Advance roll out of National Cycle and Greenway Networks.
- Action No. TR/23/31: Advance widespread and consistent implementation of National Cycle Manual guidance and the Design Manual for Urban Roads and Streets (DMURS) with the Department of Housing, Local Government and Heritage (DHLGH).
- Action No. TR/23/32: Leverage of Protection and Renewal road infrastructure programme to enhance safety of sustainable mobility users.
- Action No. TR/23/34: Identify and implement mechanisms for improved multiple Local Authority delivery of strategic, network-based Active Travel projects (e.g., NTA-led projects, Section 85 agreements under the Local Government Act 2001) in line with the objective of CycleConnects pathfinder project.

Ireland's EU Climate Targets

In its approach to decarbonising, the EU has split GHG emissions into two categories, the Emissions Trading System (ETS) and the non-ETS.

Emissions from electricity generation and large industry in the ETS are subject to EU-wide targets which require that emissions from these sectors be reduced by 43% by 2030, relative to 2005 levels. Within the ETS, participants are required to purchase allowances for every tonne of emissions, with the amount of these allowances declining over time to ensure the required reduction of 43% in GHG emissions is achieved at EU level.

Emissions from all other sectors, including agriculture, transport, buildings, and light industry are covered by the EU Effort Sharing Regulation. This established binding annual GHG emission targets for Member States for the period 2021–2030. Ireland is required to reduce its emissions from these sectors by 30% by 2030, relative to 2005 levels.

Under the EU Green Deal, the targets for the ETS and non-ETS sectors will be revised upwards in order to achieve the commitment, at EU level, to reach an economy-wide 2030 reduction in emissions of at least 55%, compared to 1990 levels. Legislative proposals to implement these targets were published in July 2021. Tripartite negotiations between representatives of the European Parliament, Council and Commission commenced in the second half of 2022. Provisional agreement has been reached on a number of proposals with a view to reaching agreement as soon as possible on all proposals to underpin the EU's enhanced ambition.

3.3.5 Healthy Ireland Strategic Action Plan 2021 – 2025

Healthy Ireland is the national framework for action to improve the health and wellbeing of everyone living in Ireland.

Keeping Active is one of the priority focus areas for Healthy Ireland for 2021–2023 and includes encouraging workplaces to facilitate workers who walk, cycle or run to work. Other actions include increasing the Cycle Right Programme to ensure that all children are offered cycling training in primary school, widening the eligibility of the Bike to Work scheme to provide an increased proportionate allowance for e-bikes and cargo bikes and promoting the take up of walking and cycling in urban areas. Healthy Ireland actions also include investing in strategies for the development at local level of walking, swimming, cycling and running, in partnership with Sport Ireland.

As part of the Action Plan, the following are outlined as part of the Healthy Cities and Counties Setting which is relevant to this project scheme:

- Promote the implementation of the Design Manual for Urban Roads and Streets (2013) which incorporates good planning and design practice to support and encourage active travel (walking and cycling) in urban areas.
- Strengthen the Healthy Cities and Counties Infrastructure to deliver on the Healthy Cities and Counties goals.

3.3.6 National Cycle Policy Framework (NCPF)

The NCPF framework provides a common, integrated basis for the long-term development and implementation of cycling policies among various sectors and levels of government and is a powerful tool to encourage cycling in urban areas. There are 19 objectives developed in the NCPF framework which are classified under the headings of Infrastructure, Communication/Education, Financial Resources, Legislation and Enforcement, Human Resources and Coordination and Evaluation and Effects. The objectives are as follows:

- Objective 1: Support the planning, development and design of towns and cities in a cycling and pedestrian-friendly way.
- Objective 2: Ensure that the urban road infrastructure (with the exception of motorways) is designed/ retrofitted so as to be cyclist-friendly and that traffic management measures are also cyclist-friendly.
- Objective 3: Provide designated rural cycle networks especially for visitors and recreational cycling.
- Objective 4: Provide cycling-friendly routes to all schools, adequate cycling parking facilities within schools, and cycling training to all school pupils.
- Objective 5: Ensure that all of the surfaces used by cyclists are maintained to a high standard and are well-lit.
- Objective 6: Ensure that all cycling networks – both urban and rural – are signposted to an agreed standard.
- Objective 7: Provide secure parking for bikes.
- Objective 8: Ensure proper integration between cycling and public transport.
- Objective 9: Provide public bikes in cities.
- Objective 10: Improve the image of cycling and promote cycling using “soft interventions” such as promotional campaigns, events, etc.
- Objective 11: Improve cyclists’ cycling standards and behaviour on the roads.
- Objective 12: Improve driver education and driving standards so that there is a greater appreciation for the safety needs of cyclists.
- Objective 13: Support the provision of fiscal incentives to cycle.
- Objective 14: Provide appropriate levels of, and timely, financial resources towards implementing the NCPF.
- Objective 15: Introduce changes to legislation to improve cyclist safety.
- Objective 16: Improve enforcement of traffic laws to enhance cyclist safety and respect for cyclists.
- Objective 17: Develop a structure that can coordinate the implementation of activities across the many Government Departments, Agencies and NGO’s.
- Objective 18: Provide design professionals with suitable training/guidance to develop and implement the policies of the NCPF. Support the deepening of knowledge of the subject of planning for cyclists in Ireland.
- Objective 19: Evaluate the cycling policy and monitor the success as the measures are implemented.

The NCPF's vision is that all cities, towns, villages and rural areas will be bicycle-friendly, and cycling will be a normal way to get about, especially for short trips. Next to walking, cycling will be the most popular means of getting to school, work and other purposes and will become the transport mode of choice for all ages.

3.4 Design Guidance

3.4.1 Design Manual for Urban Roads and Streets

This document provides guidance relating to the design of urban roads and streets. It outlines principles, approaches and standards that are necessary to achieve balanced, best practice design outcomes with regard to street networks and individual streets. This Manual sets out an integrated design approach influenced by the type of place in which the street is located and balance the needs of all users. It also aims to put well designed streets at the heart of sustainable communities creating physical, social and transport networks that promote real alternatives to car journeys, namely walking, cycling and public transport. The manual key design principles are as follows:

- To support the creation of integrated street networks, which promote higher levels of permeability and legibility for all users, and in particular more sustainable forms of transport.
- The promotion of multi-functional, place-based streets that balance the needs of all users within a self-regulating environment.
- The quality of the street is measured by the quality of the pedestrian environment
- Greater communication and co-operation between design professional through the promotion of a plan-led, multidisciplinary approach design.

This document was published by the Irish Government as a high-level strategic plan for shaping the future growth and development of Ireland out to the year 2040. It has been created as a guide for public and private investment to help create and promote economic opportunities and sustainable cities.

The NPF aims to “*Enable more effective traffic management within and around cities and re-allocation of inner-city road-space in favour of bus-based public transport services and walking/cycling facilities*”.

The following objectives, relevant to the design of cities and sustainability, are listed within the NPF:

National Objective 4 - *Ensure the creation of attractive, liveable, well designed, high quality urban places that are home to diverse and integrated communities that enjoy a high quality of life and well-being.*

National Objective 6 - *Regenerate and rejuvenate cities, towns and villages of all types and scale as environmental assets, that can accommodate changing roles and functions, increased residential population and employment activity and enhanced levels of amenity and design quality, in order to sustainably influence and support their surrounding area.*

National Objective 27 - *Ensure the integration of safe and convenient alternatives to the car into the design of our communities, by prioritising walking and cycling accessibility to both existing and proposed developments and integrating physical activity facilities for all ages.*

Project Ireland 2040 was launched as part of the National Planning Framework (NPF) with the purpose to provide a high-level strategic plan to improve transport, tourism and sport infrastructure by 2040. These goals are expressed in this Framework as National Strategic Outcomes (NSOs), which includes:

- Compact Growth
- Enhanced Regional Accessibility
- Strengthened Rural Economies and Communities
- Sustainable Mobility

- A Strong Economy, supported by Enterprise, Innovation and Skills
- High-Quality International Connectivity
- Enhanced Amenities and Heritage
- Transition to a Low Carbon and Climate Resilient Society
- Sustainable Management of Water, Waste and other Environmental Resources
- Access to Quality Childcare, Education and Health Services

3.4.2 Cycle Design Manual

The Cycle Design Manual (CDM), published in 2023 by the National Transport Authority (NTA) and approved by the Department of Transport, sets out the best practice design of cycle infrastructure in Ireland. The documents guides the delivery of safe cycling infrastructure to encourage more people to cycle as a regular mode of transport is strongly supported by a preceding national policies and plans.

It notes that for cycle infrastructure to cater for the needs of people who currently cycle and to also attract new cycle users to the network, there are five main requirements which designs should fulfil under the headings of:

1. Safety
2. Coherence
3. Directness
4. Comfort
5. Attractiveness

There are six key design principles that allow for the planning, designing, implantation and maintenance of a cycle network that can cater to all types of cycle vehicles and cycle abilities by means of links with appropriate facilities and width. The key design principles are;

1. Safe system approach
2. Promoters of cycle facilities should cycle
3. Network approach
4. Segregation
5. Everyday mobility
6. Universal Design and Inclusive Mobility

The manual offers detailed typical layouts for cycle facilities and therefore serves as the leading guidance for cycle infrastructure nationwide.

3.4.3 Traffic Signs Manual

The Traffic Signs Manual provides details of the traffic signs which may be used on roads in Ireland, including their layout and symbols, the circumstances in which each sign may be used and rules for positioning them for the efficient operation of the road network. It also provides guidance on the temporary traffic measures required at roadworks.

To be effective, traffic signs must be readily recognized as such and must:

- Have messages which can be quickly read and understood;
- Be co-ordinated with the geometric road layout so they are conspicuous by day and night; and
- Be located far enough in advance of the situation to give sufficient time for the road user to take the appropriate action.

The Traffic Signs Manual is published into nine chapters namely:

Chapter 1: Introduction and Sign Location

- Chapter 2: Directional Information Signs
- Chapter 3: Variable Message Signs
- Chapter 4: Other Information Signs
- Chapter 5: Regulatory Signs
- Chapter 6: Warning Signs
- Chapter 7: Road Markings
- Chapter 8: Temporary Traffic Measures and Signs for Roadworks
- Chapter 9: Traffic Signals

The overseeing organisation for the purposes of this Manual is either Transport Infrastructure Ireland (TII) for national roads or the Department of Transport, Tourism and Sport (DTTAS) for regional and local roads.

3.4.4 Traffic Management Guidelines and Accessibility Guidance

The purpose of this guideline is to provide guidance on a variety of issues including traffic planning, traffic calming and management, incorporation of speed restraint measures in new residential designs and the provision of suitably designed facilities for public transport users and for vulnerable road users such as cyclists, motorcyclists and pedestrians including those with mobility/sensory impairments. It also focuses on how these issues must be examined and implemented in the context of overall transportation and land use policies.

4 Constraints

A review of the site of the proposed road development identified the following main constraints within and directly adjacent to the site.

4.1 Residential, Businesses, Schools and Parks

There are a number of constraints to consider when developing improvement works along the Bóthar Stíofáin route. Most of the constraints relate to the lack of available space to develop cycling infrastructure outside of private property boundaries, existing traffic flows and speeds and parking. The key constraints and opportunities for the route are given in Table 2 and are shown on CSEA Drawing No.'s 19_151-CSE-GEN-XX-DR-C-1101 (Appendix B).

Route – Bóthar Stíofáin	
Land Use	Residential
Existing Carriageway	Mostly standard two-lane carriageway, with some right turn facilities. Typical width of 7m kerb to kerb, 11-13m boundary to boundary.
Parking/Loading	Residential properties along the route have driveways. On-street parking also occurs. No loading provision.
Public Transport	Bus route and bus stops for Routes 411 and 412.
Traffic	<p>AADT: 4,200 vehicles (0.72% HGV)</p> <p>85th Percentile Speed: 52 km/hr (NB) 55 km/hr (SB)</p>
Landscaping	Some trees and verges on western boundary. Extensive trees and planting and grass verges on eastern boundary.
Utilities	<p>Underground MV/LV ESB, watermain, foul/combined, surface water, Eir, ENET and Virgin Media running along the length of Bóthar Stíofáin with multiple crossing points and sometimes the same service running on both sides of the road.</p> <p>Underground HV ESB on Western Distributor Road and Ragoon Road.</p> <p>Overhead LV ESB none known.</p> <p>Gas on Western Distributor Road.</p>

Table 2 Summary of Key Constraints along Bóthar Stíofáin

4.2 Utilities

The following utilities exist within the scheme extents:

- Underground MV/LV ESB;
- Underground HV ESB (none known, but possible);
- Watermain;
- Foul/combined;
- Gas;
- Virgin Media; and
- ENET;

4.3 Existing Road Network

Bóthar Stiofáin provides one lane of traffic in each direction with a footpath along the west side. The traffic lanes are 4.0m wide and the footpath is 2m wide.

4.4 Existing Trees

There are trees located intermittently along the west side of the carriageway. The east side is extensively covered by trees.

5 Design Data Collection

5.1 Topographical Survey

A topographical survey of the site was carried out of the scheme extents by APEX Surveys in Spring/Summer 2020 and has been incorporated in developing the preliminary layout.

5.2 Underground Utilities Survey

Records of underground utilities have been collected from the relevant statutory bodies and have been incorporated in developing the preliminary layout.

5.3 Tree Survey

A tree survey was carried out by ArborCare in September 2020 consisting of an on-site tree survey, tree inventory report, Arboricultural Impact Assessment Report and Tree Protection Management Plan which has been incorporated in developing the preliminary layout.

5.4 Traffic Survey

Traffic volumes were recorded by IDASO as part of a 12hr classified traffic count on Thursday November 14th 2019. The traffic count was carried out as part of an annual traffic count commissioned by GCC and records made available.

It should be noted that more up to date traffic volumes would not be worthwhile as traffic volumes are heavily influenced by the government enforced COVID-19 restrictions against non-essential work, non-essential travel, organised events and social gatherings. The restrictions have been in effect, to varying degrees, since March 2020 and an end is not yet forecast.

5.5 Environmental Survey

An environmental survey was carried out by Doherty Environmental in February 2021 consisting of an on-site environmental survey, which has been incorporated in developing the preliminary layout.

5.6 Architectural Conservation Survey

A Stage 2 Architectural Conservation survey of the proposed scheme was carried out in relation to the the stone walls along the north-eastern edge of the route, near the junction of Ragoon Road.

The assessment determined that:

“There are no buildings or other structures of architectural heritage significance along the proposed route for the cycleway in this location, other than the possibility that there are surviving sections of the field boundary walls concealed beneath vegetation.

In view of the above it is not considered that there will be any architectural heritage impact arising from the proposed cycleway along Bóthar Stiofáin.”

The Architectural Conservation Report is shown in Appendix C.

6 Traffic Assessment

The route provides for motor vehicles, cyclist and pedestrian with access to private properties and limited on-street parking has been observed. The route can be broken into four no. sections to illustrate the traffic arrangements, as described in Table 3.

Section	Location (approx.)	Length (approx.)	Traffic Arrangement
A	Bóthar Stíofáin (From Rahoon Road to Riasc Na Rí)	340m	Two-way vehicular access on a carriageway of width 4.0m and a footpath of width 1.8m provided on the east.
B	Bóthar Stíofáin (From Riasc Na Rí to Clochard)	140m	Two-way vehicular access on a carriageway of width 4.0m, verge width of 2.2m and a footpath of width 1.8m provided on the east.
C	Bóthar Stíofáin (From Clochard to Gateway Retail Park Access)	300m	Two-way vehicular access on a carriageway of width 4.0m, verge width of 2.2m and a footpath of width 1.8m provided on the east.
D	Bóthar Stíofáin (From Gateway Retail Park Access to Western Distributor Road)	70m	Two-way vehicular access on a carriageway of width 4.0m and a footpath of width 1.8m provided on the east.

Table 3 Existing Traffic Arrangement along Bóthar Stíofáin

6.1 Traffic Volumes

The AADT of Bóthar Stíofáin is 4,200 vehicles with a HGV share of 0.72%.

The 85th percentile speeds are 52km/hr in the northbound direction and 55km/hr in the southbound direction.

6.2 Public Lighting

The public lighting along the route is being upgraded as part the 'Public Lighting Lantern Upgrade Project 2020' commissioned by GCC and designed by Electric Skyline and will run in parallel with the scheme. This scheme is separate to the works but its impact is noted.

The public lighting design will achieve the Lighting Standard P2-BS 5489-1:2020.

The public lighting detail is shown in Appendix D.

6.3 Traffic Collision Survey

The Road Safety Authority (RSA) has not published any data on road traffic collisions since 2016 on its online mapping tool – CollStats. It is currently reviewing their road traffic collision (RTC) data sharing policies and procedures in light of General Data Protection Regulation (GDPR) requirements. Therefore, recent data showing the history of road collisions along the project scheme is not available as of the

moment. However, a collision survey was undertaken for area within and surrounding the scheme extents was analysed before the website went offline.

Available data for the most-recent five years (2012 – 2016) were included in the data analysis. While the data on the database does not contain detailed records by An Garda Síochána (e.g. road surface, weather, lighting conditions), the CollStats data provides a good initial picture of the existing collision problems.

The site is a mostly residential route which connects to links that see high motor, cyclist and pedestrian volumes. The roadways contained within the scheme and their connecting junctions to the local road network were analysed as the substantial traffic volumes from the in the local surrounds minimise the traffic impact of traffic travelling to and from the site location.

Figure 5 shows the RSA Collision Map showing the extent of the area for which data was analysed and Table 4 shows a summary of the recorded collisions.



Figure 5: RSA Collision Map with the Study Area Circled in Red

Location	Severity	Vehicle	Type	No. of Casualties	Year	Day	Time	Speed Limit
Bóthar Stíofáin, Junction with Ragoon Road	Minor	Car	Angle, both straight	3	2016	Thursday	16:00-19:00	50kph

Table 4: Location of Collisions

Within the study area, just one collision was recorded in the timeframe. This scarcity of data makes it unfeasible to identify a clearly defined pattern of collision severity, type and time and spread of location within the study site. This is reflective of the residential streetscape, with access intermittently provided to cul-de-sacs. Therefore, it can be concluded that the road configuration, which is broadly similar to the proposed layout does not negatively impact road safety.

7 Design Strategy – Geometrics and Safety

7.1 Design Basis

The design has been prepared in accordance with the design guidance documents that are shown in Section 3.4.

7.2 Existing Roadway Arrangement

The existing roadway typically consists of two-way carriageway and footpath on the western side. There is intermittent use of one street parking and verges are also intermittently provided.

The traffic lanes are 4.0m wide and the footpath is 2.0m wide.

7.3 Design Speed

In accordance with Chapter 4.1.1 of DMURS and due to the proposed route classed as 'Link' in a 'suburban area', a 50km/hr speed limit is proposed to be imposed for the proposed road scheme, with a design speed limit of 50km/hr.

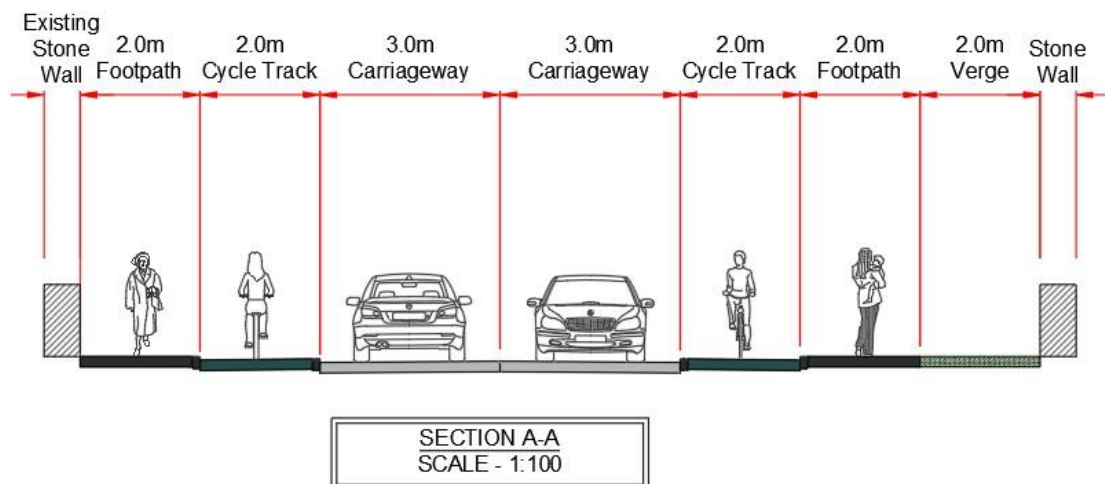
7.4 Design Parameters

In accordance with Table 4.2 of DMURS, the minimum stopping sight distance (SSD) for a design speed of 50kph is 45m.

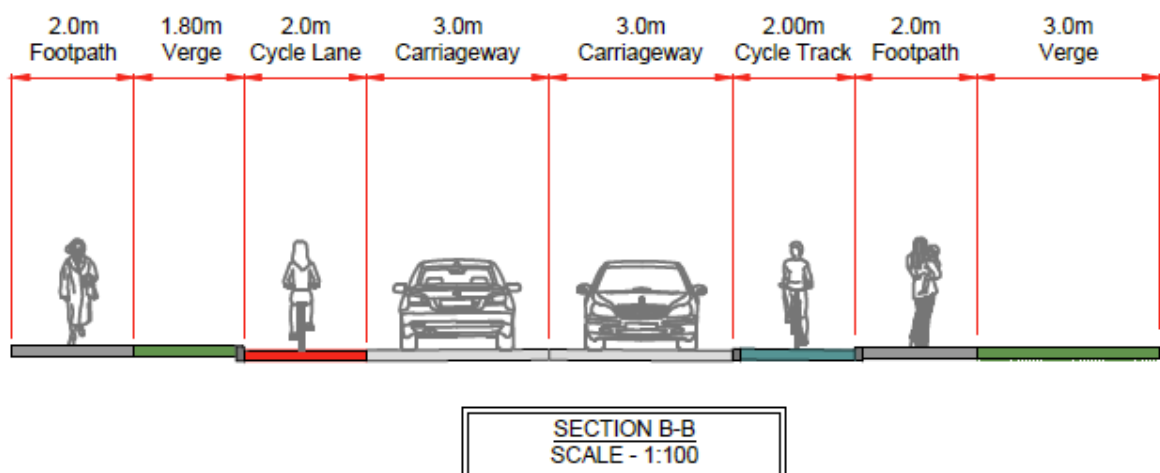
7.4.1 Proposed Road Type and Mainline Cross-Section

The route mostly provides for pedestrian and cyclists with limited vehicular access to private properties and on-street parking facilities. The route can be broken into four no. sections to illustrate the traffic arrangements, as described in Table 5 and shown in CSEA Drawing No's. 19_151-CSE-GEN-XX-DR-C-2107- 2109 (Appendix A).

Section	Location (approx.)	Length (approx.)	Traffic Arrangement
A-A	Bóthar Stíofáin (From Rahoon Road to Riasc Na Rí)	340m	Two-way vehicular access on a carriageway of width 3.0m. A 2.0m cycle track and 2.0m footpath is provided in each direction.



B-B	Bóthar Stíofáin (From Riasc Na Rí to Clochard)	140m	Two-way vehicular access on a carriageway of width 3.0m. The west side provides a 2.0m footpath, 1.80m verge and a 2.0m cycle lane. The east side provides for a 2.0m cycle track 2.0m footpath and 3.0m verge.
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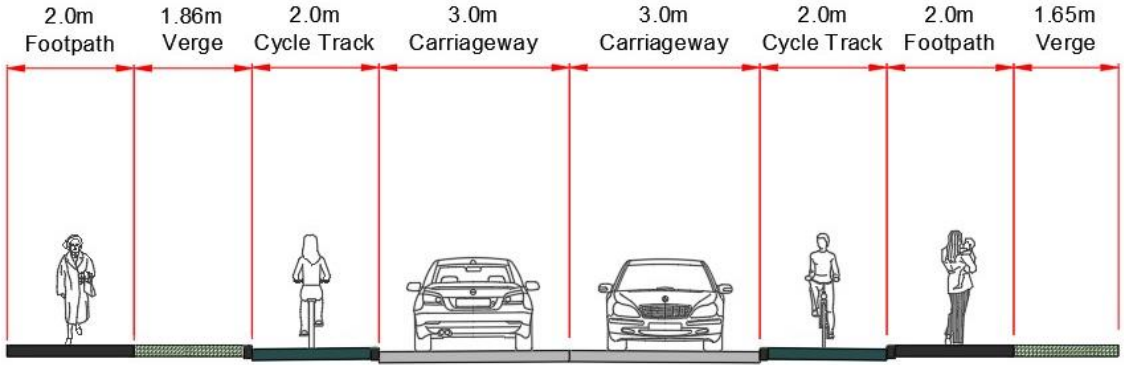
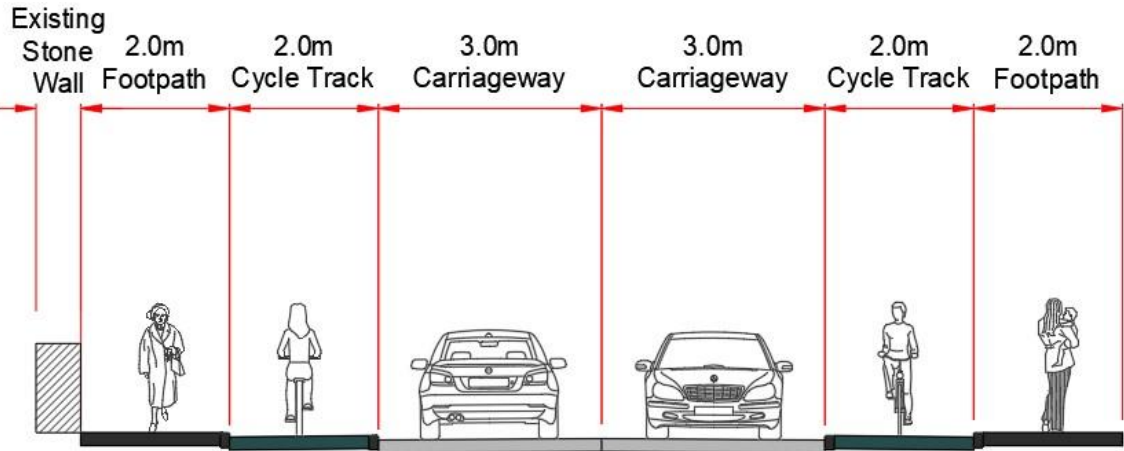
Section	Location (approx.)	Length (approx.)	Traffic Arrangement
C-C	Bóthar Stíofáin (From Clochard to Gateway Retail Park Access)	300m	Two-way vehicular access on a carriageway of width 3.0m. The west side provides a 2.0m footpath, 1.86m verge and 2.0m cycle track. The east side provides for a 2.0m cycle track, 2.0m footpath and 1.65m verge.
 <p>2.0m Footpath 1.86m Verge 2.0m Cycle Track 3.0m Carriageway 3.0m Carriageway 2.0m Cycle Track 2.0m Footpath 1.65m Verge</p> <p>SECTION C-C SCALE - 1:100</p>			
D-D	Bóthar Stíofáin (From Gateway Retail Park Access to Western Distributor Road)	70m	Two-way vehicular access on a carriageway of width 3.0m. 2.0m cycle track and 2.0m footpath provided on the west and east side.
 <p>Existing Stone Wall 2.0m Footpath 2.0m Cycle Track 3.0m Carriageway 3.0m Carriageway 2.0m Cycle Track 2.0m Footpath</p> <p>SECTION D-D SCALE - 1:100</p>			

Table 5: Proposed Road Type and Mainline Cross Section

7.4.2 Relaxation & Departures from Standards

The cross sections of the proposed design are the existing scenario with the proposed design consisting of resurfacing and installing crossing points with zebra crossings, buildouts and raised platforms.

The geometric design of the road scheme Sections AA, BB, CC and DD are in compliance with DMURS.

7.4.3 Stopping Sight Distance (SSD)

The proposed scheme will maintain or improve the existing SSD.

7.4.4 Minor Junctions and Corner Radii

The scheme, which runs in a north-south direction, encompasses east-west junctions with:

- Linn Bhuí;
- Riasc Na Rí;
- Cloch Ard;
- Caieal úr;
- Sliabh Ard; and
- Gateway Retail Park Access Road.

These junctions are all minor, priority t-junctions and are proposed to be realigned in accordance with *Section 4.3.3 Corner Radii*.

The junction crossings have been realigned to allow for installation of raised tables, buff tactile paving and road markings at the uncontrolled crossing as per *Section 4.3.2 Pedestrian Crossings* of DMURS.

7.4.5 Major Junctions and Corner Radii

The major junctions include:

- Ragoon Road; and
- Western Distributor Road.

The corner radii at these junction approaches have also been realigned in accordance with *Section 4.3.3 Corner Radii* of DMURS to allow for rigid body trucks/commercial vehicles to turn corners without crossing the centre line of the intersecting road.

The junction crossings have been realigned to allow for installation of raised tables, buff tactile paving and road markings at the uncontrolled crossing as per *Section 4.3.2 Pedestrian Crossings* of DMURS.

7.5 Bus Stops

The shared bus stop landing zone as described in the Section 4.2.12 of the CDM will be considered at the detailed design stage. This layout is suitable for use with in-line bus stops with one-way cycle tracks and gives pedestrian priority over cycle track provided by raised zebra crossing.

The pedestrian crossing area is flush, on a flat top hump, across the cycle track, with tactile paving as appropriate. This ensures cycle speeds are slowed appropriately at the crossing point. The cycle track is narrowed to 1.5m (absolute minimum) behind bus stop to encourage single file cycling at crossing point. The proposed bus stop is to be located downstream of crossing with gap between the bus shelter and the crossing for intervisibility between crossing pedestrians and approaching cyclists.

The typical layout, as per the CDM, is shown in Figure 7-1.

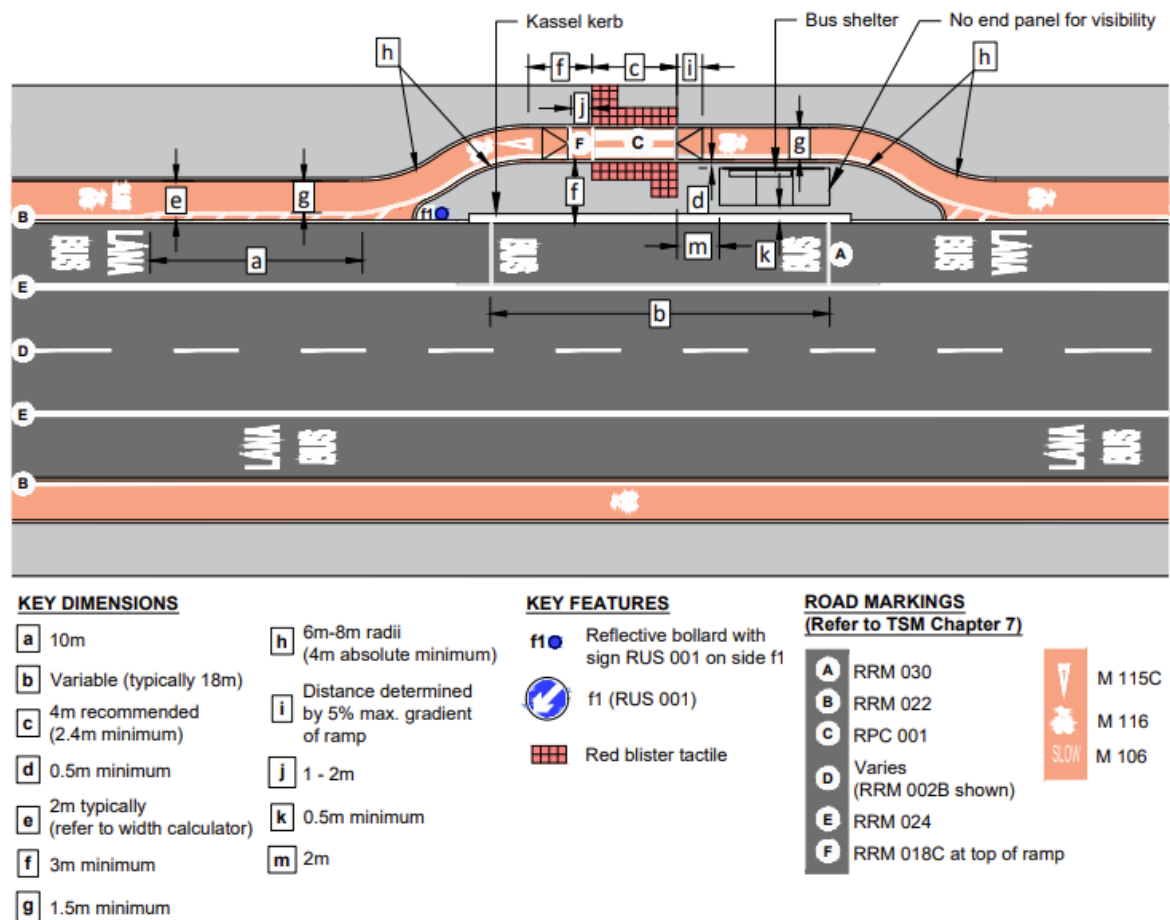


Figure 7-1 Proposed Bus Stop Layout (CDM TL201 Island Bus Stop)

8 Pavement

8.1 Design Basis

The mainline pavement design was prepared in accordance with Volume 7 of the NRA Design Manual for Roads and Bridges (DMRB) HD 25-26/10. Additionally, NRA DMRB HD 24/06 was used to assess the design traffic for the pavement design.

8.2 Existing Pavement

In general, the route is in moderate condition with the exception of areas where patches were observed due to utilities work.

8.3 Proposed Pavement Type

The design proposes an overlay treatment, for shape correction, to the existing pavement on Bóthar Stíofáin as part of refurbishing works within the proposed scheme for shape correction to the existing pavement. The existing pavement will be repaired at the defect sections, levelled to designed levels, cleaned and coated with binding agent prior to overlaying treatment.

At locations where full pavement repair/ restoration is required (at crossings and footpaths), the pavement shall be constructed as per Table 6.

Description	Thickness	Layer
SMA 14 Surf PMB 65/105-60 des	40mm	Surface Course
AC 20 Bin 40/60 des	60mm	Binder Course
AC 32 Dense Base 40/60 des	200mm	Base Course
Clause 808 material	150mm	Sub-base
Capping (CBR \geq 5%)	350mm	Capping

Table 6: Pavement Repair

According to the NTA - Specification of Red Surface Course for Use on Off-Road Urban Cycleways, the mixture designation for the surface course on off-road urban shall comply with the requirements regarding constituents, composition and installation into the Works as laid out in this ITA and the referenced requirements in CC-SPW-00900.

The works shall be conducted as per Table 7 below.

Description	Thickness	Layer
SMA 10 Surf PMB 65/105-60 des	25mm	Surface Course
AC 20 Bin 70/100 des	75mm	Binder Course
Clause 808 material	150mm	Sub-base

Table 7 Cycle track Pavement and Foundation Build-up

9 Signage & Lining, Lighting

9.1 Kerbs

All kerbs at the edge of the road carriageway shall have an upstand of 125mm in accordance with DMURS and Standard Construction Detail TII CC-SCD-01102.

A dropped kerb ramp with tapered kerbs and drop kerbs will be provided at crossing points in accordance with Standard Construction Detail TII CC-SCD-01103. The drop kerb shall have a raised lip of between 0 to 6mm.

9.2 Footpath

All footways shall be 100mm reinforced concrete on 100mm thick sub-base constructed in accordance with Standard Construction Detail CC-SCD-01105.

9.3 Tactile Paving

Tactile paving with a blister surface is to be provided at all pedestrian crossings to provide information to vision impaired people. The tactile paving shall be provided in accordance with the guidance set out in the Guidance on the use of Tactile Paving Surfaces (2005) published by the UK Department of the Environment, Transport and the Regions. At controlled crossings, "L" shaped tactile paving shall be laid across the full width of the drop kerb with the stem extending to the back of the footway.

9.4 Signage and Road Marking

Traffic signs and road markings have been prepared in accordance with the TII Publications (Standards) and the Department of Transport, Tourism and Sport Traffic Signs Manual (TSM).

9.5 Pedestrian Guardrails

DMURS states that the use of pedestrian guardrails can be ineffective in forcing pedestrians to follow diversionary routes away from their desire lines, and they can be counterproductive as they may:

- Increase vehicle speeds and aggressive driver behaviour;
- Create a false sense of safety for both drivers and pedestrians;
- Block inter-visibility between drivers and children;
- Result in pedestrians/cyclists being trapped on the carriageway or found in locations that are not anticipated by drivers;
- Reduce the width and capacity of footways and crossings; and
- Create a collision hazard for cyclists where built in close proximity to cycle lanes

Therefore, guardrails should not be used as a tool for directing and/or shepherding pedestrians and should only be installed where there is a proven or demonstrable safety benefit, such as, for example where people may inadvertently step onto the carriageway. No locations within the extents of the proposed road development have been identified and as such, no pedestrian guarding is recommended within the scheme.

10 Utilities

10.1 ESB – Overhead and Underground

The ESB network assets identified in study area include MV/LV overhead lines and underground cables. There are no known or identifiable ESB sub-stations located within the extents of the proposed scheme.

10.2 EIR

There are no overhead LV EIR lines along the length of Bóthar Stíofáin.

The scheme does not require diversion of the existing Eir services. Any required works to future proof for diversion or upgrade within the proposed scheme will be confirmed at detailed design stage.

10.3 Gas

There is no existing gas main along the length of Bóthar Stíofáin.

The scheme does not require diversion of the existing gas main. Any required works to future proof for diversion or upgrade within the proposed scheme will be confirmed at detailed design stage.

10.4 Public Lighting

There are existing overhead public lighting poles along the length of Bóthar Stíofáin.

The public lighting is proposed to be upgraded in advance of the proposed scheme. Details of the public lighting design is shown in Appendix D.

10.5 Water

10.5.1 Watermain

There is an existing watermain along the length of Bóthar Stíofáin.

The scheme does not require diversion of the existing watermain. Any required works to future proof for diversion or upgrade within the proposed scheme will be confirmed at detailed design stage.

10.5.2 Foul

There is an existing foul/combined sewer along the length of Bóthar Stíofáin.

The scheme does not require diversion of the existing foul water. Any required works to future proof for diversion or upgrade within the proposed scheme will be confirmed at detailed design stage.

10.5.3 Drainage

There is an existing surface water service along the length of Bóthar Stíofáin.

There shall be diversion/ relocation of the surface water required within the proposed scheme as gullies will be moved and an additional hardstanding of approximately 2,400m² is proposed. Consultation with GCC Drainage Department will be undertaken prior to the Detail Design Stage.

10.5.4 Flood Risk Assessment

A preliminary flood risk assessment has been undertaken by reviewing information from the Office of Public Works (OPW) Natural Flood Hazard Mapping (www.floodinfo.ie), the Western CFRAM Study. A

Strategic Flood Risk Assessment (Stage 1 and 2) was also undertaken along the route as part of a GCC study of all GTS routes. No notable flood risk was identified.

10.6 BT/E-SAT

BT/E-SAT underground services are likely to contain fibre optics that is used for commercial purposes. Any work to these services requires a minimum of 90 days' notice to the service provider. BT requests to be in attendance for any works adjacent to their services. Depth of service unknown.

E-SAT chambers are located at Father Griffin Road, Dominick Street, Presentation Road. Liaison with the utility providers will be progressed at the Detailed Design stage and with the contractor upon appointment.

10.7 Fibre

There is an existing Virgin Media on along the length of Bóthar Stíofáin.

11 Landscape mitigation

11.1 Construction Stage

Landscape mitigation will be drawn up by the main contractor using the NRA's 'Guidelines for the Creation, Implementation and Maintenance of an Environmental Operating Plan' during the construction stage, if required, and will be implemented on the basis of an Environmental Operating Plan (EOP).

11.2 Operational Stage

Operation stage measures are focused on re-instatement and future maintenance of features and landscapes. Maintenance shall ensure that landscape measures, including seeding and planting establish successfully and that any failures or defects observed within two years of implementation are made good.

12 Preliminary Temporary Traffic Management Plan

During the construction phase of the proposed development, an appropriate Temporary Traffic Management Plan (TTMP) shall be put in-place in accordance with the Department of Transport's Traffic Signs Manual to ensure the safety of road users.

It is also important during the construction phase to maintain access to residential properties and businesses. It is anticipated that there will be little disruption to accesses but this shall not be significant. Road closures shall be avoided under all circumstances.

Consideration shall be given to the public utility diversions / protection during the construction phase of the proposed scheme should it be required. This is to be confirmed at the detailed design phase. It is anticipated that some of the utilities diversions, if required, may need to be carried out in advance of the main works.

13 Road Safety Audit

A Stage 1&2 Road Safety Audit has been carried out on the Preliminary Design Layout and is shown in *Appendix E*.

14 Public Engagement Strategy

14.1 Stakeholder Engagement

Relevant stakeholders of local businesses have been liaising with GCC to facilitate tie-in with the Bóthar Stíofáin Cycle network Scheme and their proposed developments as part of their relevant planning process (including scoping exercises).

14.2 Lands Ownership

A survey of lands ownership affected by the works was undertaken using the Land Direct Register.

Land take is required at the east of Bóthar Stíofáin. Land take drawings, with ownership and folios noted, are shown in CSEA Drawing No.'s 19_151-CSE-GEN-XX-DR-C-7101 -7110 (Appendix F).

14.3 Statutory Consultation

The scheme is subject to the planning procedure required by the Planning and Development Act 2000 (as amended), in accordance with the requirements of Part 8 of the Planning and Development Regulations 2001 (as amended).

14.3.1 Site Notice Requirement

Site notice(s) will be placed in accordance with the particulars within the Planning and Development Act 2000.

14.3.2 Newspaper Notice Requirement

A newspaper notice(s) will be published in accordance with the particulars within the Planning and Development Act 2000.

14.3.3 Public Consultation

As prescribed by this statute, plans and particulars of the proposed development will be available for public inspection or purchase at a fee not exceeding the reasonable cost of making a copy during office hours for a period of 4 weeks during public hours at the Planning Office, Galway City Council, City Hall, College Road, Galway, from 9:00am to 4:00 pm Monday to Friday, excluding Bank Holidays.

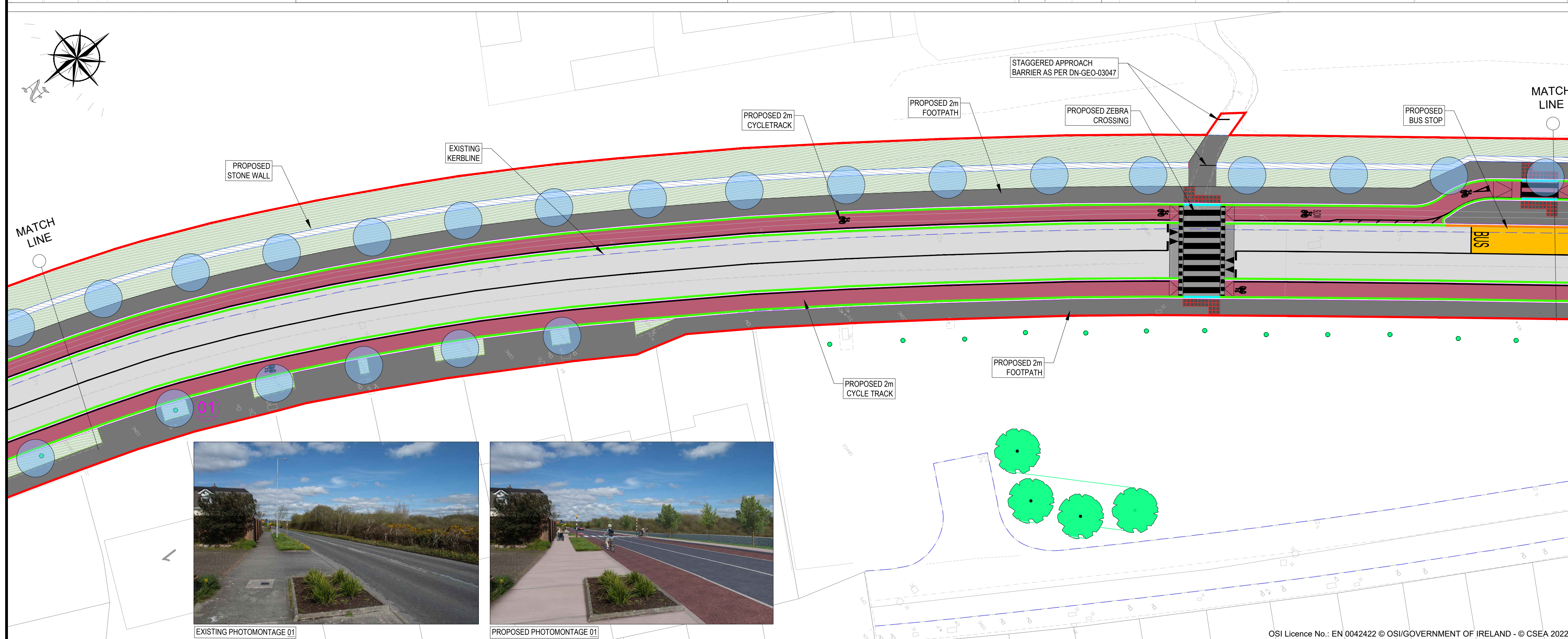
Persons/organisations will be invited to inspect the proposed scheme and provide feedback which could be submitted to either the Planning Office or online.

14.4 Informational Brochure

In addition to the legislative public consultation, an informational brochure will be disseminated to households and businesses in the area.

Appendix A

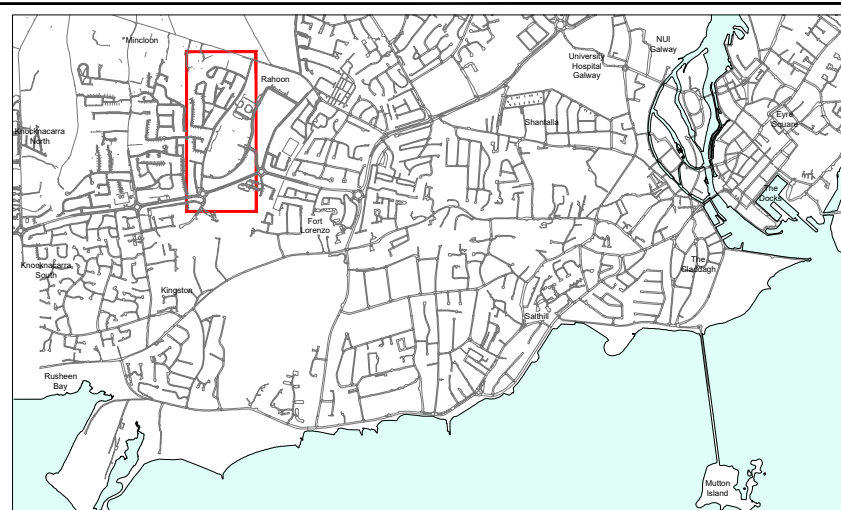
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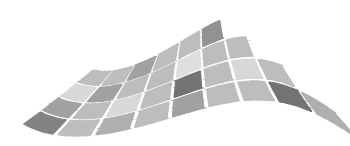
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| PROPOSED CONCRETE PATH - |  |
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| PROPOSED CYCLE PATH - |  |
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| PROPOSED KASSEL KERB - |  |
| PROPOSED TACTILE PAVING - |  |
| PROPOSED CORDROY PAVING - |  |
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COMHAIRLE CATHRACH NA GAILLIMH
GALWAY CITY COUNCIL

BOTHAIR STIOFAIN
CYCLE NETWORK SCHEME

PROPOSED ROAD LAYOUT NO RB OPTION
SHEET 1 OF 3

MR OCT 2023

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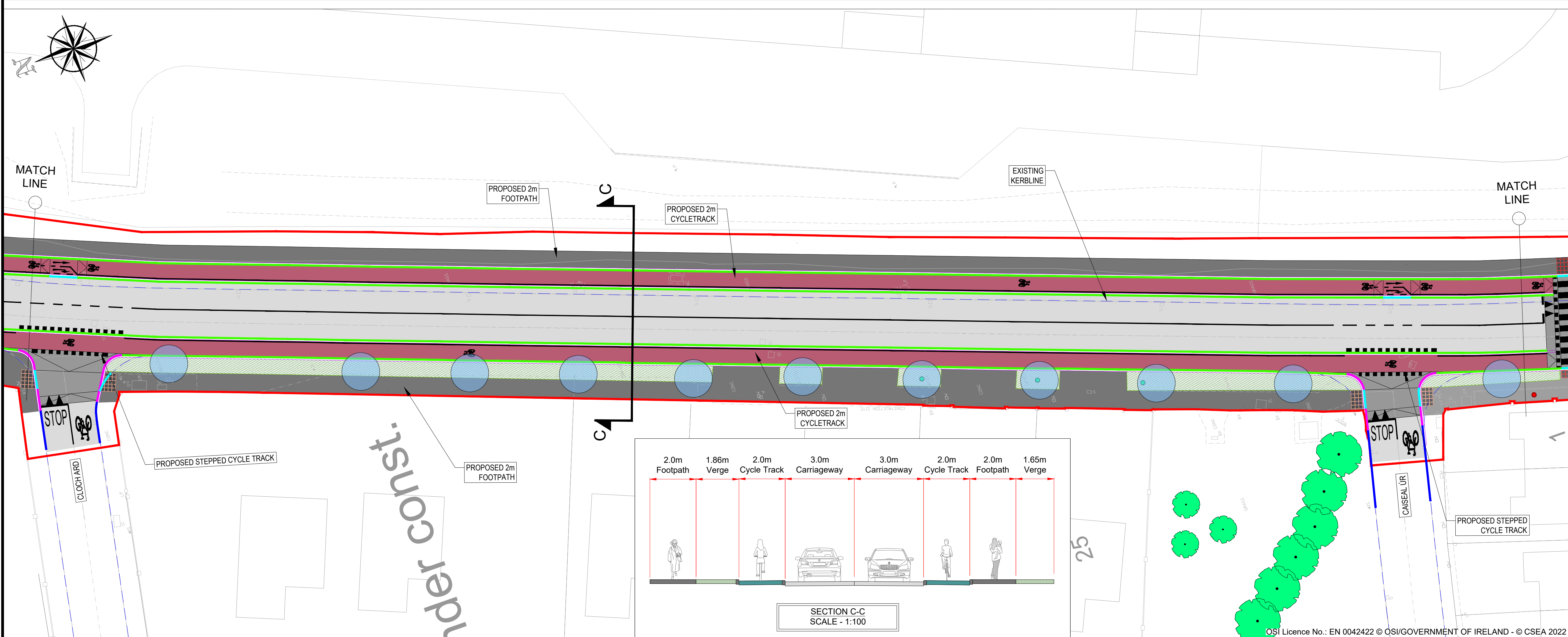
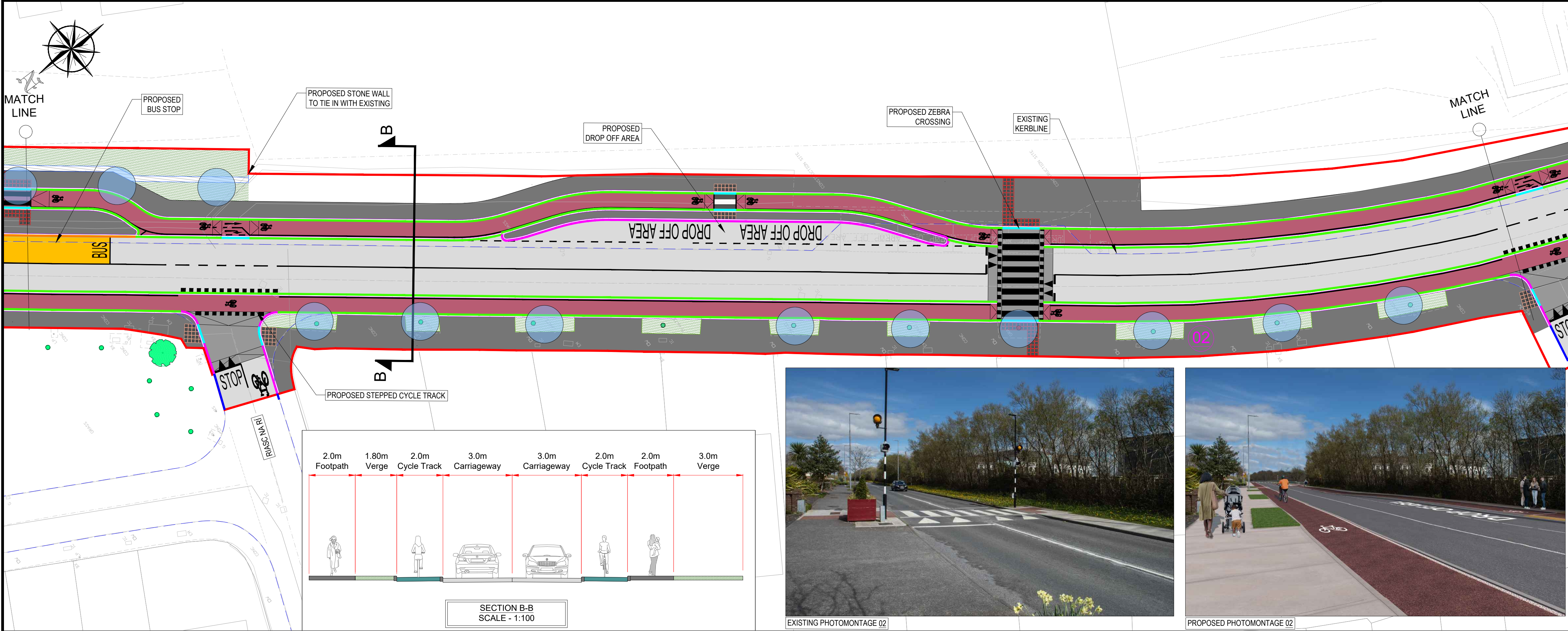
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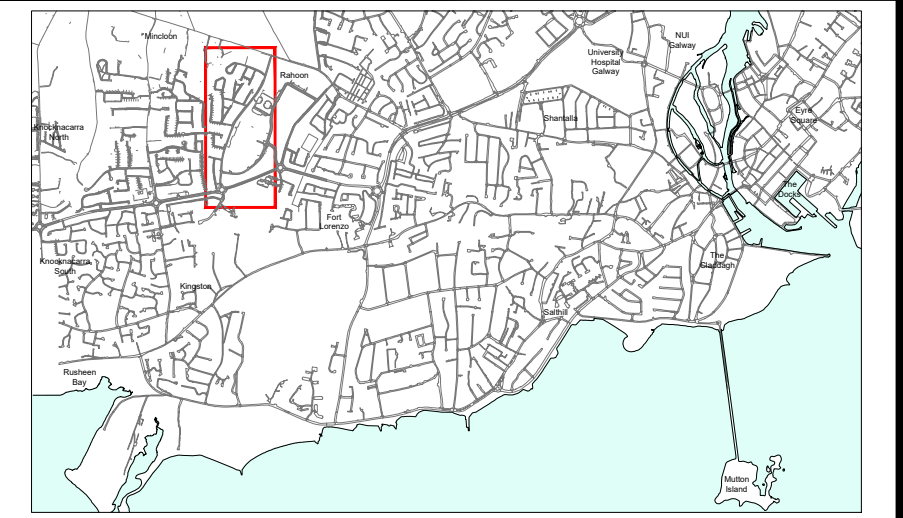
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Key Plan
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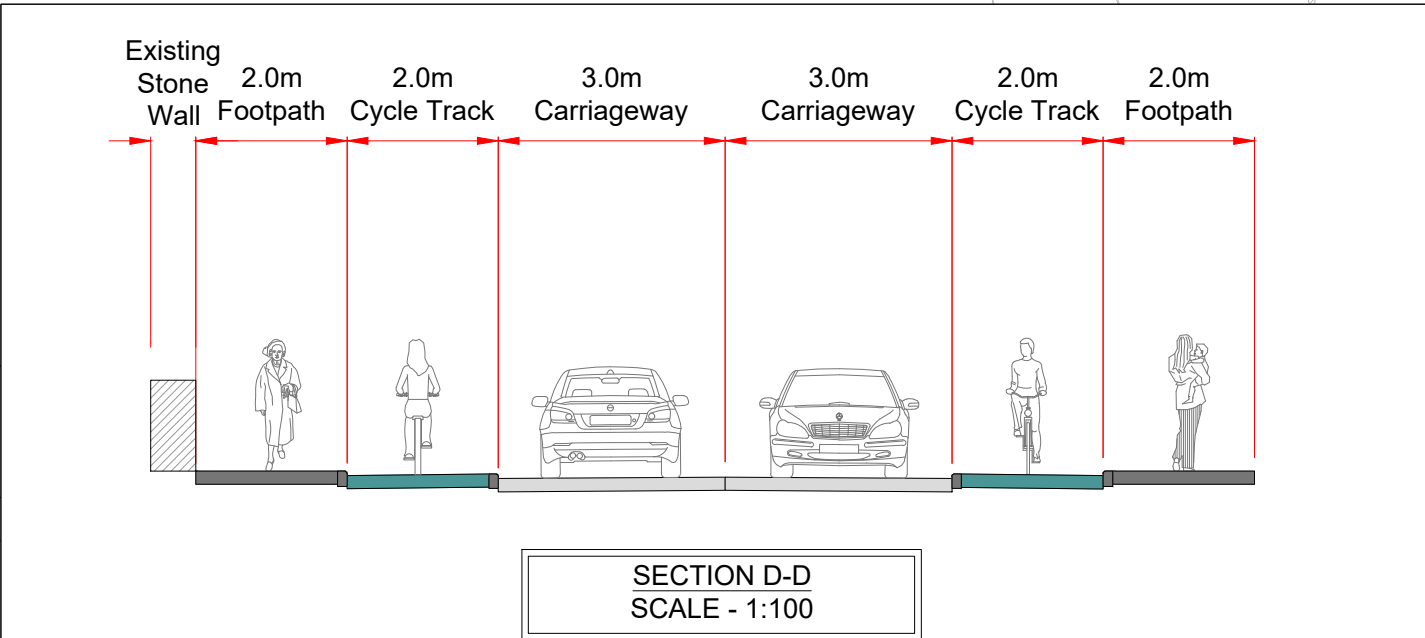
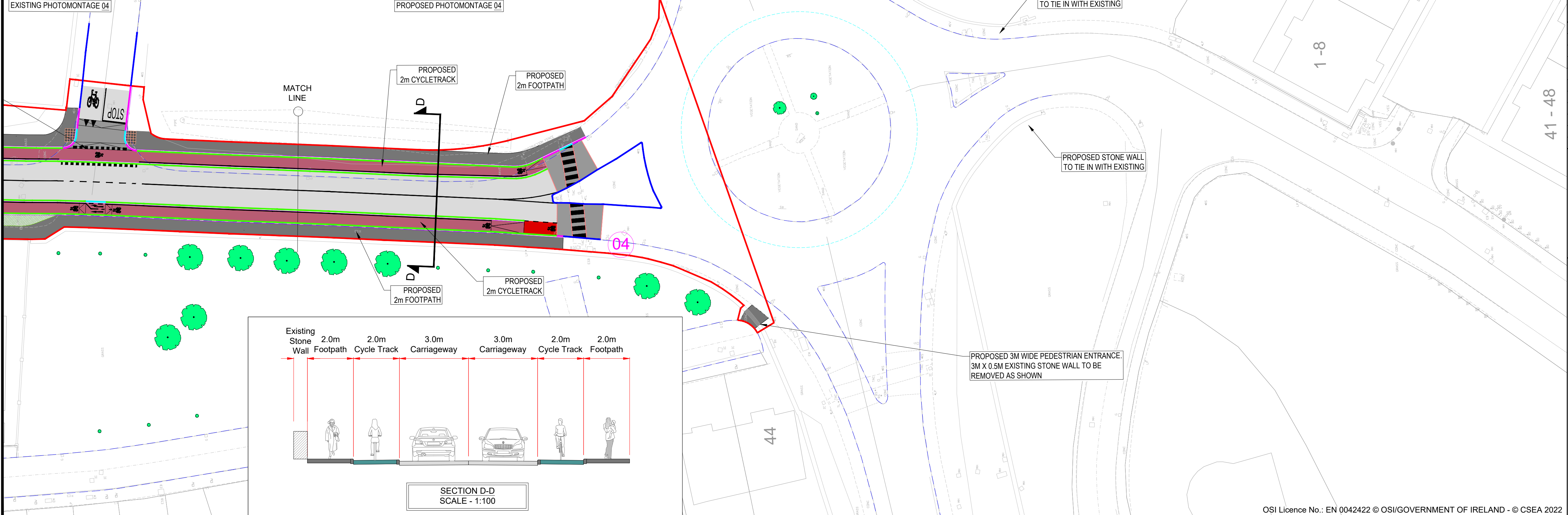
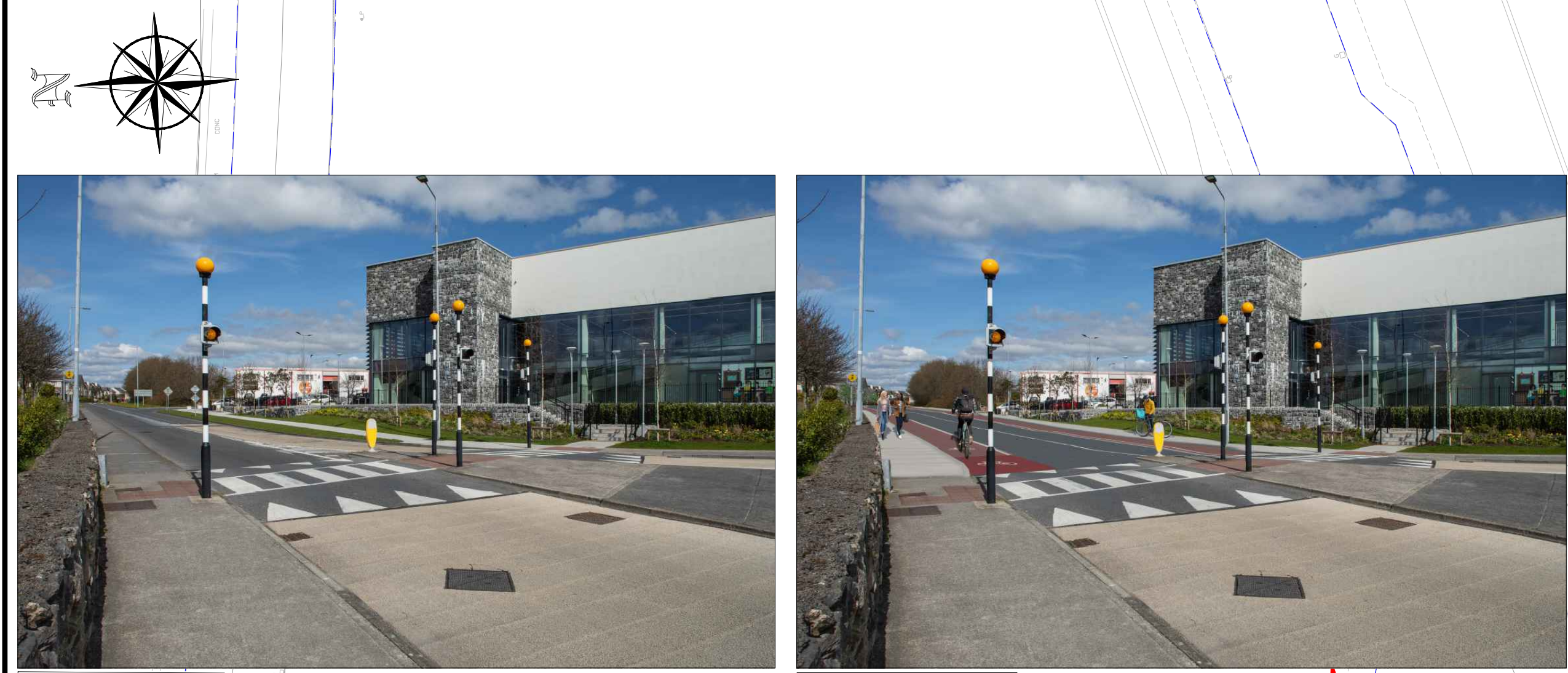
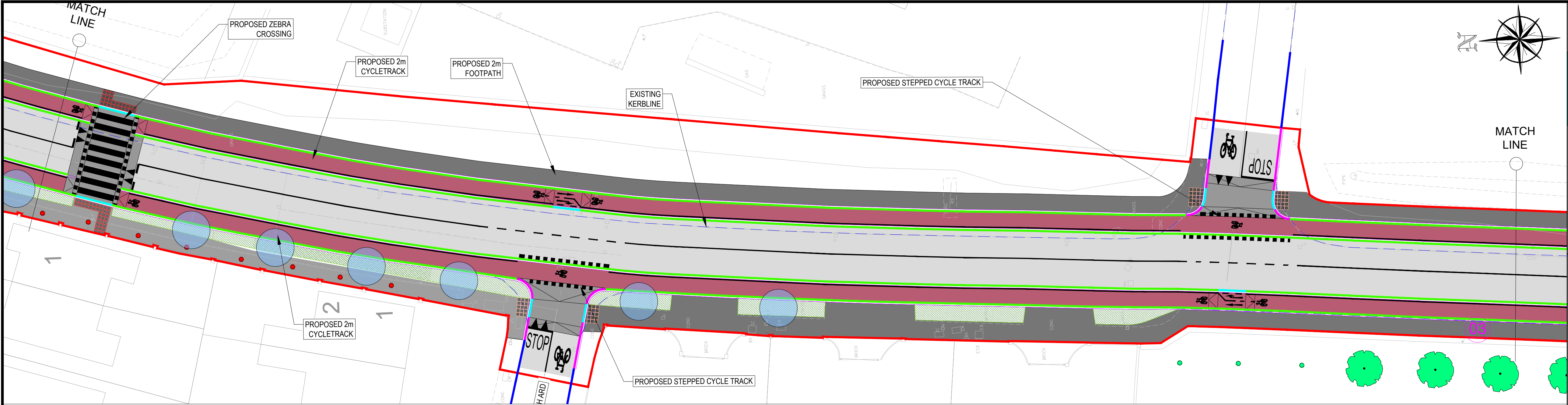
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COMHAIRLE CATHRACH NA GAILLIMHE
GALWAY CITY COUNCIL
BOTHAIR STIOFAIN
CYCLE NETWORK SCHEME
PROPOSED ROAD LAYOUT NO RB OPTION
SHEET 2 OF 3

Client
Project
Dwg. Title
Drawn By: MR, Date: OCT 2023, Scale: 1:250 @ A1
Checked By: CB, CSEA Job No.:
Project Code: 19_151D - CSE - GEN - XX - DR - C - 2108
Status Code: S2, Suitability Description: FOR PLANNING
Revision: P01, Project Status: FOR PLANNING



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National Transport Authority

Comhairle Cathrach na Gaillimhe
Galway City Council

Key Plan
Scale: NTS

LEGEND:

- SITE BOUNDARY -
- CARRIAGEWAY -
- PROPOSED CONCRETE PATH -
- LANDSCAPED AREA -
- RAISED CROSSING -
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BOTHAIR STIOFAIN
CYCLE NETWORK SCHEME

Project

PROPOSED ROAD LAYOUT NO RB OPTION
SHEET 3 OF 3

Dwg. Title

Drawn By: MR Date: OCT 2023
Checked By: CB Scale: 1:250 @ A1 CSEA Job No. 19_151D

Project Code	Originator	Zone/Phase	Level	Type	Role	Dwg. No.
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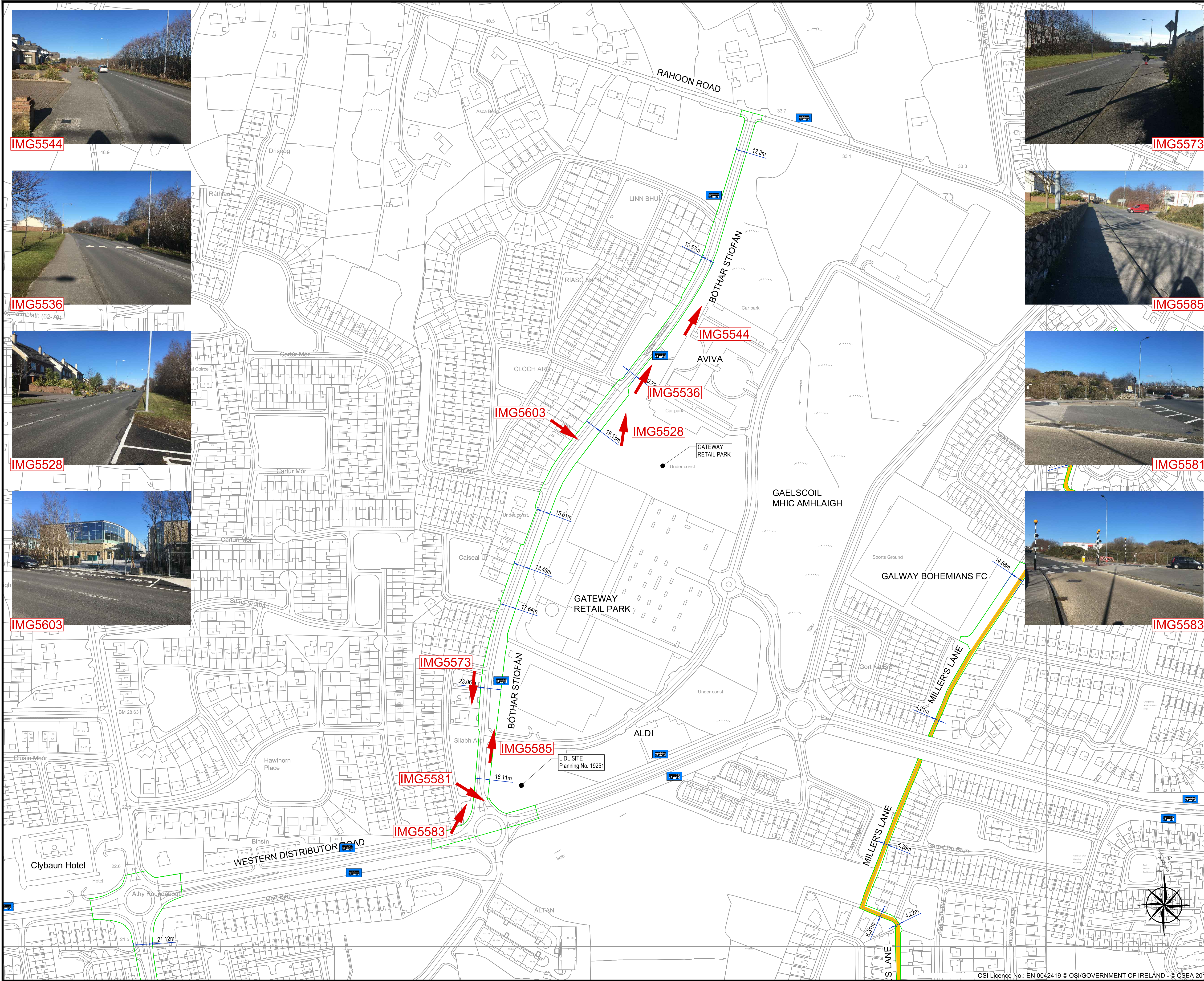
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Revision Project Status

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Appendix B

CSEA Drawings No. 19_151-CSE-GEN-XX-DR-C-1101



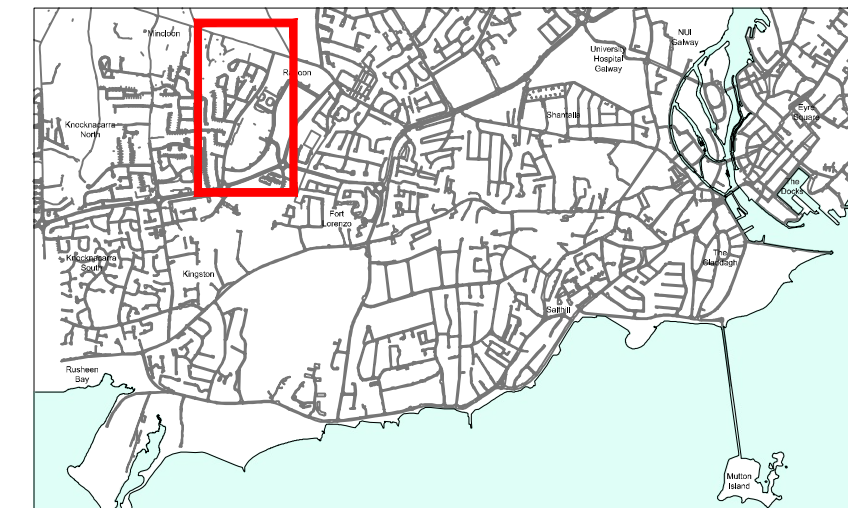
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National Transport Authority

Comhairle Cathrach na Gaillimhe
Galway City Council



Key Plan

Scale : NTS

Legend



Existing Bus Stop
Pedestrian Link

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GALWAY CYCLE NETWORK
STAGE 2
CONSTRAINTS STUDY
SHEET 2 OF 6

Drawn By: KF Date: JAN 2020
Checked By: CAB Scale: 1:2000 @ A1
Project Code: Originator: Zone/Phase: Level: Type: Role: Dwg. No.: 19_151

19_151 - CSE - GEN - XX - DR - C - 1101

S2 FOR INFORMATION
Status Code: Suitability Description

P01 PRELIMINARY
Revision: Project Status

Appendix C

Architectural Conservation Report

**ARCHITECTURAL HERITAGE
ASSESSMENT OF THE
GALWAY CYCLE NETWORK
STAGE 2**

ON BEHALF OF: GALWAY CITY COUNCIL

AUTHOR: ROB GOODBODY

JUNE 2021

ABSTRACT

IAC Archaeology has prepared this report on behalf of Galway City Council, to study the impact, if any, on the architectural heritage resource of the proposed cycleways at Canal Road and Bóthar Stiofáin, Galway (OS Sheet 94). The assessment has been carried out by Rob Goodbody.

Two sections of cycleway are proposed, one running alongside the Eglinton Canal between University Road and Wolfe Tone Bridge and the other along Bóthar Stiofáin between Rahoon Road and Western Distributor Road.

The historical background shows how the Eglinton Canal was constructed between 1848 and 1852 to facilitate navigation between Lough Corrib and the sea and to improve the head of water available to mills within the city of Galway. Ancillary features were erected with the canal, including locks, quay walls, bollards and bridges. Railings were provided alongside the canal in the 1860s. The original swing bridges that facilitated street crossings while allowing navigation on the canal were removed in 1955 and replaced with concrete bridges. The canal, its ancillary features and the bridges are protected structures.

Bóthar Stiofáin was laid out in the late 1990s as a distributor road facilitating development in the area and since that time housing development has taken place on the western side of the road. The eastern side has also been developed, though with only pedestrian access onto Bóthar Stiofáin.

This report identifies a number of locations at which potential impacts may occur to features of architectural heritage significance along the Eglinton Canal, including railings, a bollard, a sunken basin, a lock-keeper's house, the copings on the quayside and some stone steps. Mitigation measures are recommended and, if followed, would ensure that the impact on architectural heritage would be minimal.

There are no buildings of architectural heritage significance in the vicinity of Bóthar Stiofáin. The road was laid out partly on the alignment of an existing farm laneway that was bounded by stone walls, and it seems likely that some of these walls survive. However, there is heavy vegetation growth on the eastern side of the road that conceals any surviving elements. Some works will be required to stone walls at the northern end of the road, but the affected sections of walls were built when the road was laid out in the late 1990s and are not of architectural heritage significance.

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1 INTRODUCTION

1.1 GENERAL

This report has been prepared for Clifton Scannell Emerson Associates, Consulting Engineers, on behalf of Galway City Council, as part of the input into the Galway Cycle Network, Stage 2 (Figure 1).

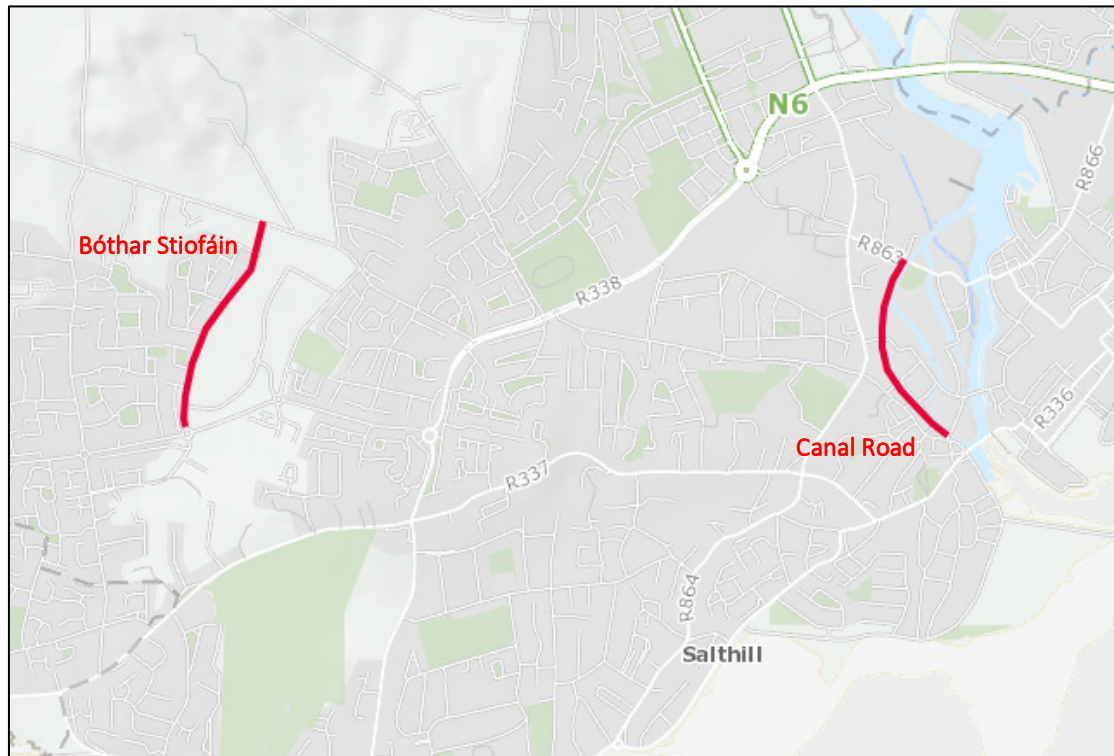


Figure 1: Approximate location of schemes

1.2 THE DEVELOPMENT

There are two elements to the proposal.

The first is to provide a cycleway on the western side of the Eglinton Canal in Galway, running between University Road, in the north, and Dominick Street Lower in the south.

The second will provide a cycleway along Bóthar Stiofáin, between Ragoon Road and the Western Distributor Road.

This report includes a historical background to examine the background to the sites for each of the routes, followed by a description of each of the routes. An assessment of the proposed works is then presented.

2 HISTORICAL BACKGROUND

2.1 EGLINTON CANAL

Galway is a medieval city and had a fine set of city walls. The city was founded on the southern end of a ridge that runs from north-east to south-west. The River Corrib curves around the ridge from west through to south-east, and the presence of an inlet to the east of the site of the city provided good defences.



Figure 2: Detail of Bellin's map of Galway, 1690s

The detail of J N Bellin's map of Galway, produced in about 1691, shows the walled city on the left bank, with its street pattern that is still recognisable today (Figure 2).¹ On the right bank of the river, to the left in the map above, the river channel is shown to split into a number of minor branches leaving islands on the western side of the main channel. A bridge is depicted, crossing the main channel onto an island and beyond it crossing a second bridge to reach the area beyond. Even at that period there were suburbs on the western side of the Corrib and streets and buildings on some of the islands.

During the eighteenth century the development of the lands on the western side of the Corrib increased and this is evident on Michael Logan's map of the city, published in 1818.² This map shows streets, houses, churches and gardens in the western suburbs as well as mills and the county gaol. A significant amount of the development shown on Logan's map had occurred in the early years of the nineteenth century, including the construction of the gaol in 1811.³ Of significance to the present subject is the construction of mills that availed of the flow of water in the river channels and amongst

¹ J N Bellin, c.1691, *Plan de Galloway et ses environs*, National Library of Ireland.

² Michael Logan, 1818, "Plan of the town and suburbs of Galway", in Hardiman, 1820, facing p. 279.

³ Hardiman, p. 301.

these were flour mills on Nun's Island built in 1811 and 1813, a brewery on Madeira Island that opened in 1816 and a rectifying distillery in Parkavara that was built in 1826.⁴ Some of these were later put to other uses, with the brewery becoming a tuck mill and corn mill, while the distillery was converted to a sawmill.⁵



Figure 3: Detail of Ordnance Survey map of 1839

The first edition of the Ordnance Survey's six-inch map of Galway shows the main channel of the Corrib, at centre in Figure 3, with two branch channels to the west. University Road is seen near the top left, crossing a branch of the river towards the county gaol, which is seen as a semicircular building and which is now the site of Galway Cathedral. Further to the south a bridge crossing to Nun's Island has flour mills on the bridge on the upstream side.

Responsibility for inland navigation was given to the Commissioners of Public Works between 1831 and 1846 and in 1842 the Commissioners were given responsibility for arterial drainage.⁶ In 1844 the commissioners proposed to undertake drainage works in the catchment area of the River Corrib and following survey work sanction was given to the proposal in 1846.⁷ The project was seen as more than mere river drainage and the opportunity was seen for combining this with making the river navigable and also improving the supply of water for powering mills in Galway. In view of the latter, the proprietors of mills that would benefit were expected to contribute to the cost of the works. The project was to include a length of canal to bypass the main channel of the river through the city so as to provide a channel with sufficient depth for commercial traffic. This canal was designed by engineer John McMahon and was to include a canal

⁴ Hardiman, pp. 289-290; Prunty and Walsh, p. 30.

⁵ Ordnance Survey maps, 19th century.

⁶ Lohan, pp. 190-191, 220.

⁷ Board of Public Works, 1849, pp. 40-41.

basin at Claddagh connected with the sea by a lock, while the canal was to run in a gentle curve northward, incorporating parts of the existing river channels, while providing a new channel for the passage of boats.⁸ Only one intermediate lock was to be provided, with a substantial drop, so as to maintain a significant head of water, greater than had existed previously, to supply power to the water mills on the branches of the river. As an additional amenity for local people, flights of steps were provided at intervals along the eastern bank and on the western side at Parkavara to facilitate women who wished to wash their laundry in the canal.⁹

The appearance of potato blight in 1845 and the advent of the Famine in the following year led to this project being undertaken as a means of providing Famine relief and work commenced in 1848 after some delays due to legal issues.¹⁰ In the following year the canal was excavated, most of the work on the canal basin was complete and the construction of the 2nd lock, on the canal itself, was under way.¹¹ The canal was to cross five existing roads and four of these were to be provided with swivel bridges to facilitate the passage of boats, while the sixth, Parkavara, was to be severed by the canal and not provided with a bridge. The swivel bridges were to be provided by the firm of Mallet, based in Dublin and the first three were opened to traffic in February 1851, while water was let into the canal in September of that year.¹² The canal was formally opened in August 1852 by the Lord Lieutenant, Viscount Eglinton, and was named in his honour.¹³

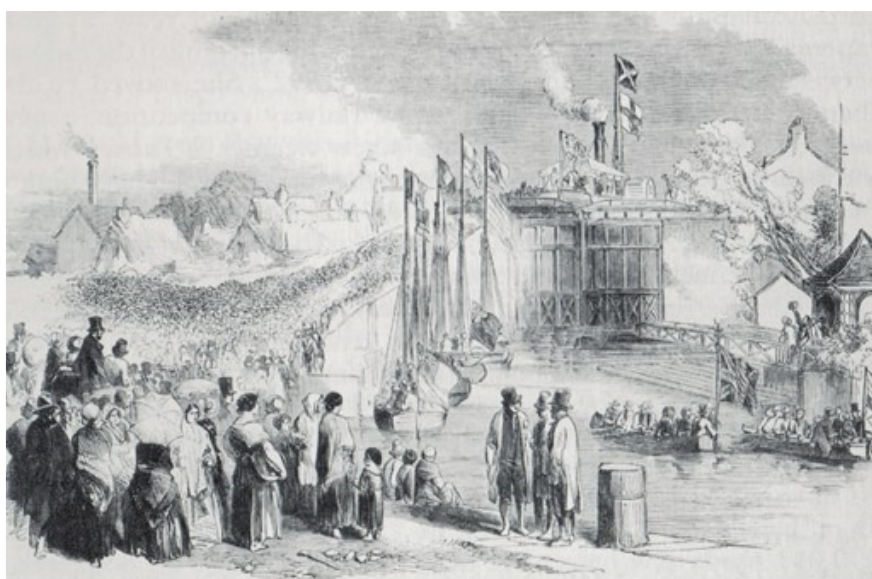


Figure 4: Opening of the Eglinton Canal, from *Illustrated London News*

Within two months of the opening of the canal it was busy with boat traffic, carrying timber, slates and other merchandise.¹⁴ While the canal was under construction a

⁸ Delany, p. 171.

⁹ Whitmarsh, p. 44.

¹⁰ Lohan, p. 193; Board of Public Works, 1849, p. 41.

¹¹ Board of Public Works, 1850, p. 180.

¹² Board of Public Works, 1852, p. 221.

¹³ *Cork Examiner*, 27th August 1852.

¹⁴ *Freemans Journal*, 8th October 1852.

temporary bridge was provided across the main channel of the Corrib at the Claddagh and this was left in place, later to be replaced with a more permanent structure. In 1856 this was upgraded to a full crossing of the river when an additional swivel bridge was provided across the Eglinton Canal.¹⁵ In 1865 railings were added along the canal side.¹⁶



Figure 5: Detail of OS map of 1872 showing swivel bridge

The project also had a beneficial impact on industry in Galway, with the power available to turn water wheels increased from 470 horsepower to around 2,000 horsepower, with greater reliability as Lough Corrib became, in effect, a millpond with huge storage capacity.¹⁷ At individual mills the significant improvement in the water supply varied from the Newcastle Distillery, where the head of water increased from about 0.28 metres to about 2.2 metres, while at a wool factory the head of water was now almost 4 metres. Each of the mills now invested in new machinery to avail of this increased potential power and their productivity increased significantly as a result.

A disadvantage of the canal project was the potential incompatibility between the arterial drainage element of the works on the one hand and navigation and the provision of additional power to the mills on the other.¹⁸ The former needed a reduction in the level of the river, while the latter required an increase. The compensating factor was the removal of obstructions in the river that allowed for a more rapid flow in times of floods. Furthermore, the Board of Works frequently found that the cost of maintaining the navigation systems around the country was greater than the income. Navigation on the canal had more or less come to an end by the 1930s and in 1955 the swivel bridges were removed and were replaced with concrete bridges.¹⁹

¹⁵ *Freemans Journal*, 21st May 1856.

¹⁶ Prunty and Walsh, p. 37.

¹⁷ *Cork Examiner*, 27th August 1852.

¹⁸ Lohan, p. 194

¹⁹ Prunty and Walsh, p. 37.

2.2 BÓTHAR STIOFÁIN

Until the closing years of the twentieth century the lands now occupied by Bóthar Stiofáin and on either side of it was in agricultural use.

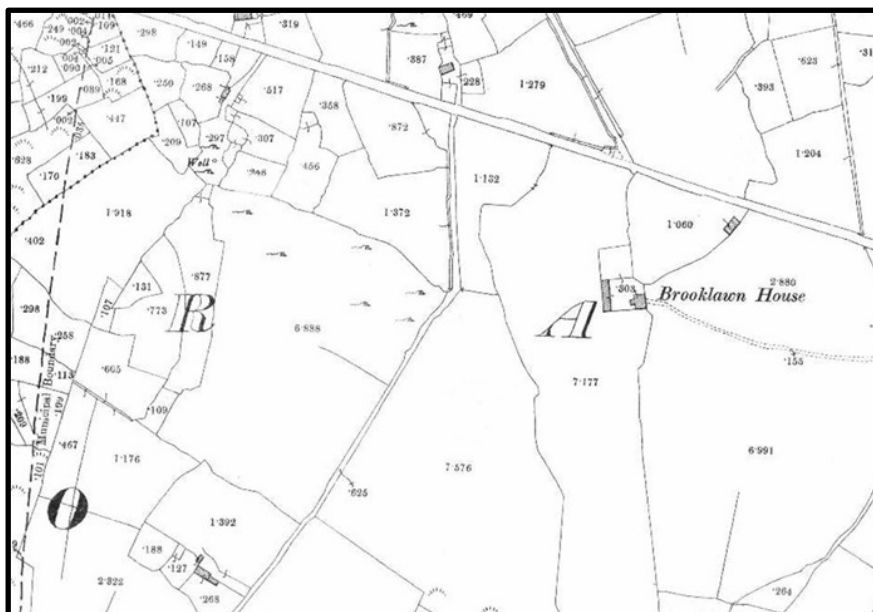


Figure 6: Ordnance Survey map of 1913 showing the location of Bóthar Stiofáin

The Ordnance Survey map of 1913 shows that there was a laneway on the site of Bóthar Stiofáin. This was an agricultural access lane, or a bótherín, and it narrowed towards the southern end before disappearing altogether. The northern section of the laneway is seen in Figure 6, extracted from the 1913 Ordnance Survey map, while Figure 7 below is an image from further south in the same map. The curved dashed line shows the boundary of the City of Galway, while to the east of it the laneway is seen to terminate at the boundaries of two fields – indicating that its purpose was to access fields rather than as a roadway or an access to houses.

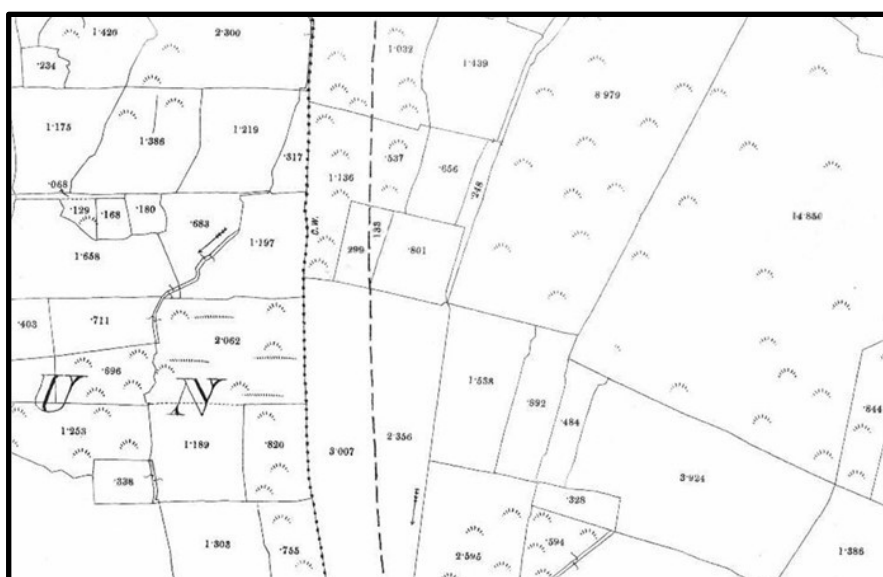


Figure 7: Ordnance Survey map of 1913 showing southern end of Bóthar Stiofáin

The landscape remained unchanged until the end of that century and the Ordnance Survey six-inch map that was published in the 1930s shows no change since 1913. It is unclear at this remove whether the laneway was bounded by stone walls, but as this is the normal field boundary to be found in the area it seems more than likely that both sides of the laneway were enclosed by dry-stone walls.

In the mid-nineteenth century the northern part of the land to the west of the lane was occupied by Thomas Griffin who had a house on the property, though this was accessed from Ragoon Road and not from the lane. To the south of this was land occupied by Thomas Callaghan, without a house. At the southern end of the lane was land occupied by Richard N Somerville, who lived in a substantial house called Kingstown House and this was accessed from Kingston Road to the south, while the lane served only the northern fields on his property.²⁰

By the mid-1990s the spread of the city's suburbs had reached the general area in the vicinity of Bóthar Stiofáin, though not the laneway itself or the land on either side. The housing estate known as Hawthorn Place, to the west of Bóthar Stiofáin had been built, but nothing else in the immediate vicinity.

By the turn of the century the land had been cleared for the laying out of Bóthar Stiofáin and for housing development to the west, though no houses had yet been built. The Western Distributor Road was under construction to the south. The line of Bóthar Stiofáin did not follow the alignment of the laneway along the entire length and the northernmost 200 metres deviated from the original line in order to straighten out the bend and to approach Ragoon Road at right angles.

By about 2008 Bóthar Stiofáin was in existence and the houses to the west had been built. Development on the eastern side of the road was somewhat slower to progress and the northern wing of the Gateway Retail Park has only been completed in the last two years.

²⁰ Griffith's Valuation; Ordnance Survey maps.

3 CONSERVATION STATUS

3.1 PROTECTED STRUCTURES

Galway City Development Plan 2017-2023 includes a number of protected structures in the vicinity of the Canal Road Cycle Route, while there are none in the vicinity of the Bóthar Stiofáin Cycle Route. The following are protected structures of relevance along the Canal Road route, with their reference numbers from the record of protected structures:

- 8501 Rivers/Walkways – including bridges, weirs, walls, embankment, piers & other associated infrastructure.
- 3301 Lock House, 12 Dominick Street Upper
- 7901 Jostle stone, shoeing stone and limestone steps at Pump Lane

In addition, there are three protected structures adjacent to the canal, but on the northern side, away from the proposed works:

- 3204 34 Dominick Street Upper
- 7106 33 New Road
- 7703 Presentation School, Presentation Road

3.2 CONSERVATION AREAS

Two architectural conservation areas have their boundaries on the margin of the Eglinton Canal, though on the northern side opposite to the site for the proposed works:

Lower Dominick Street ACA

7-14 Presentation Road ACA

3.3 NATIONAL INVENTORY OF ARCHITECTURAL HERITAGE

The National Inventory of Architectural Heritage (NIAH) carried out its survey of Galway in 2008. The Eglinton Canal was included in the survey under reference 30313013. The appraisal reads:

This finely designed and expertly built canal was once an essential trade route allowing goods and passengers easy access to the navigable section of the River Corrib and also provided power to several mills. The presence of the canal no doubt encouraged the expansion of trade and industry in the locality and is of significant industrial heritage value as well as amenity value.

Two buildings adjacent to the canal are also included in the survey:

- 30313019 Presentation School, Presentation Road
- 30318021 Lock House, Dominick Street Upper

4 RESULTS OF FIELD INSPECTION

4.1 CANAL ROAD



Plate 1: View south-eastward along Eglinton Canal from University Road

The Eglinton Canal commences at a branch channel of the River Corrib to the north of University Road and runs in a gentle curve for just over a kilometre before entering the canal basin at Claddagh Quay. University Road crosses the canal via a concrete bridge, on the eastern side of which is a platform that formerly served as the seating for a swing bridge when opened. Canal Road Upper runs along the western side of the canal from its junction with University Road. The road level has been regraded at that junction and the original canal quay is buried. A concrete wall runs adjacent to the canal for the first thirty metres or so, beyond which the road reaches the level of the quay.



Plate 2: Bridge at University Road



Plate 3: Coping stones on eastern side of canal

At the tops of the quay walls along the canal there are massive coping stones of dressed limestone. These are about 300 high and stretch back about a metre from the canal edge, with a rounded arris on the quayside.

Along most of the length of the canal, on the western side and parts of the eastern side, a wrought-iron railing is fixed to the coping stones on the canal margin. The railing consists of rectangular-section uprights seated into the coping stones and fixed with lead. In some places repairs have been carried out and the uprights are bolted to the copings. A top rail is rectangular section, though with a slight curvature on the upper surface and this rail is forged onto the tops of the uprights. Two intermediate round bars run through holes pierced in the uprights. The railing is strengthened by means of wrought-iron back braces on the canal side of the railing, leaded into the copings and curving to meet every second upright bar.



Plate 4: Canal railing at Canal Road Upper



Plate 5: View southward on Canal Road Upper

At the northern end of Canal Road Upper the buildings open directly, or almost directly, onto the pavement. The pavement is of mass concrete and the road is surfaced with tarmac. Beyond the northern end of the road the footway is set back behind a grass verge with trees planted at intervals. The houses are detached and semi-detached and have vehicular entrances.



Plate 6: Canal Road Upper



Plate 7: Towpath to the south of Canal Road Upper

Canal Road Upper runs for almost 200 metres, beyond which the towpath continues, guarded by a bollard at each end and available to pedestrians and cycles. The wrought-iron railing continues alongside the towpath with the limestone copings visible. The rest of the towpath is surfaced with asphalt that has a number of cracks and imperfections. The properties on the western side of the towpath are bounded by a rubble-stone wall.



Plate 8: Bridge at Presentation Road

The towpath crosses Presentation Road to Canal Road Lower. Presentation Road crosses the canal via a concrete bridge similar to that seen at University Road. The bridge has tubular steel railings held on concrete posts. On the eastern side of the canal is Presentation National School, which is a protected structure and is included in the NIAH. The school is seen at right in the photograph above.



Plate 9: Footway and verge on Canal Road Lower

Canal Road Lower is similar to Canal Road Upper, with houses along the western side, separated from the roadway by a grass verge and a mass-concrete pavement. The road surface is of tarmacadam and there is parking along the western side of the road. The wrought-iron railing continues along the canal edge, seated onto the limestone coping stones of the canal quay.



Plate 10: Roadway and railing at Canal Road Lower

At the southern end of Canal Road Lower the road narrows and vehicles are excluded for the last thirty metres, which is of the same character as the canal towpath to the south of Canal Road Upper. At the end of this short stretch of towpath is a junction with New Road.



Plate 11: Canal bridge at New Road with number 33 New Road in background

On the eastern side of the bridge is number 33 New Road, which is a protected structure. This is a small two-storey, end-of terrace house.



Plate 12: Canal towpath to the south of New Road

Beyond New Road the canal towpath continues and is similar to the sections of towpath seen further to the north. The wrought-iron railing runs along the eastern side, seated on the limestone coping stones. On the western side is a rubble-stone boundary wall and the towpath is surfaced with asphalt that has cracked in places.



Plate 13: Stone steps at Parkavara

The construction of the canal severed a street called Parkavara, leaving a short section on the western side of the canal. The canal bank is raised above the prevailing ground level to facilitate the water level and part of the canal construction included the provision of a retaining wall and four steps of hammer-dressed limestone leading down into the street.



Plate 14: Northern end of the second lock on the canal

The canal had two locks, at the southern end a sea lock gave access from the canal basin to the open sea, while the second lock was 200 metres up the canal, between Parkavara and Pump Lane. The canal narrows at the lock and a bridge of relatively recent construction crosses at this point. The lock gates have been removed and a new barrier inserted in place of the upper gates to maintain the water level. The level of the water within the lock chamber is permanently low.



Plate 15: Paved area alongside second lock

In the vicinity of the pedestrian bridge the canal edge is protected by a steel railing contemporary with the bridge. Further to the south this gives way to a railing of the original wrought-iron type. The towpath continues past the lock along its route near the western side of the canal corridor, bounded by a stone wall that moves away from the towpath as it approaches Pump Lane. Between that part of the towpath and the lock the surface has been repaved. The railings toward the southern end of the lock differ from the others in that they are fixed to the copings by flanges and bolts rather than being embedded in the surface and secured with lead.



Plate 16: Limestone bollard adjacent to second lock

There are bollards of limestone in the vicinity of the lock, one of which is on the western side. This is surrounded by a border of limestone paving.



Plate 17: Enclosure and steps at Pump Lane

At Pump Lane there is a sunken area adjacent to the towpath and separated from it by a stone wall. This is enclosed on two sides at Pump Lane by a railing similar to that alongside the towpath, but without the back braces. On the southern side there is a gateway in the railing, and this leads to a broad flight of limestone steps, the full width of the basin and leading to the bottom. At the bottom of the basin on the eastern side an opening in the wall would have let water in from the canal. This basin is one of the areas provided during the construction of the canal to facilitate local people wishing to wash their laundry.



Plate 18: Numbers 34 and 36 Dominick Street Lower

Beyond Pump Lane the towpath narrows again and runs fifty metres to Dominick Street, which crosses the canal on a concrete bridge similar to those seen at other crossings. On the eastern side of the canal number 34 Dominick Street Lower, seen in the photograph above, is a protected structure.



Plate 19: Lock House, Dominick Street Upper

Adjacent to the canal towpath on the northern side of Dominick Street Upper is a small house, part single-storey and part two-storey with a projecting gable on the southern façade and another gable at the western end. This is Lock House, which was built as part of the canal construction to house the lock keeper. The house is Tudor-Gothic in style, with mullioned windows in dressed limestone. The eastern side of the house runs alongside the towpath, where there are three windows and a doorway, the windows mullioned and windows and doors having surrounds of dressed limestone with punched faces. The building rises off a low plinth of dressed limestone and has cast-iron rainwater goods running down the façade adjacent to the towpath.



Plate 20: Side of Lock House on towpath



Plate 21: Canal at Raven Terrace

Beyond Dominick Street Raven Terrace faces the canal and the towpath runs down the street. The tubular steel railing on the bridge continues alongside the canal for a distance along Raven Terrace before giving way to a railing that is raised on top of a low limestone wall. This wall terminates towards the eastern end of Raven Row, beyond which a concrete wall curves away from the canal and continues to the junction with Wolfe Tone Bridge. The surface of the road and pavement at Raven Terrace are modern.

4.2 BÓTHAR STIOFÁIN



Plate 22: View southward along Bóthar Stiofáin

Bóthar Stiofáin was laid out in the late 1990s close to the alignment of an existing farm laneway. The road is a broad two-lane road with a grass verge on the eastern side and a footway on the western side. To the west of the road there are residential streets, connecting to Bóthar Stiofáin at five junctions. Along the eastern side there is development, though this is concealed behind a high hedgerow and a belt of trees.



Plate 23: View northward along Bóthar Stiofáin



Plate 24: Stone wall at bus stop on eastern side of road

In places along the road stone walls are visible. These are generally rubble walls about 800mm to 1000mm high with random rubble on both faces and with cement along the top. The photograph above shows a short stretch of wall that is visible at the rear of a bus stop on the eastern side of the road and a gap in the wall gives pedestrian access to the adjacent land. In the photograph below a section of wall is seen at a pedestrian entrance to the Gateway Retail Park. This was a longer section of wall and has been broken through recently to provide the access and with the end of the wall repaired in a different style.



Plate 25: Stone wall at entrance to retail park on eastern side of road



Plate 26: Walls at junction of Ragoon Road

The stone wall is visible near the junction of Bóthar Stiofáin with Ragoon Road, with 120 metres of wall on the western side of the road and a short section visible on the eastern side. This wall continues for a distance in either direction along Ragoon Road. It fits the description of the wall seen elsewhere, standing up to a metre high, faced on both sides with rubble stone and with a skim of cement in the centre at the top.



Plate 27: Detail of wall at eastern side of junction with Ragoon road



Plate 28: Rear of wall on western side of road

5 IMPACT ASSESSMENT AND MITIGATION STRATEGY

5.1 CANAL ROAD

As was noted in the historical background, the canal was constructed between 1848 and 1852, while the railings were added in 1865. It was also noted that the waterways in Galway are included as protected structures in the Galway City Development Plan 2017-2023. It is explicit in this listing that the canal walls and bridges are protected, and it is implicit that the railings are protected under “other associated infrastructure”.

The description of the route of the proposed cycleway that is given above shows that the surfaces of the roads, footways and towpaths are all of relatively late date and are not part of the original canal. The exception would be the coping stones at the quay margin, though the towpath itself is original and only the surface is later. At each of the road crossings along the route the paving, road surfaces and kerbing is also of late date and is not of heritage significance. The five bridges that cross the canal are protected structures, though it is not envisaged that these will be impacted by the proposal.

The elements of the canal infrastructure that could potentially be impacted by the proposal and which need to be safeguarded are:

- Limestone copings along margins of quays
- Wrought-iron railing fixed to copings
- Limestone mooring post or bollard adjacent to the second lock, with its associated limestone paving
- Steps leading down from the towpath to Parkavara

There are also other structures that may possibly be impacted. It is not considered that the protected structures on the eastern side of the canal would be in any way affected provided the works are entirely within the highway and do not encroach within the boundaries of adjacent properties. Two structures that were originally part of the canal project lie alongside the canal and need to be safeguarded from impact:

- Lock House, at 12 Dominick Street Upper
- Sunken basin at Pump Lane

5.2 BÓTHAR STIOFÁIN

As was noted in the historical background, Bóthar Stiofáin was laid out in the late 1990s and the adjacent houses and other buildings have been built since that time. However, part of the road was laid out along the line of a pre-existing farm laneway, which was bounded by stone walls. The road was widened on the western side, with some of the wall on the eastern side potentially remaining in place. If this is the case, however, the original sections of wall are concealed beneath the hedgerows and other vegetation along the side of the road. The examples examined during the survey appear to be replacement walls dating from the time of the construction of Bóthar Stiofáin.

It is noted that the works will necessitate alterations to the junction with Ragoon Road involving the removal of sections of wall and their replacement on an amended alignment. It was shown in the historical background that the present alignment of the northern end of Bóthar Stiofáin dates from the 1990s and the junction is not in the same location as the junction of the farm laneway. The walls on either side of Bóthar Stiofáin near the junction with Ragoon Road were built in the late 1990s when the road was laid out. As the walls on the southern side of Ragoon Road in the vicinity of the junction are in a similar style it is evident that these walls were built at the same time.

There are no buildings or other structures of architectural heritage significance along the proposed route for the cycleway in this location, other than the possibility that there are surviving sections of the field boundary walls concealed beneath vegetation.

In view of the above it is not considered that there will be any architectural heritage impact arising from the proposed cycleway along Bóthar Stiofáin.

5.3 MITIGATION

We recommend the following actions in mitigation of the potential impacts above.

- The proposed surface of the cycleway and associated works should avoid covering of, or damage to, the limestone copings at the edge of the canal.
- The wrought-iron railing alongside the canal should be protected from damage by vehicles and machinery or by other factors during construction.
- Should it be necessary to upgrade the railings in any way for reasons of safety this should be done in accordance with a conservation method statement to be compiled by a suitably qualified conservation professional in conjunction with the designers of the works and Galway City Council.
- The limestone mooring post or bollard adjacent to the second lock on the canal and its associated limestone paving should be protected from damage by vehicles and machinery or by other factors during construction.
- The limestone steps leading down to Parkavara and their associated wrought-iron railing should be protected from damage by vehicles and machinery or by other factors during construction.
- The front boundary of Lock House should be protected from damage by vehicles and machinery or by other factors during construction.
- The sunken basin at Pump Lane and its surrounding walls and railings should be protected from damage by vehicles and machinery or by other factors during construction

6 REFERENCES

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CARTOGRAPHIC SOURCES

Bellin, J N, *Plan de Galloway et ses Environs*.

Logan, Michael, 1818, *Plan of the Town and Suburbs of Galway*.

Ordnance Survey, 1839, six-inch map, Galway sheet 94.

Ordnance Survey, 1872, 1:500 map, Galway sheets 11, 17, 23, 30.

Ordnance Survey, 1913, five-foot map, Galway sheets 1, 3, 6, 7.

Ordnance Survey, c1930s, six-inch map, Galway sheet 94.

ELECTRONIC SOURCES

<http://map.geohive.ie/mapviewer.html>

Historic Environment Viewer (archaeology.ie)

www.buildingsofireland.ie

griffiths.askaboutireland.ie

Appendix D

Public Lighting Lantern Upgrade Project 2020



GALWAY CITY COUNCIL

PUBLIC LIGHTING LANTERN UPGRADE PROJECT 2020

Bothar Stiofain & Clybaun Road Upgrade Works

 +353 094 9360954  www.electricskyline.ie  info@electricskyline.ie



Table of Contents

Appendix A – Detailed Design Report & Drawing

Appendix B – Project Supply & Install Cost Summary



Appendix A – Detailed Design Report & Drawings

DATE: 29 July 2021
DESIGNER: D.Larkin
PROJECT No: GCCC 2021
PROJECT NAME: Clybaun Rd



Outdoor Lighting Report

The lighting design has achieved the following Lighting
Standards;
P2 = BS 5489-1:2020

PREPARED BY: Electric Skyline Ltd
CRF House,
Dalton St,
Claremorris,
Co. Mayo,
F12 N2Y2
e-mail: info@electricskyline.ie
website: www.electricskyline.ie

Layout Report

General Data

Dimensions in Metres Angles in Degrees

Calculation Grids

ID	Grid Name	X	Y	X' Length	Y' Length	X' Spacing	Y' Spacing
1	Grid 1	526132.76	724208.73	159.80	353.50	1.49	1.50
2	Grid 2	526123.76	724673.35	76.81	183.11	1.48	1.49

Luminaires

Luminaire A Data

Supplier	
Type	AXIA 3.2 5266 Integrated lenses - 32 OSLO ON SQUARE GIANT@800m
Lamp(s)	32 OSLO SQUARE GIANT@800mA NW 740 230V 00-36-985
Lamp Flux (klm)	10.31
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Maintenance Factor	0.83
Imax70,80,90(cd/klm)	1241.8, 138.8, 0.0
No. in Project	14

Luminaire B Data

Supplier	
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Lamp(s)	16 OSLO SQUARE GIANT@700mA NW 740 230V 00-53-397
LampFlux(klm)/Colour	4.73 NW 4000K/70
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Layout

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2	A	526218.29	724269.91	8.00	352.00	5.00	0.00	0.35			
3	A	526223.06	724311.20	8.00	351.00	5.00	0.00	0.35			
4	A	526235.25	724346.01	8.00	178.00	5.00	0.00	0.35			
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WP-6	A	526212.35	724411.60	9.00	11.00	5.00	0.00	0.35			
SP-7	A	526206.54	724444.29	9.00	7.00	5.00	0.00	0.35			
SP-9	A	526197.66	724485.85	9.00	7.00	5.00	0.00	0.35			
NEW-1	A	526158.60	724760.37	8.00	10.00	5.00	0.00	0.35			
17	B	528874.19	725022.02	6.00	191.00	5.00	0.00	1.00			
REP-41	A	526183.02	724682.84	8.00	187.00	5.00	0.00	0.35			
8	A	526214.92	724464.72	6.00	188.00	0.00	0.00	0.35			
NEW-42	A	526177.12	724726.63	8.00	188.00	5.00	0.00	0.35			
NEW-2	A	526153.54	724795.30	8.00	22.00	5.00	0.00	0.35			
NEW-17	A	526161.78	724823.83	8.00	188.00	5.00	0.00	0.35			

Horizontal Illuminance (lux)

Grid 1

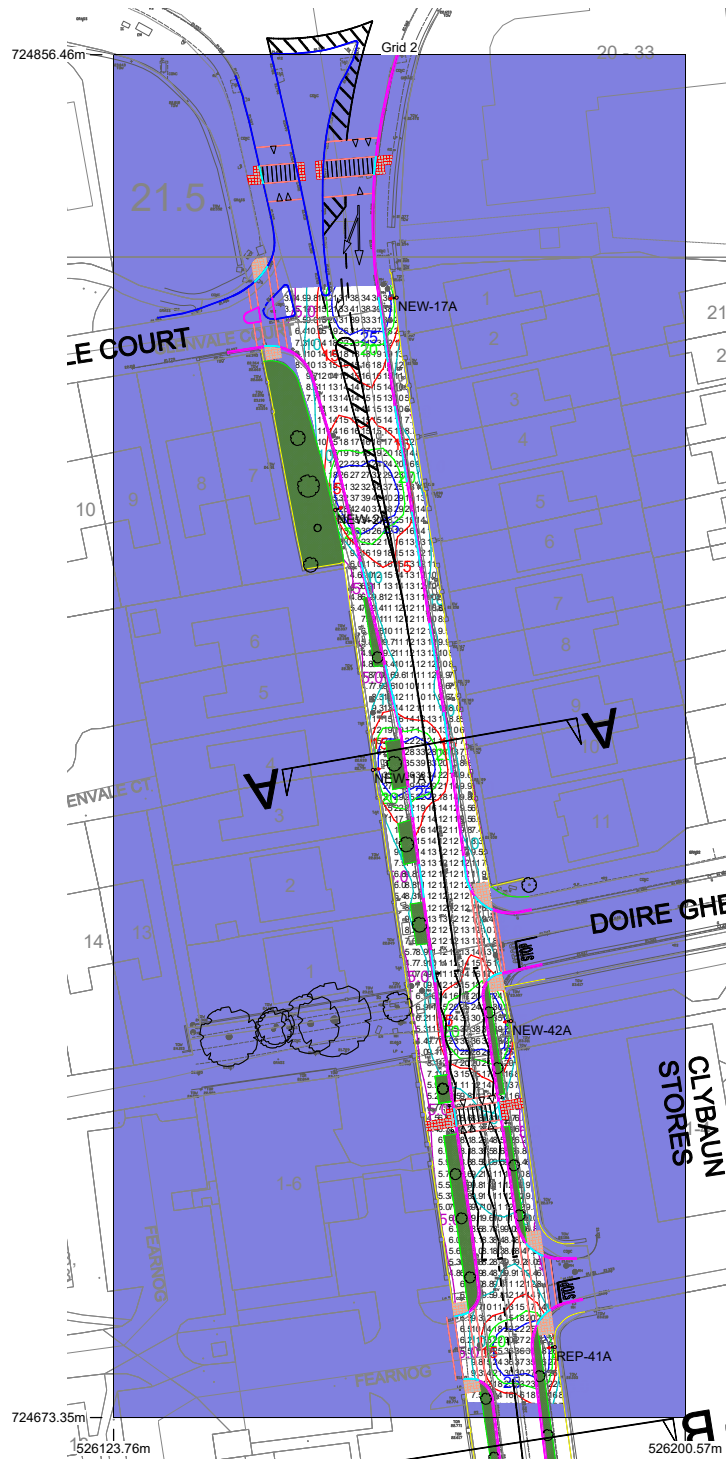


Results

Eav	16.85
Emin	4.40
Emax	90.05
Emin/Emax	0.05
Emin/Eav	0.26

Horizontal Illuminance (lux)

Grid 2



Results

Eav	14.57
Emin	2.95
Emax	41.91
Emin/Emax	0.07
Emin/Eav	0.20

DATE: 29 July 2021
DESIGNER: D.Larkin
PROJECT No: GCCC 2021
PROJECT NAME: Bothair Stiofan Widening



Outdoor Lighting Report

The lighting design has achieved the following Lighting Standards;
P1 & C2-- BS 5489-1:2020

PREPARED BY: Electric Skyline Ltd
CRF House,
Dalton St,
Claremorris,
Co. Mayo,
F12 N2Y2
e-mail: info@electricskyline.ie
website: www.electricskyline.ie

Layout Report

General Data

Dimensions in Metres Angles in Degrees

Calculation Grids

ID	Grid Name	X	Y	X' Length	Y' Length	X' Spacing	Y' Spacing
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3	Bothair Stiofan 3 - P2	526439.71	725012.13	111.68	157.88	1.49	1.49

Luminaires

Luminaire A Data

Supplier	
Type	AXIA 3.2 5266 Integrated lenses - 32 OSLO ON SQUARE GIANT@800m
Lamp(s)	32 OSLO SQUARE GIANT@800mA NW 740 230V 00-36-985
Lamp Flux (klm)	10.31
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Imax70,80,90(cd/klm)	1241.8, 138.8, 0.0
Lamp S/P Ratio	0.00
No. in Project	20

Luminaire B Data

Supplier	
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No. in Project	7

Layout

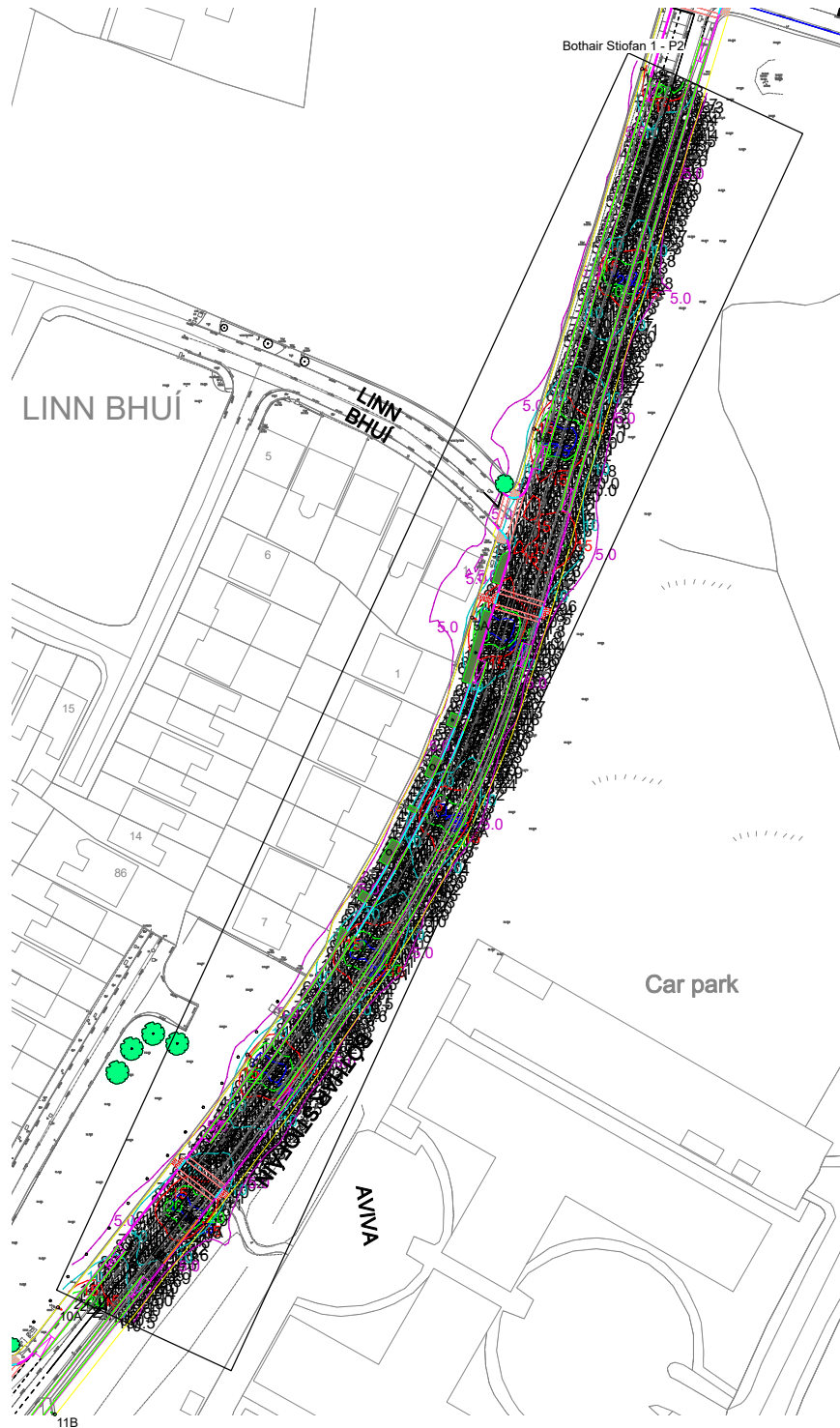
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3	A	526800.27	725666.09	10.00	342.00	5.00	0.00	0.35			
4	B	526807.62	725640.65	10.00	157.00	5.00	0.00	0.35			
5	A	526786.92	725625.47	10.00	340.00	5.00	0.00	0.35			
6	A	526786.73	725580.94	10.00	155.00	5.00	0.00	0.35			
7	A	526769.16	725550.30	10.00	150.00	5.00	0.00	0.35			
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9	A	526729.69	725494.73	10.00	140.00	5.00	0.00	0.35			
10	A	526697.77	725476.98	10.00	329.00	5.00	0.00	0.35			
11	B	526697.12	725453.98	10.00	152.00	5.00	0.00	0.35			
12	A	526671.04	725446.65	10.00	318.00	5.00	0.00	0.35			
13	B	526663.18	725407.98	10.00	153.00	5.00	0.00	0.35			
14	B	526636.98	725372.81	10.00	144.00	5.00	0.00	0.35			
15	A	526608.21	725362.79	10.00	338.00	5.00	0.00	0.35			
16	B	526614.25	725337.50	10.00	165.00	5.00	0.00	0.35			
17	A	526590.89	725320.36	10.00	339.00	5.00	0.00	0.35			
18	A	526597.08	725291.63	10.00	159.00	5.00	0.00	0.35			

Layout Continued

ID	Type	X	Y	Height	Angle	Tilt	Cant	Out-reach	Target X	Target Y	Target Z
19	A	526583.55	725254.07	10.00	159.00	5.00	0.00	0.35			
20	A	526555.81	725224.67	10.00	341.00	5.00	0.00	0.35			
21	B	526565.23	725203.64	10.00	159.00	5.00	0.00	0.35			
22	A	526545.60	725190.82	10.00	340.00	5.00	0.00	0.35			
23	A	526536.34	725155.92	10.00	340.00	5.00	0.00	0.35			
24	B	526548.75	725136.55	10.00	172.00	5.00	0.00	0.35			
25	A	526530.87	725116.27	10.00	355.00	5.00	0.00	0.35			
26	A	526544.49	725080.98	10.00	173.00	5.00	0.00	0.35			
27	A	526526.68	725043.26	10.00	355.00	5.00	0.00	0.35			

Horizontal Illuminance (lux)

Bothair Stiofan 1 - P2



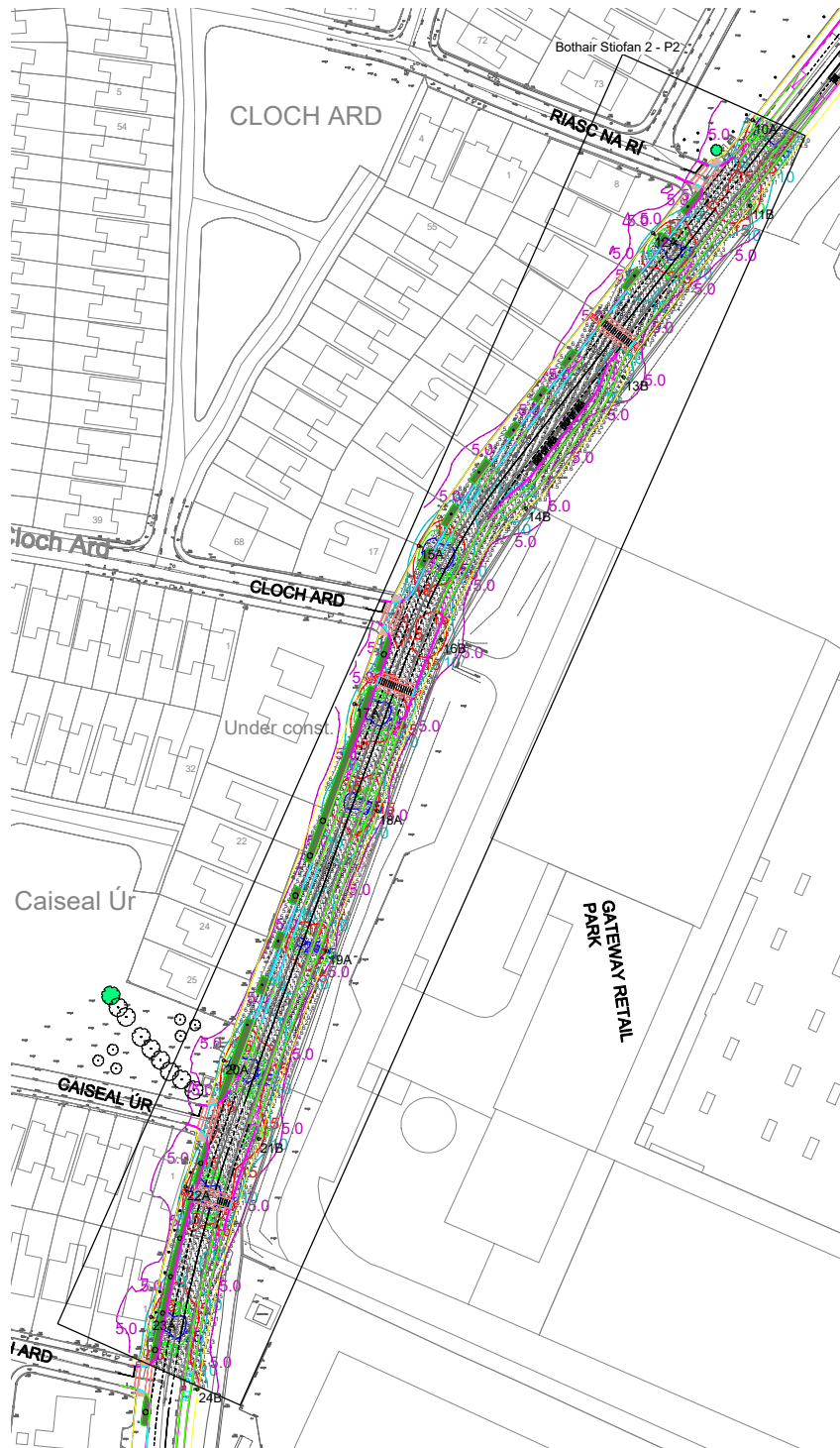
Results

Eav	12.43
Emin	3.50
Emax	29.81
Emin/Emax	0.12
Emin/Eav	0.28

8158212152

Horizontal Illuminance (lux)

Bothair Stiofan 2 - P2

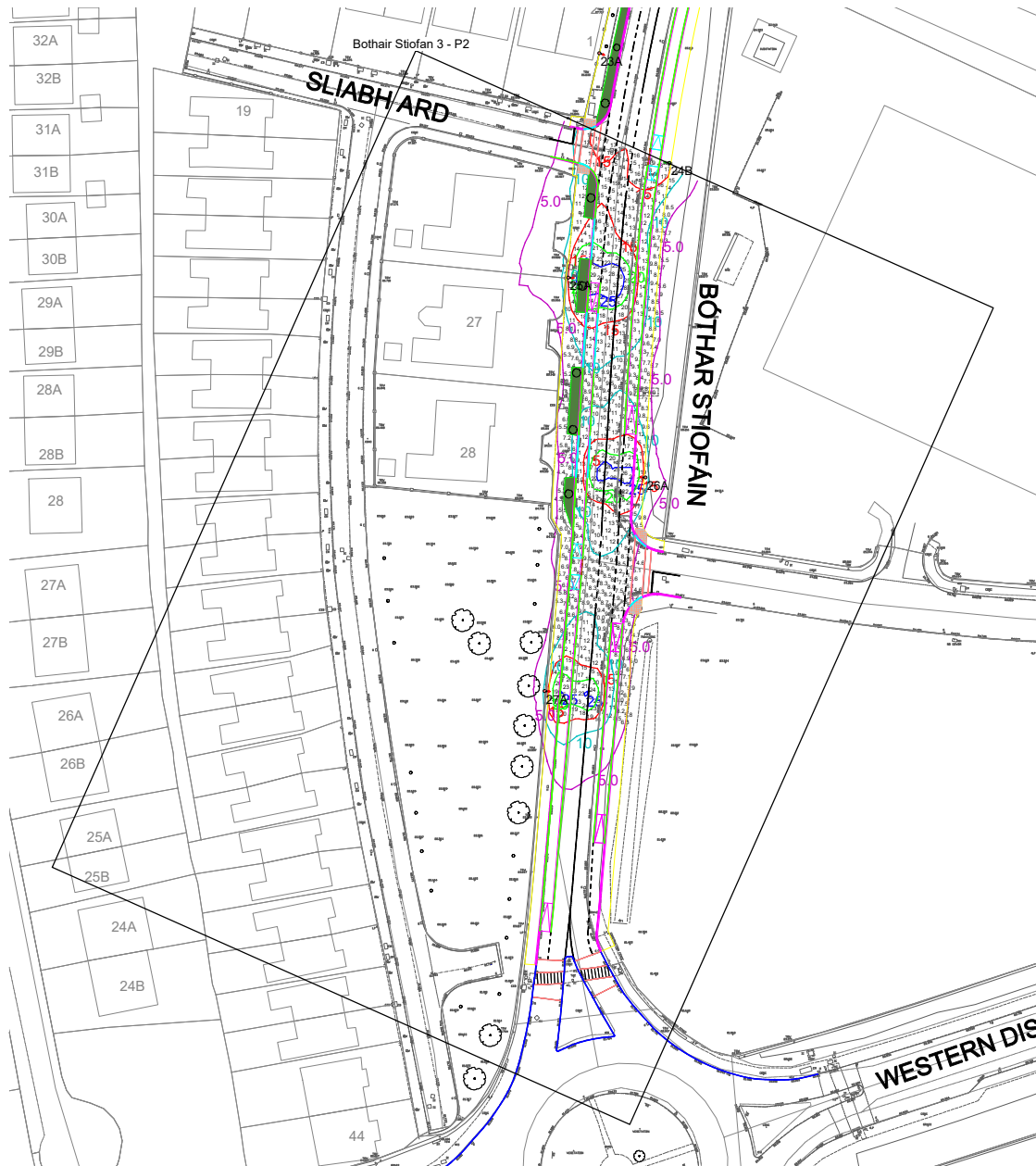


Results

Eav	13.25
Emin	3.36
Emax	33.04
Emin/Emax	0.10
Emin/Eav	0.25

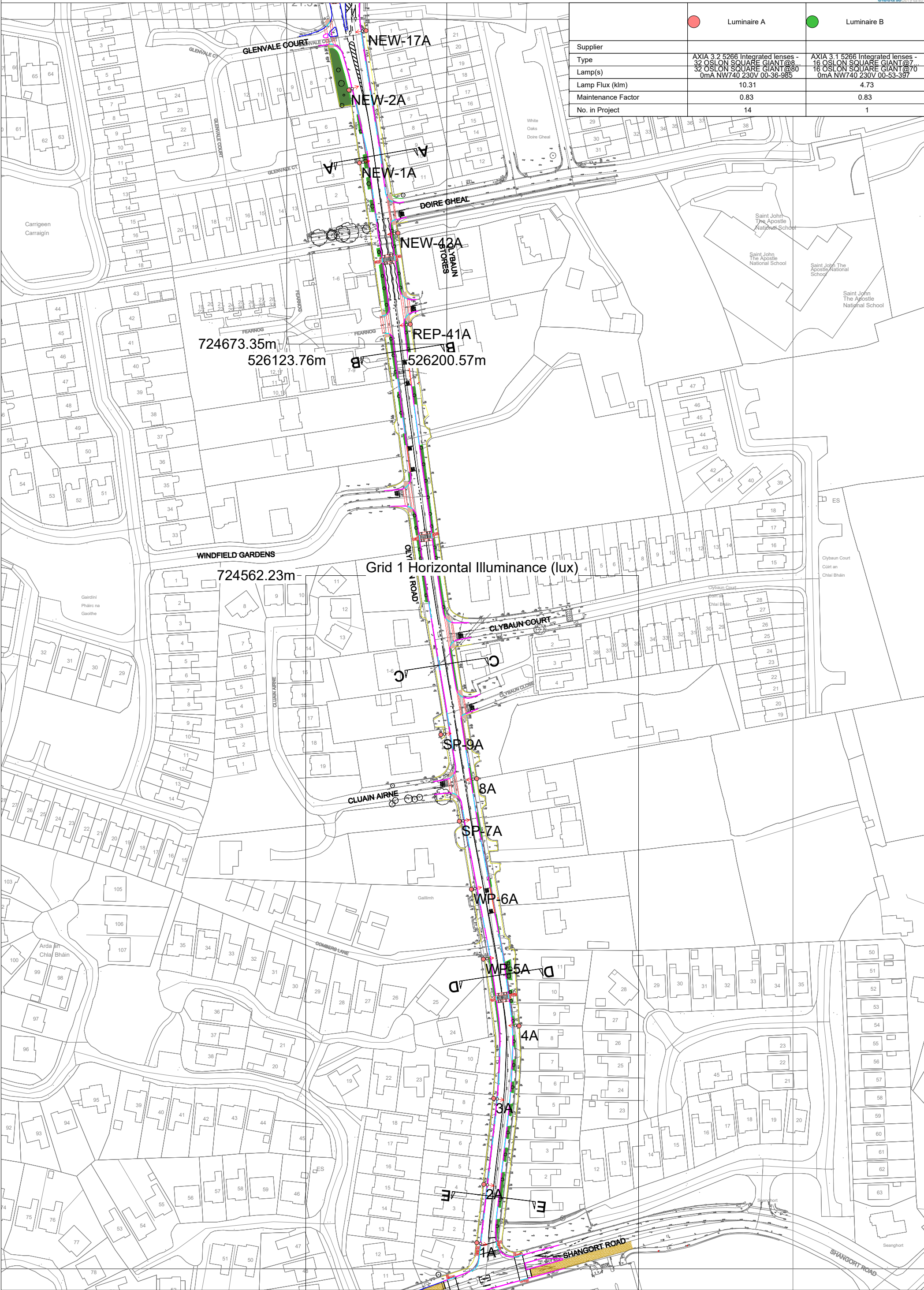
Horizontal Illuminance (lux)

Bothair Stiofan 3 - P2



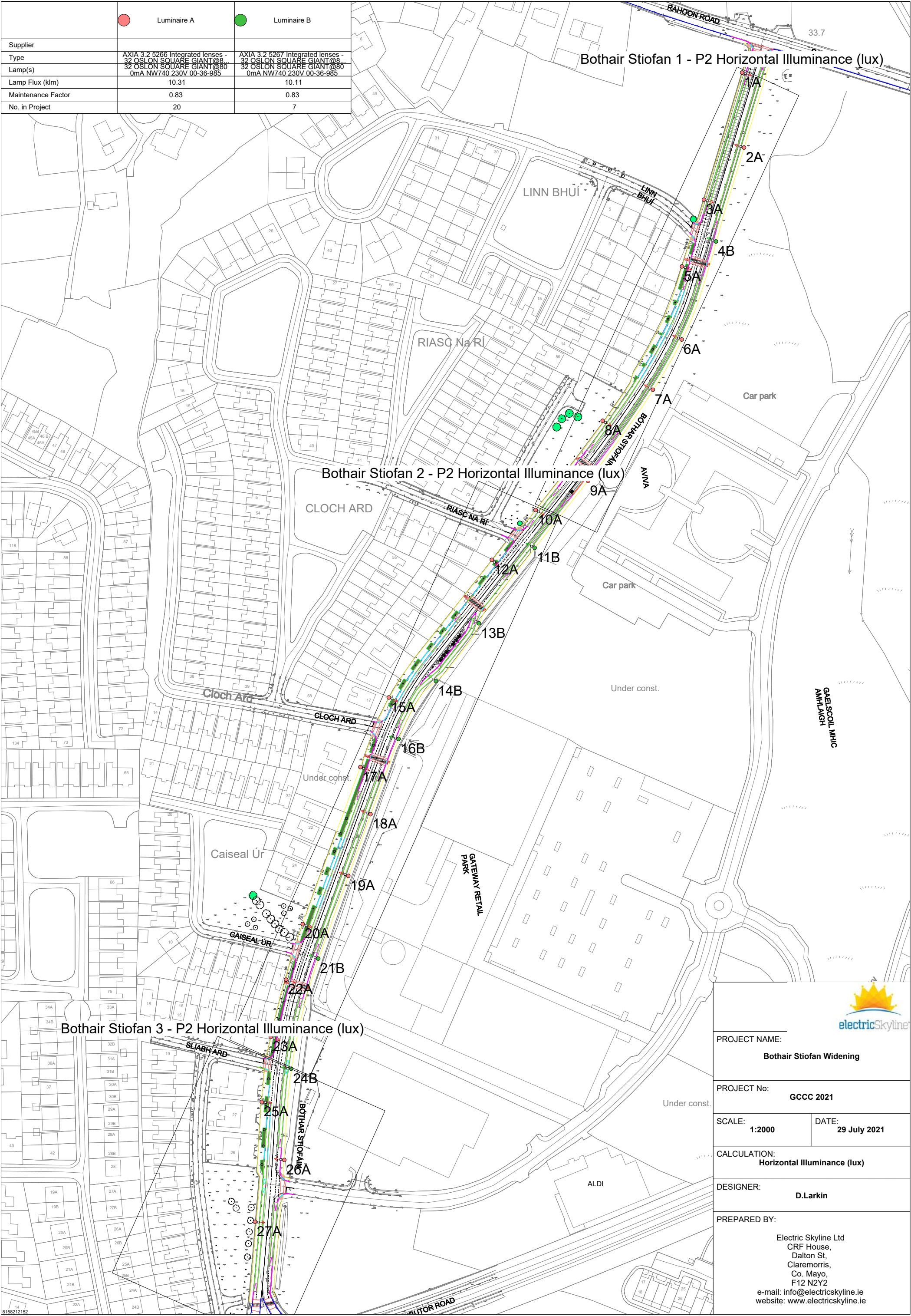
Results

Eav	13.04
Emin	4.21
Emax	31.51
Emin/Emax	0.13
Emin/Eav	0.32



	<div><div></div> Luminaire A</div>	<div><div></div> Luminaire B</div>
Supplier	AXIA 3.2 5266 Integrated lenses - 32 OSLO SQUARE GIANT@80	AXIA 3.1 5266 Integrated lenses - 16 OSLO SQUARE GIANT@70
Type	32 OSLO SQUARE GIANT@80	16 OSLO SQUARE GIANT@70
Lamp(s)	0mA NW740 230V 00-36-985	0mA NW740 230V 00-53-397
Lamp Flux (klm)	10.31	4.73
Maintenance Factor	0.83	0.83
No. in Project	14	1

	<div><div></div></div> Luminaire A	<div><div></div></div> Luminaire B
Supplier		
Type	AXIA 3.2 5266 Integrated lenses - 32 OSLO SQUARE GIANT@80	AXIA 3.2 5267 Integrated lenses - 32 OSLO SQUARE GIANT@80
Lamp(s)	32 OSLO SQUARE GIANT@80 0mA NW740 230V 00-36-985	32 OSLO SQUARE GIANT@80 0mA NW740 230V 00-36-985
Lamp Flux (klm)	10.31	10.11
Maintenance Factor	0.83	0.83
No. in Project	20	7



PROJECT NAME:		Bothair Stiofan Widening	
PROJECT No:		GCCC 2021	
SCALE:	1:2000	DATE:	29 July 2021
CALCULATION:			
Horizontal Illuminance (lux)			
DESIGNER:			
D.Larkin			
PREPARED BY:			
Electric Skyline Ltd CRF House, Dalton St, Claremorris, Co. Mayo, F12 N2Y2 e-mail: info@electricskyline.ie website: www.electricskyline.ie			

Appendix B – Project Supply & Install Cost Summary

Appendix E

Stage 1&2 Road Safety Audit Report

Clifton Scannell Emerson & Associates

Bothár Stiofáin Pedestrian and
Cycle Network Scheme

Stage 1 & 2 Road Safety Audit

Clifton Scannell Emerson & Associates

Bothár Stiofáin Pedestrian and Cycle Network Scheme

Stage 1 & 2 Road Safety Audit

Document Ref: P21-066-PSW3-RP-001

Rev	Prepared By	Reviewed By	Approved By	Issue Date	Reason for Revision
4.0	MAH	PJM	PJM	6 th April 2023	Revised Feedback
3.0	MAH	PJM	PJM	13 th Jan 2022	Revised Feedback
2.0	MAH	PJM	PJM	7 th July 2021	Final
1.0	MAH	PJM	PJM	18 th Jun. 2021	Draft Report

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1 Introduction

1.1 General

This report results from a Stage 1 & 2 Road Safety Audit on the proposed Bothár Stiofáin Pedestrian and Cycle Network Scheme carried out at the request of Ms Hilary Owens of Clifton Scannell Emerson & Associates.

The members of the Road Safety Audit Team are independent of the design team, and include: -

Mr. Peter Monahan

(BE MSc CEng FIEI RSACert)
Road Safety Audit Team Leader

Mr. Mazen Al Hosni

(BEng, MSc, MIEI)
Road Safety Audit Team Member

The Road Safety Audit took place during June 2021 and comprised an examination of the documents provided by the designers (see Appendix B). In addition to examining the documents supplied the Road Safety Audit Team visited the site of the proposed measures on the 1st June 2021. Weather conditions during the site visit were dry and the road surface was dry. Traffic volumes during the site visit low, pedestrian and cyclist volumes were very low and traffic speeds were considered to be generally within the posted speed limit.

Where problems are relevant to specific locations these are shown on drawing extracts within the main body of the report and their locations are shown in Appendix D. Where problems are general to the proposals sample drawing extracts are within the main body of the report where considered necessary.

This has been carried out in accordance with the requirements of GE-STY-01024 - Road Safety Audit (December 2017), contained on the Transport Infrastructure Ireland (TII) Publications website.

The scheme has been examined and this report compiled in respect of the consideration of those matters that have an adverse effect on road safety and considers the perspective of all road users. It has not been examined or verified for compliance with any other standards or criteria. The problems identified in this report are considered to require action in order to improve the safety of the scheme and minimise collision occurrence.

If any of the recommendations within this road safety audit report are not accepted, a written response is required, stating reasons for non-acceptance. Comments made within the report under the heading of Observations are intended to be for information only. Written responses to Observations are not required.

1.2 Items Not Submitted for Auditing

Details of the following items were not submitted for audit; therefore no specific problems have been identified at this stage relating to these design elements, however where the absence of this information has given rise to a safety concern it has been commented upon in Section 3: -

- Vehicle swept paths;
- Drainage;
- Public Lighting; and
- Visibility splays.

2 Project Description

2.1 General

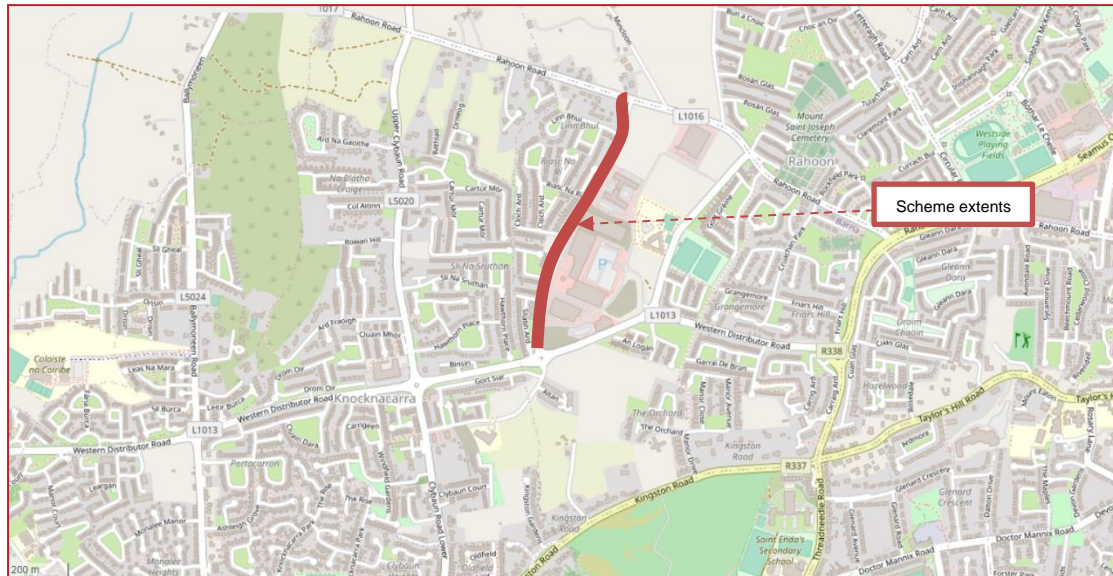


FIGURE 2-1: LOCATION PLAN

As part of the Bothár Stiofáin Pedestrian and Cycle Network Scheme works are proposed to improve pedestrian facilities along Bóthair Stiofáin. Bóthair Stiofáin is single carriageway road located in a suburban environment with a footpath along its western side, and with a number of direct residential accesses and side roads serving residential estates also on its western side. It is bounded to the east by the Gateway Retail Park and other commercial developments.

The proposed works extend over approximately 850m of the road, between the roundabout with the Western Distributor Road, to the south, & its junction with the Rahoan Road, to the north, and include: -

- Amending the road cross-section by reducing the trafficked carriageway width to 6m (2 No. 3m lanes in each direction) and the provision of 2.0m wide cycle tracks along both sides of the road;
- A renewed & widened footpath along the western side of the road and a new footpath along the eastern side of the road;
- Four new zebra crossings of Bóthair Stiofáin at the following locations:
 - South of Linn Bhuí;
 - Existing bus stop at Aviva;
 - South of Riasc Na Rí; and
 - South Cloch Ard.
- The provision of raised table uncontrolled pedestrian crossings at the existing side road junctions; and
- Provision of a “Kassel Kerb” at the existing bus stop.

2.2 Collision History

The Road Safety Authority website (www.rsa.ie) was consulted to identify historical collisions in the vicinity of the proposed scheme. The website includes summary information on recorded collision occurrence for the period 2005 to 2016 (see Figure 2-2).

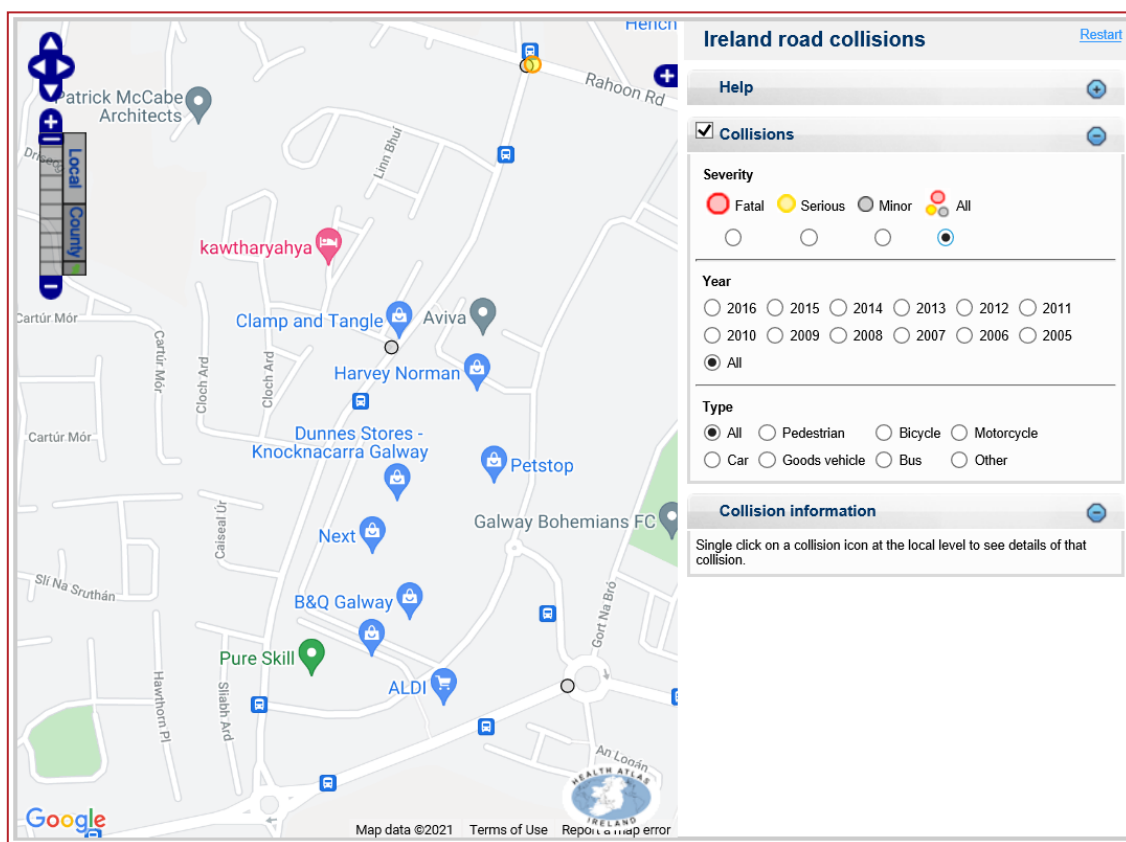


FIGURE 2-2: HISTORICAL COLLISIONS WITHIN THE EXTENTS OF THE PROPOSED SCHEME (SOURCE WWW.RSA.IE)

As shown in Figure 2-2, a total of 3 collisions were recorded within the extents of the Scheme between 2005 and 2016, 2 of them are Minor Injury Collisions and 1 is Serious Injury Collisions. Table 2.1 provides a summary of the collisions recorded within the Scheme during this period.

TABLE 2.1: COLLISIONS RECORDED ON THE RSA COLLISION DATABASE WITHIN THE EXTENTS OF THE PROPOSED SCHEME (SOURCE: WWW.RSA.IE)

Severity	Year	Vehicle	Collision Type	Day week	of Time	Speed limit	Casualties	Location
Minor	2016	Car	Angle, both straight	Thursday	1600-1900	50 KPH	3	Bóthair Stiofáin/Rahoon Road Junction
Minor	2009	Car	Rear end, left turn	Wednesday	1600-1900	50 KPH	1	Bóthair Stiofáin
Serious	2007	Car	Angle, right turn	Tuesday	1000-1600	50 KPH	1	Bóthair Stiofáin/Rahoon Road Junction

3 Main Report

3.1 Problem

Location: Southern Scheme Tie-in

Summary: Cyclist facilities terminate on approach to existing roundabout, with no route provided for cyclists to traverse the roundabout.

The existing roundabout with the Western Distributor Road, at the southern scheme extents, is a relatively heavily-trafficked urban roundabout with no facilities for cyclists.

It is proposed to terminate the new cycle facilities on Bóthar Stiofáin at the existing zebra crossing immediately north of the roundabout. The proposed layout, therefore, will result in cyclists having to enter the heavily-trafficked circulating carriageway in order to continue their journey. This arrangement is similar to the existing arrangements for cyclists on the Western Distributor Road arms of the roundabout.



The Audit Team are concerned that the increased volumes of cyclists arising as a result of the proposed improvements along Bóthar Stiofáin, will lead to increased exposure of cyclists to vehicular traffic at/on the roundabout, and an increase in the number of vehicular/cyclist collisions at this junction.

Recommendation

Measures should be included to provide a safe route for cyclists through the existing roundabout at the southern scheme extents.

3.2 Problem

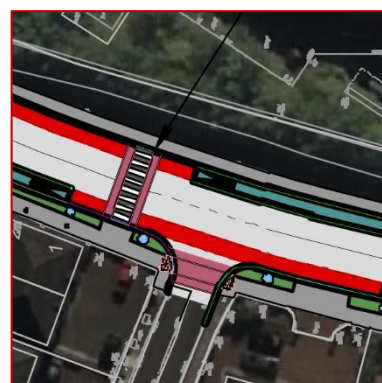
Location: Zebra crossing adjacent to the Sliabh Ard Junction

Summary: Proximity of the proposed zebra crossing to the side road could result in left-turning drivers exiting the side road being insufficiently aware of an NMU on the crossing, resulting in a failure to stop and possible vehicular/pedestrian collisions.

The proximity of the proposed zebra crossing immediately north of the Sliabh Ard Junction could result in left-turning drivers exiting the side road being insufficiently aware of an NMU on the crossing, as their attention will be focused on approaching vehicles/cyclists from the south, resulting in a possible failure to stop leading to vehicular/pedestrian collisions.

Recommendation

Increase the distance between the side road and the crossing so that left-turning side road drivers have enough distance/time to be aware of an NMU about to commence a crossing, or on the crossing.



3.3 Problem

Location: Drop-Off Area on the eastern side of the road at the Gateway Retail Park.

Summary: Insufficient buffer between drop-off area and new cycle track.

It is proposed to retain the existing “Drop Off Area” on the eastern side of Bóthar Stiofáin, south of the Riasc na Rí junction, which presumably caters for access to the Gateway Retail Park, and to provide a new footpath & cycle track to the east of the existing drop off area.

Consequently, embarking/disembarking passengers will need to cross the cycle track where there is an increased risk of conflicts with cyclists. In particular, disembarking passengers may open vehicle doors into the path of an oncoming cyclists leading to collisions and minor injuries.



Recommendation

Provide a buffer between the drop-off area and the adjacent cycle track, of sufficient width to ensure that an open vehicle door will not extend into the cycle track.

3.4 Problem

Location: Throughout the Scheme

Summary: Unclear if the amended road layout will be adequately lit.

There is existing lighting columns along the eastern side of the road, however no information has been provided in relation to amended or additional lighting provisions. The proposed amendments to the road layout are likely to require the relocation of some of the existing lighting columns, and possibly the provision of additional lighting columns, to ensure that the road is adequately lit.

In addition, it is considered likely that increased lighting provision will be required at the proposed zebra crossings to ensure that NMUs on the crossings are adequately visible to approaching drivers during the hours of darkness.

Insufficient street lighting could result in dark areas within the carriageway, or the adjacent cycle track/footpath, resulting in road users failing to see an upcoming hazard.

Recommendation

Ensure that the amended road layout, and in particular the proposed zebra crossings, are adequately lit.

3.5 Problem

Location: Linn Bhuí Junction

Summary: Position of existing tree may impede inter-visibility between pedestrians at the uncontrolled crossing and approaching eastbound drivers.

It is proposed to retain an existing tree on Linn Bhuí, immediately upstream of an uncontrolled pedestrian crossing at its junction with Bóthar Stiofáin. It is unclear from the information provided if the retention of this tree could impede inter-visibility between a non-motorised road user (NMU) about to commence crossing and an approaching eastbound driver.



Insufficient inter-visibility could result in unsafe crossing manoeuvres and possible vehicular/pedestrian collisions.

Recommendation

Ensure adequate inter-visibility is available between NMUs at the crossing and approaching drivers.

3.6 Problem

Location: Throughout the Scheme

Summary: Unclear how surface run-off will be drained from within the proposed cycle tracks.

No information has been provided in relation to the proposed drainage measures to be provided. It is noted from the cross sections that the cycle track falls away from the carriageway. It is unclear how surface run-off is to be collected from the new cycle tracks, and whether amended/new drainage will be provided to ensure that the carriageway is adequately drained.

Should inadequate drainage measures be provided there is a risk of ponding either within the carriageway, cycle track or adjacent footpaths. Ponding could give rise to loss-of-control collisions for cyclists and/or motorised vehicles, in particular two-wheel motorised vehicles, or lead to slips & falls for pedestrians, in particular during frosty/icy conditions.

Recommendation

Ensure that the carriageway, cycle tracks and footpaths are adequately drained, and that no ponding occurs.

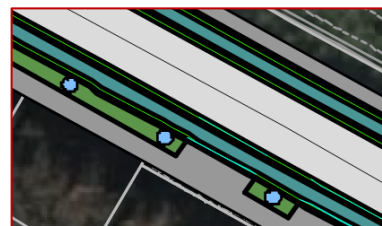
3.7 Problem

Location: Throughout the Scheme

Summary: Unclear if sufficient vertical clearance will be provided between proposed planting and adjacent footpaths/cycle tracks.

Throughout the Scheme a number of trees have been indicated directly adjacent to existing/proposed footpaths & tracks. It is unclear from the information provided what type of planting is proposed.

Should the proposed planting provide insufficient vertical clearance from the adjacent footpath and/or cycle track there is a risk that the boughs could present obstacles/hazards to pedestrians, in particular visually impaired pedestrians, and/or cyclists.



Recommendation

Ensure that the selected species will either not overhand the adjacent paths/cycle tracks when mature, or that they will provide sufficient vertical clearance for pedestrians & cyclists on the adjacent footpaths/cycle tracks.

3.8 Problem

Location: Throughout the Scheme

Summary: Lack of clarity on the height of the proposed dropped kerbs.

It is unclear from the information provided if there will be a difference between the proposed dropped kerbs at vehicular access locations and at pedestrian crossings. An insufficient kerb upstand at vehicular accesses could lead to visually impaired pedestrians inadvertently entering the cycle track and/or the carriageway with an increased risk of being struck by a vehicle. Excessive kerb upstands at pedestrian crossings would present difficulties for mobility-impaired road users.

Recommendation

Ensure dropped kerbs at pedestrian crossings are flush with the carriageway (not greater than 6mm in height), and that kerbs at private vehicular access locations are a minimum of 25mm in height.

3.9 Problem

Location: Throughout the Scheme

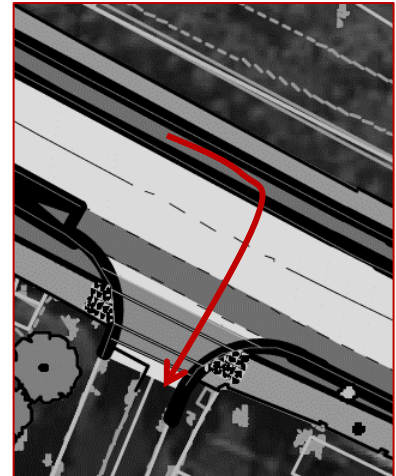
Summary: Unclear if the height/shape of the kerbs between the cycle track and the carriageway at side road junctions will permit cyclists to safely leave or join the cycle track.

It is likely that cyclists will wish to leave/join the cycle tracks at the various side road junctions along the road. It is unclear if the profile of the kerb between the cycle track and the carriageway at these locations will permit safe egress/access from/to the cycle track.

A failure to provide an appropriate kerb at these locations could result in cyclists failing to retain control of their bicycle leading to falls and personal injuries.

Recommendation

Ensure measures are incorporated to permit safe right-turns by cyclists entering/exiting the side roads from/to the cycle tracks along the route.



4 Observations

- 4.1 No tactile paving has been indicated at the zebra crossing near Sliabh Ard. This is assumed to be a draughting error, as tactile paving has been indicated at the other proposed crossings.

5 Road Safety Audit Team Statement

We certify that we have examined the drawings referred to in this report. The examination has been carried out with the sole purpose of identifying any features of the design that could be removed or modified in order to improve the safety of the scheme.

The problems identified have been noted in this report together with associated safety improvement suggestions, which we would recommend should be studied for implementation.

No one on the Road Safety Audit Team has been involved with the design of the scheme.

ROAD SAFETY AUDIT TEAM LEADER

Peter Monahan

Signed:



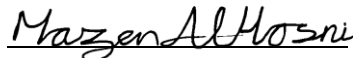
Dated:

6th April 2023

ROAD SAFETY AUDIT TEAM MEMBER

Mazen Al Hosni

Signed:



Dated:

6th April 2023

Appendix A – Road Safety Audit Brief Checklist

Have the following been included in the audit brief?: (if 'No', reasons should be given below)

	Yes	No
1. The Design Brief	<input checked="" type="checkbox"/>	<input type="checkbox"/>
2. Departures from Standard	<input type="checkbox"/>	<input checked="" type="checkbox"/>
3. Scheme Drawings	<input checked="" type="checkbox"/>	<input type="checkbox"/>
4. Scheme Details such as signs schedules, traffic signal staging	<input type="checkbox"/>	<input checked="" type="checkbox"/>
5. Collision data for existing roads affected by scheme	<input checked="" type="checkbox"/>	<input type="checkbox"/>
6. Traffic surveys	<input checked="" type="checkbox"/>	<input type="checkbox"/>
7. Previous Road Safety Audit Reports and Designer's Responses/Feedback Form	<input type="checkbox"/>	<input checked="" type="checkbox"/>
8. Previous Exception Reports	<input type="checkbox"/>	<input checked="" type="checkbox"/>
9. Start date for construction and expected opening date	<input type="checkbox"/>	<input checked="" type="checkbox"/>
10. Any elements to be excluded from audit	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Any other information?

(if 'Yes', describe below)

☐ ☒

Appendix B – Documents Submitted to the Road Safety Audit Team

DOCUMENT/DRAWING TITLE	DOCUMENT/DRAWING NO.	REVISION
Public Engagement Drawing Bóthair Stiofáin	19_151-CSE-GEN-XX-DR-C-2111	P01 (S2)
Draft Preliminary Design Report - Bóthar Stiofáin, Galway Cycle Network Stage 2	RPT-19_151-017	-

Appendix C – Feedback Form

Road Safety Audit Feedback Form

Scheme: Bothár Stiofáin Pedestrian and Cycle Network Scheme

Route No.: Bóthair Stiofáin

Audit Stage: Stage 1 & 2 Road Safety Audit Date Audit Completed: 8th June 2021

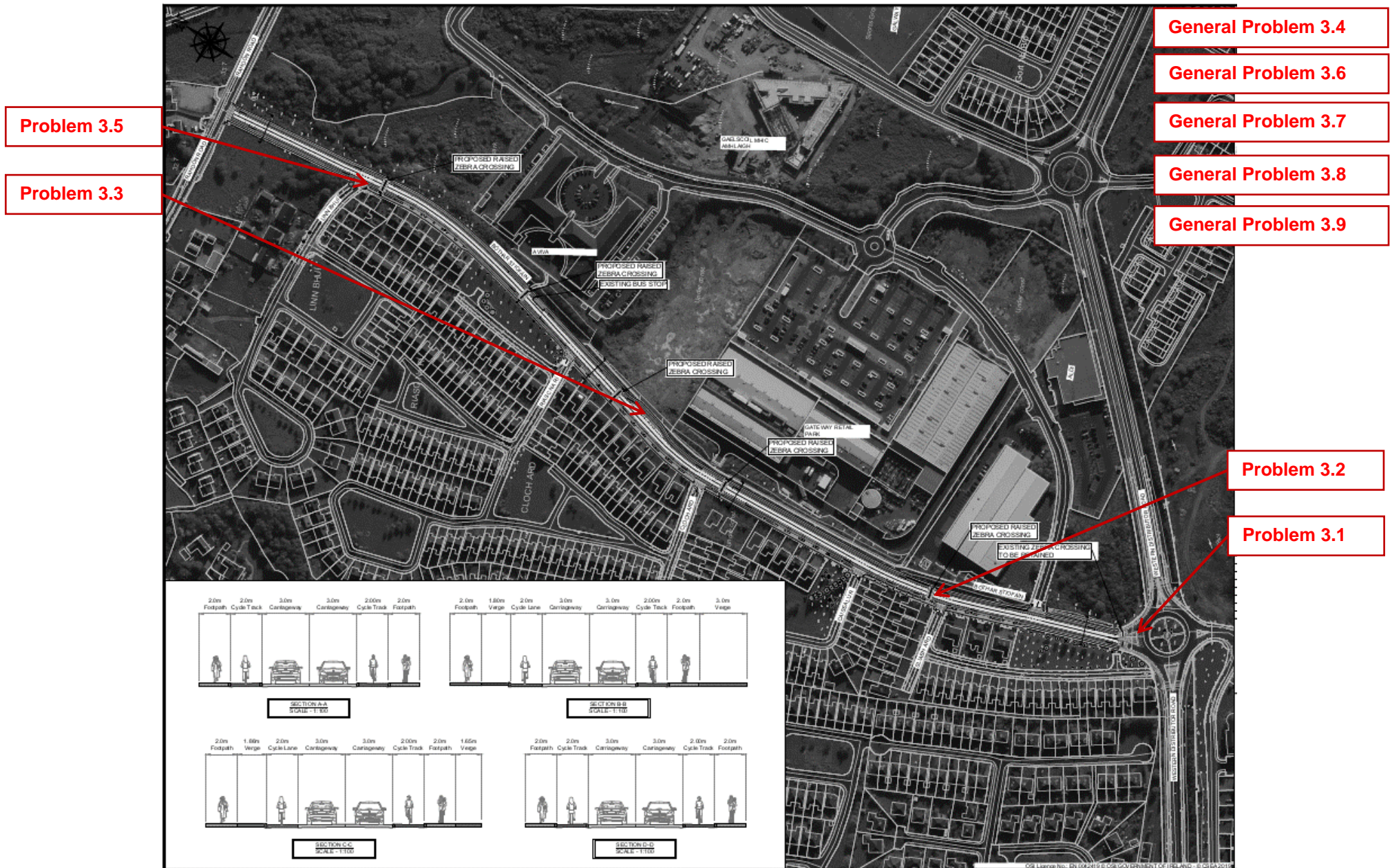
To Be Completed By Designer				To Be Completed By Audit Team Leader
Paragraph No. in Safety Audit Report	Problem Accepted (Yes/No)	Recommended Measure(s) Accepted (Yes/No)	Describe Alternative Measure(s). Give reasons for not accepting recommended measure	Alternative Measures or Reasons Accepted by Auditors (Yes/No)
3.1	Yes	Yes		
3.2	Yes	Yes		
3.3	Yes	Yes		
3.4	Yes	Yes		
3.5	Yes	Yes		
3.6	Yes	Yes		
3.7	Yes	Yes		
3.8	Yes	Yes		
3.9	Yes	Yes		

Signed: Caroline Butler Designer Date 06/04/2023

Signed: Peter J. Monahan Audit Team Leader Date 6th April 2023

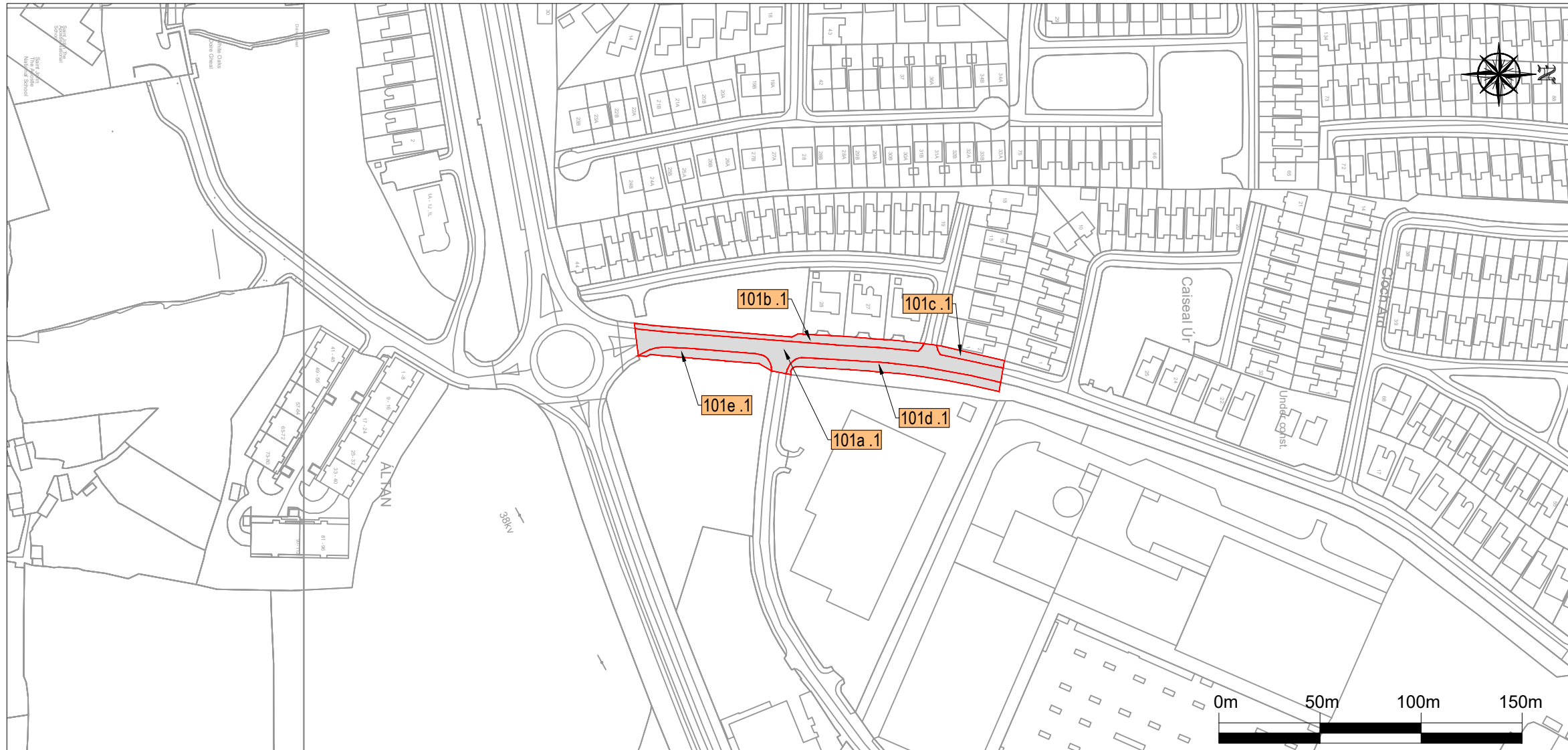
Signed: Michael Kelly Employer Date 17/4/23

Appendix D – Problem Locations



Appendix F

CSEA Drawing No.'s 19_151-CSE-GEN-XX-DR-C-7101 -7110



LEGEND

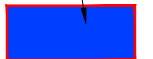
Lands affected under the
SCHEDULE - Part 1

Ref No. xxx .1



Lands affected under the
SCHEDULE - Part 2

Ref No. xxx .2



Number on Map Deposited at the Offices of the Local Authority	Quantity, Description and Situation of Lands			Owners or Reputed Owners	Lessees or Reputed Lessees	Occupiers
	Area	Description	Location			
101a.1	0.1489 ha	Part of Public Road	Townland of Ragoon Electoral Division of Barna Co. Galway	Galway City Council City Hall College Road Galway Co. Galway	None	Galway City Council City Hall College Road Galway Co. Galway
101b.1	0.0457 ha			Coolagh Construction Limited C/O Chris Crehan & Damian Crehan 3 Blakes's Hill Knocknacarra Galway Folio No. GY47593	None	
101c.1	0.0131 ha				None	
101d.1	0.0485 ha	Enterprise, Light Industry and Commercial Zoned Lands		Coolagh Construction Limited C/O Chris Crehan & Damian Crehan 3 Blakes's Hill Knocknacarra Galway Folio No. GY47593	None	
101e.1	0.0281 ha				None	

Total Area of Affected Land by Type	
Description	Area
Part of Public Road	0.2077 ha
Enterprise, Light Industry and Commercial Zoned Lands	0.0766 ha

Total Area of Affected Lands - 0.2843 ha



Comhairle Cathrach na Gaillimhe
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3407 - B

Project **GALWAY CYCLE NETWORK - STAGE 2**
Dwg. Title **Land Owner / Occupier Map - CPO 101**
Property at : **Ragoon, Co. Galway**
Drawn by **KF** Approved by **CB** Scale **1:2500 @ A3** Date **Nov. 2021**
Checked by **MR** Dwg. No. **19_151-CSE-GEN-XX-DR-C-7101**



LEGEND	
Ref No. xxx .1	
Lands affected under the SCHEDULE - Part 1	
Ref No. xxx .2	
Lands affected under the SCHEDULE - Part 2	

Number on Map Deposited at the Offices of the Local Authority	Quantity, Description and Situation of Lands			Owners or Reputed Owners	Lessees or Reputed Lessees	Occupiers	Total Area of Affected Land by Type	
	Area	Description	Location				Description	Area
102a.1	0.1708 ha	Part of Public Road	Townland of Ragoon Electoral Division of Barna Co. Galway	Galway City Council City Hall College Road Galway Co. Galway	Coolagh Construction Limited C/O Chris Crehan & Damian Crehan 3 Blakes's Hill Knocknacarra Galway Folio No. GY36070	Galway City Council City Hall College Road Galway Co. Galway		
102b.1	0.0107 ha							
102c.1	0.0450 ha							
102d.1	0.0136 ha							
102e.1	0.1004 ha							
102f.1	0.0484 ha							
102g.1	0.0405 ha							
102h.1	0.0236 ha							
		Industrial Zoned Lands (Undeveloped)		Coolagh Construction Limited C/O Chris Crehan & Damian Crehan 3 Blakes's Hill Knocknacarra Galway Folio No. GY36070		Owner		
102j.1	0.0238 ha							
102k.2	0.0051 ha							



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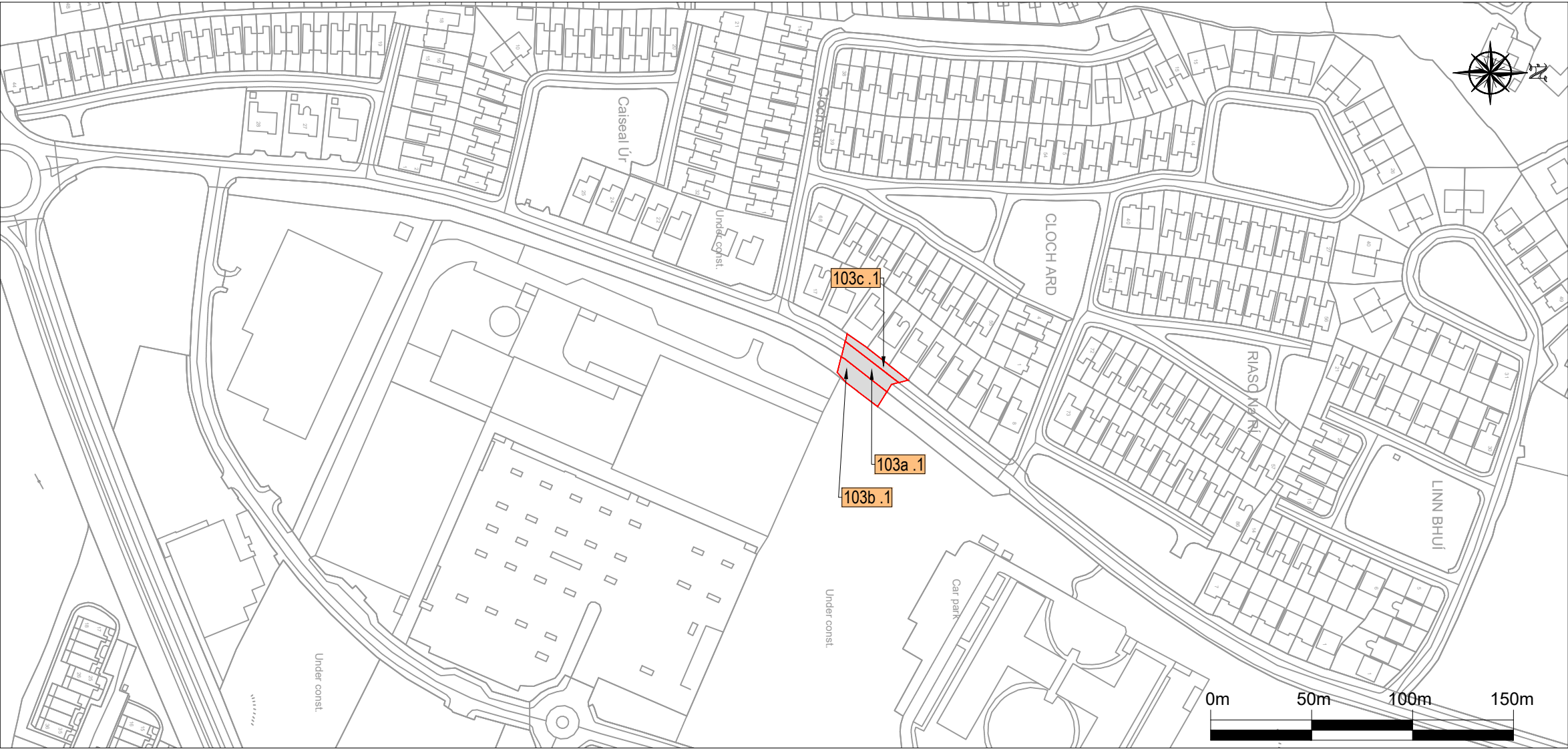
Project **GALWAY CYCLE NETWORK - STAGE 2**

Dwg. Title **Land Owner / Occupier Map - CPO 102**

Property at : **Ragoon, Co. Galway**

Drawn by **KF** Approved by **CB** Scale **1:2500 @ A3** Date **Nov. 2021**

Checked by **MR** Dwg. No. **19_151-CSE-GEN-XX-DR-C-7102**



LEGEND

Ref No. xxx .1

Lands affected under the SCHEDULE - Part I

Ref No. xxx .2

Lands affected under the SCHEDULE - Part 2

Number on Map Deposited at the Offices of the Local Authority	Quantity, Description and Situation of Lands			Owners or Reputed Owners	Lessees or Reputed Lessees	Occupiers
	Area	Description	Location			
103a.1	0.0215 ha	Part of Public Road	Townland of Ragoon Electoral Division of Barna Co. Galway	Galway City Council City Hall College Road Galway Co. Galway Coolagh Construction Limited C/O Chris Crehan & Damian Crehan 3 Blakes's Hill Knocknacarra Galway Folio No. GY24399	None	Galway City Council City Hall College Road Galway Co. Galway
103b.1	0.0232 ha				None	
103c.1	0.0138 ha				None	

Total Area of Affected Land by Type	
Description	Area
Part of Public Road	0.0585 ha
Total Area of Affected Lands - 0.0585 ha	



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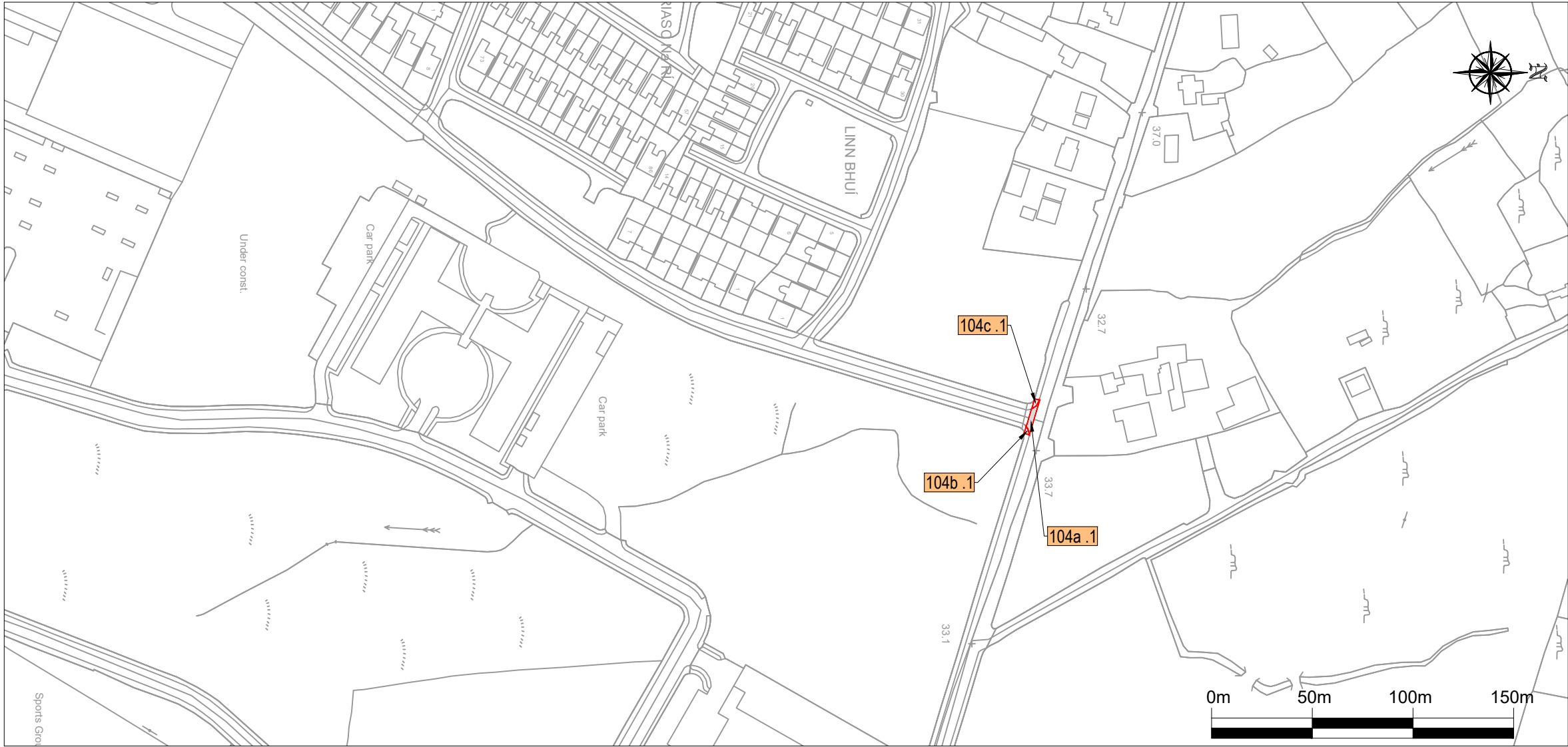
ProjectGALWAY CYCLE NETWORK - STAGE 2

Dwg. TitleLand Owner / Occupier Map - CPO 103

Property at :Ragoon, Co. Galway

Drawn byKFApproved byCBScale1:2500 @ A3DateNov. 2021

Checked byMRDwg. No.19_151-CSE-GEN-XX-DR-C-7103



LEGEND

Ref No. xxx .1

Lands affected under the SCHEDULE - Part I

Ref No. xxx .2

Lands affected under the SCHEDULE - Part 2

Number on Map Deposited at the Offices of the Local Authority	Quantity, Description and Situation of Lands			Owners or Reputed Owners	Lessees or Reputed Lessees	Occupiers
	Area	Description	Location			
104a.1	0.0033 ha	Part of Public Road	Townland of Ragoon Electoral Division of Barna Co. Galway	Galway City Council City Hall College Road Galway Co. Galway Coolagh Construction Limited C/O Chris Crehan & Damian Crehan 3 Blakes's Hill Knocknacarra Galway Folio No. GY59996F	None	Galway City Council City Hall College Road Galway Co. Galway
104b.1	0.0005 ha				None	
104c.1	0.0008 ha				None	

Total Area of Affected Land by Type	
Description	Area
Part of Public Road	0.0046 ha

Total Area of Affected Lands - 0.0046 ha

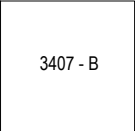


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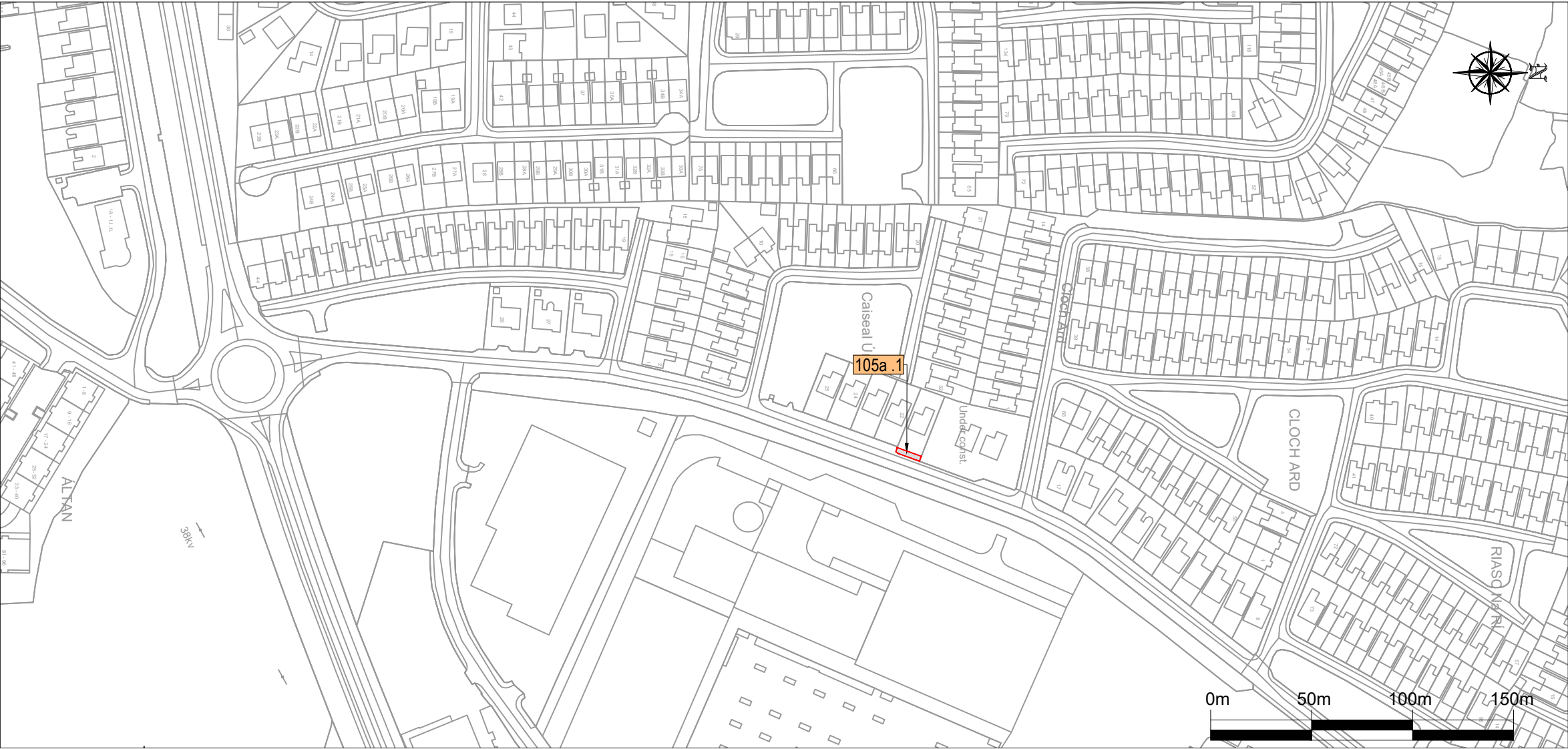
Project GALWAY CYCLE NETWORK - STAGE 2

Dwg. Title Land Owner / Occupier Map - CPO 104

Property at : Ragoon, Co. Galway

Drawn by KF Approved by CB Scale 1:2500 @ A3 Date Nov. 2021

Checked by MR Dwg. No. 19_151-CSE-GEN-XX-DR-C-7104



LEGEND

Ref No. xxx .1

Lands affected under the SCHEDULE - Part I

Ref No. xxx .2

Lands affected under the SCHEDULE - Part 2

Number on Map Deposited at the Offices of the Local Authority	Quantity, Description and Situation of Lands			Owners or Reputed Owners	Lessees or Reputed Lessees	Occupiers	Total Area of Affected Land by Type	
	Area	Description	Location				Description	Area
105a.1	0.0032 ha	Part of Residential Lands	Townland of Rahoon Electoral Division of Barna Co. Galway	Patrick Flanagan & Ursula Flanagan 22 Rosan Glas Rahoon Galway	None	Owner	Part of Residential Lands	0.0032 ha
					Folio No. GY100977F			
Total Area of Affected Lands - 0.0032 ha								



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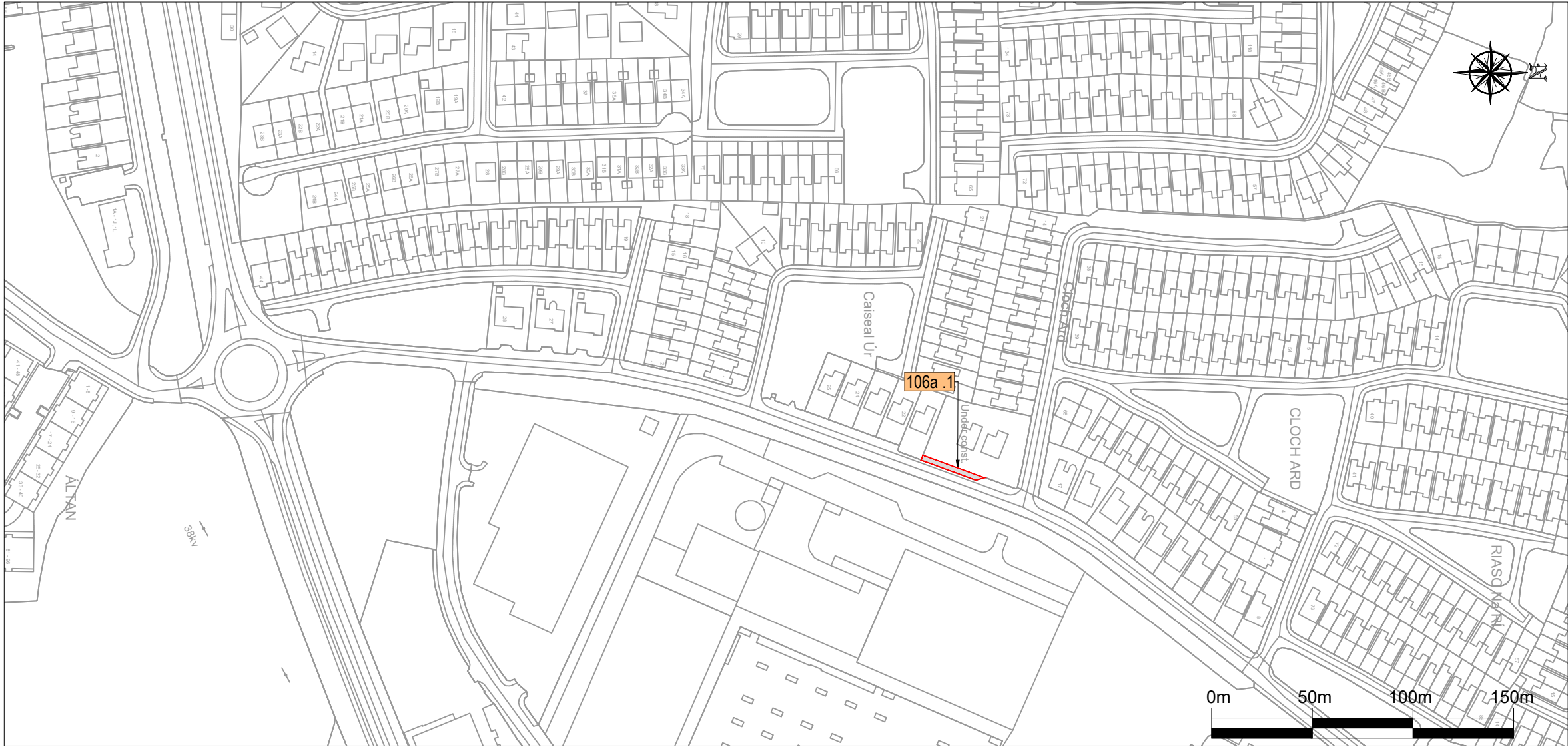
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Project	GALWAY CYCLE NETWORK - STAGE 2			
Dwg. Title	Land Owner / Occupier Map - CPO 105			
Property at :	Rahoon, Co. Galway			
Drawn by	KF	Approved by	CB	Scale 1:2500 @ A3 Date Nov. 2021
Checked by	MR	Dwg. No.	19_151-CSE-GEN-XX-DR-C-7105	



LEGEND

Ref No. xxx .1

Lands affected under the SCHEDULE - Part I

Ref No. xxx .2

Lands affected under the SCHEDULE - Part 2

Number on Map Deposited at the Offices of the Local Authority	Quantity, Description and Situation of Lands			Owners or Reputed Owners	Lessees or Reputed Lessees	Occupiers	Total Area of Affected Land by Type		
	Area	Description	Location				Description	Area	
106a.1	0.0079 ha	Part of Residential Lands	Townland of Rahoon Electoral Division of Barna Co. Galway	NPB Investments Limited (CRO Ref No. 64773) Rosshill Roscam Galway & Dragamara Ltd. C/O Damian Crehan Folio No. GY125667F	None	Owner	Part of Residential Lands	0.0079 ha	
							Total Area of Affected Lands - 0.0079 ha		



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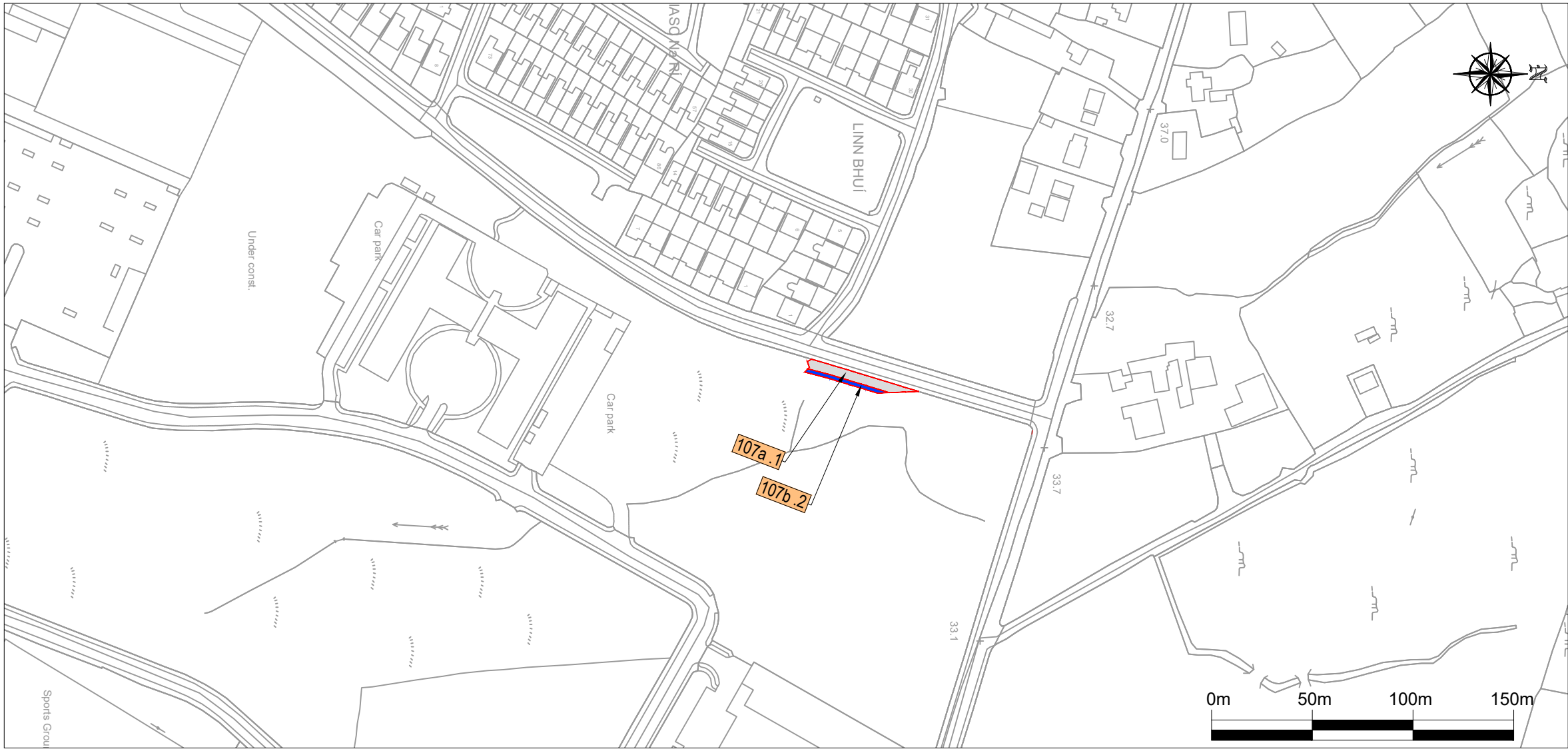
Project **GALWAY CYCLE NETWORK - STAGE 2**

Dwg. Title **Land Owner / Occupier Map - CPO 106**

Property at : **Rahoon, Co. Galway**

Drawn by **KF** Approved by **CB** Scale **1:2500 @ A3** Date **Nov. 2021**

Checked by **MR** Dwg. No. **19_151-CSE-GEN-XX-DR-C-7106**



LEGEND

Ref No. xxx .1

Lands affected under the SCHEDULE - Part I

Ref No. xxx .2

Lands affected under the SCHEDULE - Part 2

Number on Map Deposited at the Offices of the Local Authority	Quantity, Description and Situation of Lands			Owners or Reputed Owners	Lessees or Reputed Lessees	Occupiers	Total Area of Affected Land by Type	
	Area	Description	Location				Description	Area
107a.1	0.0236 ha	Industrial Zoned Lands (Undeveloped)	Townland of Rahoon Electoral Division of Barna Co. Galway	Galway Farm Produce Company Limited William Street Galway Folio No. GY59994F	None	Galway City Council	Industrial Zoned Lands (Undeveloped)	0.0315 ha
107b.2	0.0079 ha				None	Owner	Total Area of Temporary Affected Lands - 0.0079 ha	

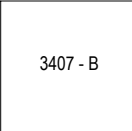


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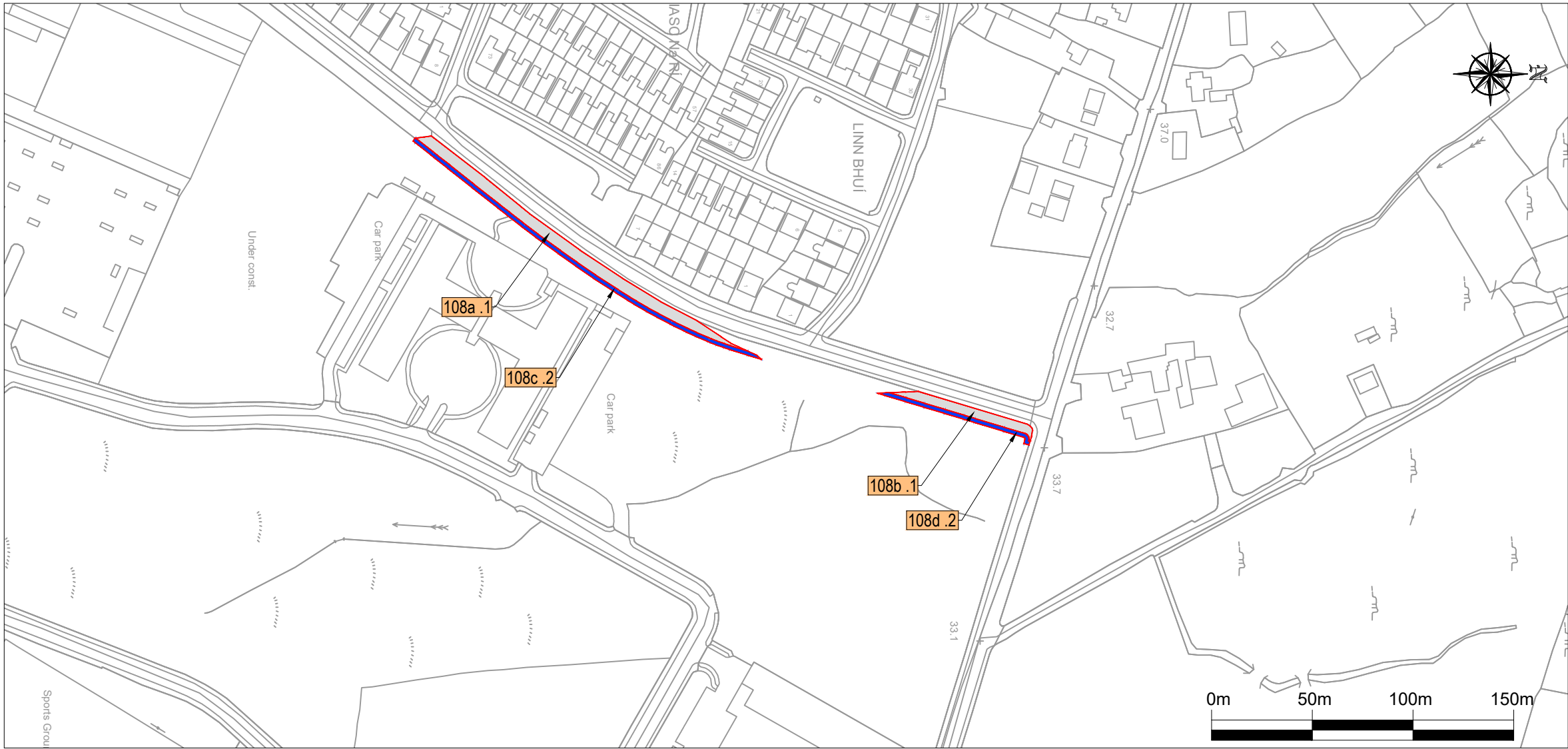
Project **GALWAY CYCLE NETWORK - STAGE 2**

Dwg. Title **Land Owner / Occupier Map - CPO 107**

Property at : **Ragoon, Co. Galway**

Drawn by **KF** Approved by **CB** Scale **1:2500 @ A3** Date **Nov. 2021**

Checked by **MR** Dwg. No. **19_151-CSE-GEN-XX-DR-C-7107**



LEGEND

Ref No. xxx .1

Lands affected under the SCHEDULE - Part I

Ref No. xxx .2

Lands affected under the SCHEDULE - Part 2

Number on Map Deposited at the Offices of the Local Authority	Quantity, Description and Situation of Lands			Owners or Reputed Owners	Lessees or Reputed Lessees	Occupiers	Total Area of Affected Land by Type	
	Area	Description	Location				Description	Area
108a.1	0.1023 ha	Industrial Zoned Lands (Undeveloped)	Townland of Rahooin Electoral Division of Barna Co. Galway	Galway Farm Produce Company Limited Eyre Square Galway Folio No. GY24398	None	Galway City Council	Industrial Zoned Lands (Undeveloped)	0.1902 ha
108b.1	0.0317 ha				None	Galway City Council		
108c.2	0.0405 ha			None	Owner	Total Area of Permanent Affected Lands - 0.1340 ha		
108d.2	0.0157 ha			None	Owner	Total Area of Temporary Affected Lands - 0.0562 ha		



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Project

GALWAY CYCLE NETWORK - STAGE 2

Dwg. Title

Land Owner / Occupier Map - CPO 108

Property at :

Ragoon, Co. Galway

Drawn by

KF

Approved by

CB

Scale

1:2500 @ A3

Date

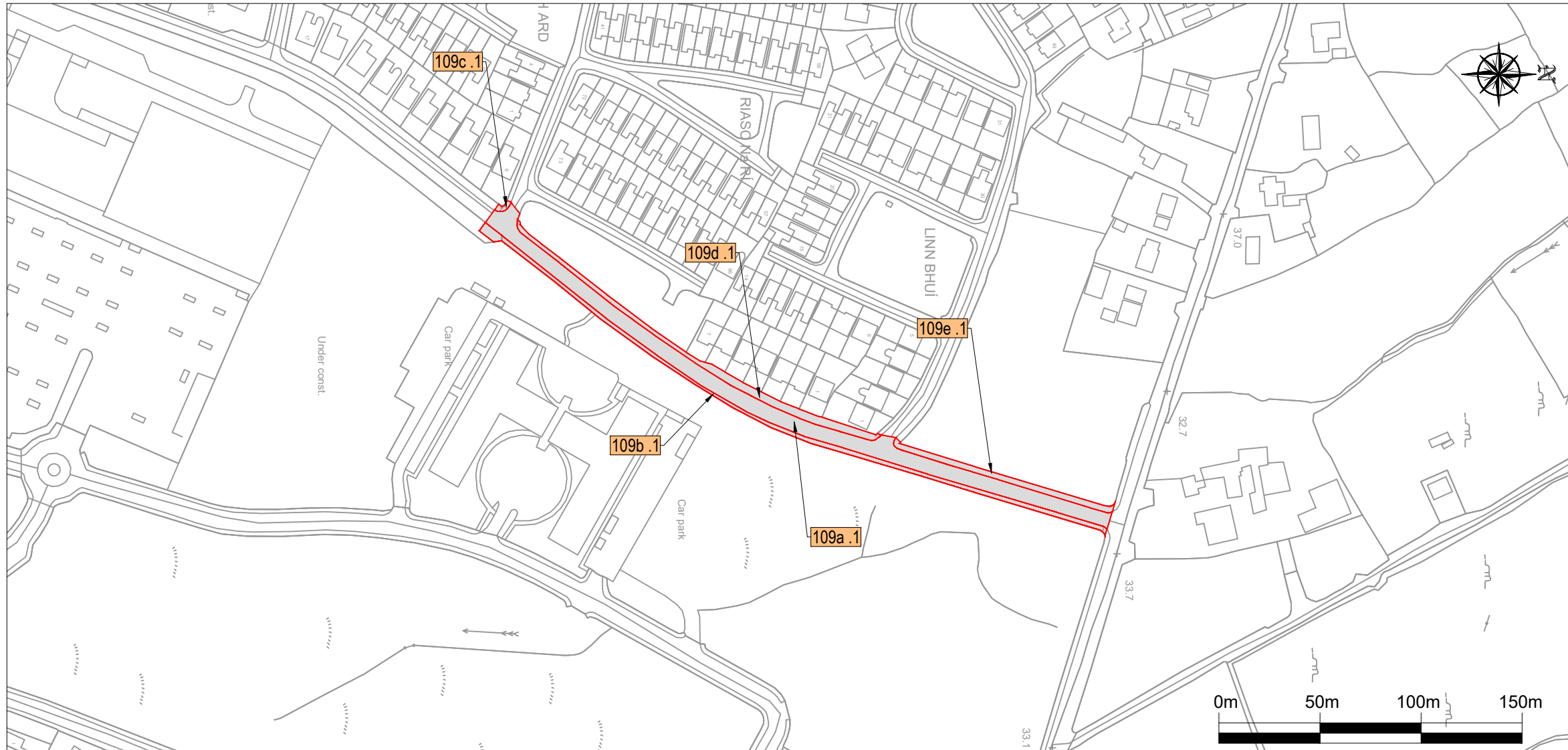
Nov. 2021

Checked by

MR

Dwg. No.

19_151-CSE-GEN-XX-DR-C-7108



LEGEND

Ref No. xxx .1

Lands affected under the SCHEDULE - Part I

Ref No. xxx .2

Lands affected under the SCHEDULE - Part 2

Number on Map Deposited at the Offices of the Local Authority	Quantity, Description and Situation of Lands			Owners or Reputed Owners	Lessees or Reputed Lessees	Occupiers	Total Area of Affected Land by Type	
	Area	Description	Location				Description	Area
109a.1	0.2634 ha	Part of Public Road	Townland of Ragoon Electoral Division of Barna Co. Galway	Galway City Council City Hall College Road Galway Co. Galway	None	Galway City Council City Hall College Road Galway Co. Galway	Part of Public Road	0.4317 ha
109b.1	0.0714 ha				None			
109c.1	0.0020 ha				None			
109d.1	0.0615 ha				None			
109e.1	0.0332 ha			Folio No. GY117297F	None			
							Total Area of Affected Lands - 0.4317 ha	



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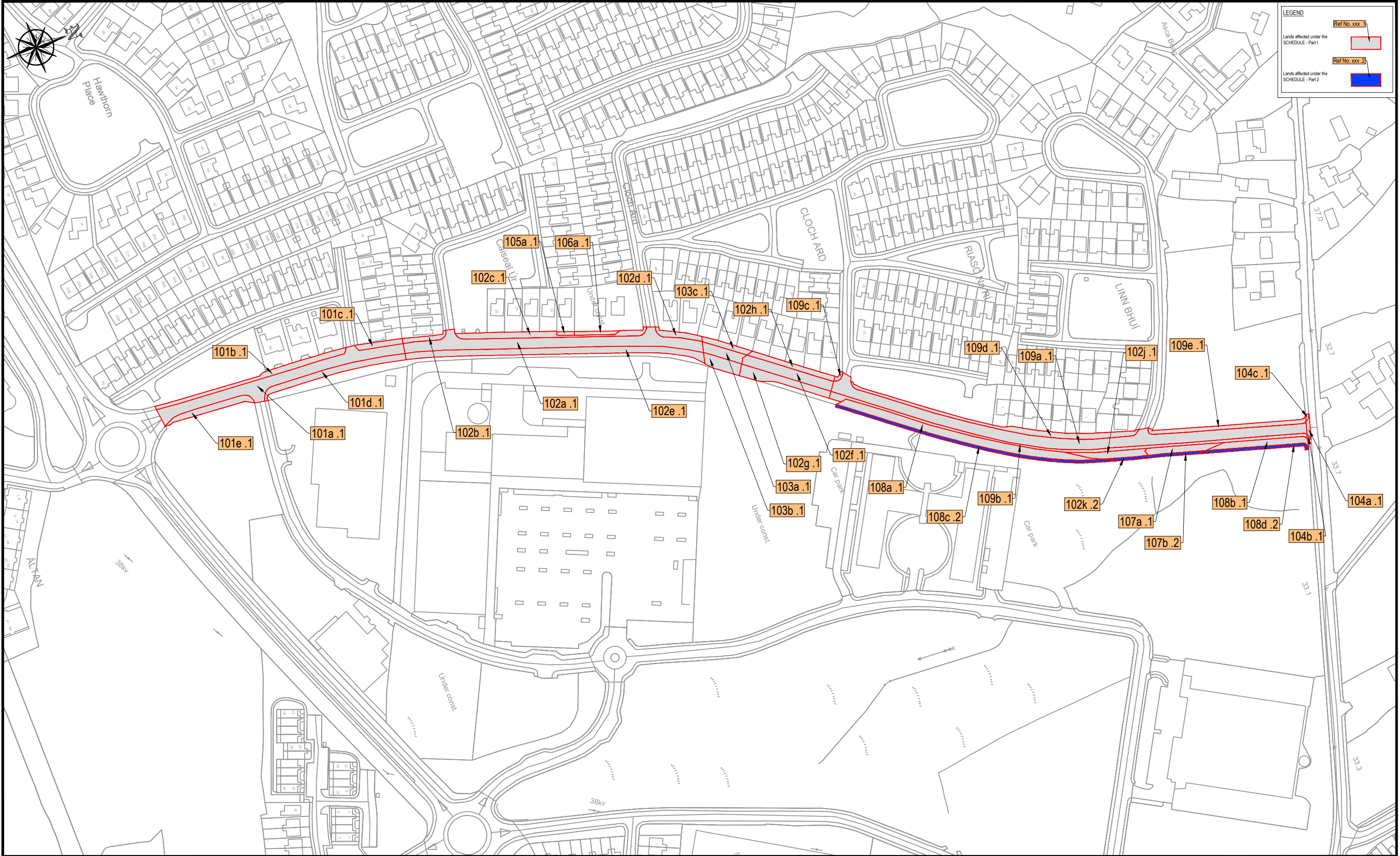
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Project	GALWAY CYCLE NETWORK - STAGE 2			
Dwg. Title	Land Owner / Occupier Map - CPO 109			
Property at :	Ragoon, Co. Galway			
Drawn by	KF	Approved by	CB	Scale 1:2500 @ A3
Checked by	MR	Dwg. No.	19_151-CSE-GEN-XX-DR-C-7109	
Date	Nov. 2021			




LEGEND

Ref No. xxx.1


Lands affected under the SCHEDULE - Part 1

Ref No. xxx.2


Lands affected under the SCHEDULE - Part 2




Project Ireland 2040
Building Ireland's Future



NTA
Údarás Náisiúnta Iompair
National Transport Authority



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Clifton Scannell Emerson
Associates

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Prepared by: KF Scale: 1:1250 @A1

Checked by: CB Approved by: CB

Drawing No: 19_151-CSE-GEN-XX-DR-C-7110

GALWAY CITY COUNCIL
COMPULSORY PURCHASE ORDER, 2021

DEPOSIT MAP

The Official seal of GALWAY CITY COUNCIL was affixed hereto in the presence of

Nominated Employee for the purpose of authenticating the seal.

Dated this Day of

Seal

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