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Preliminary Options Assessment Report Seatown Road to Estuary Road Roundabout Cycle Scheme

**Comhairle Contae
Fhine Gall**
Fingal County
Council



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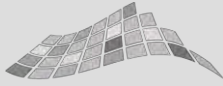
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Management

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1 Introduction

This Options Report has been prepared by Clifton Scannell Emerson Associates (CSEA) on behalf of the Fingal County Council (FCC), documenting the options development and selection process of several possible option layouts for the proposed Seatown Road to Estuary Road Roundabout Cycle Scheme

1.1 Study Area

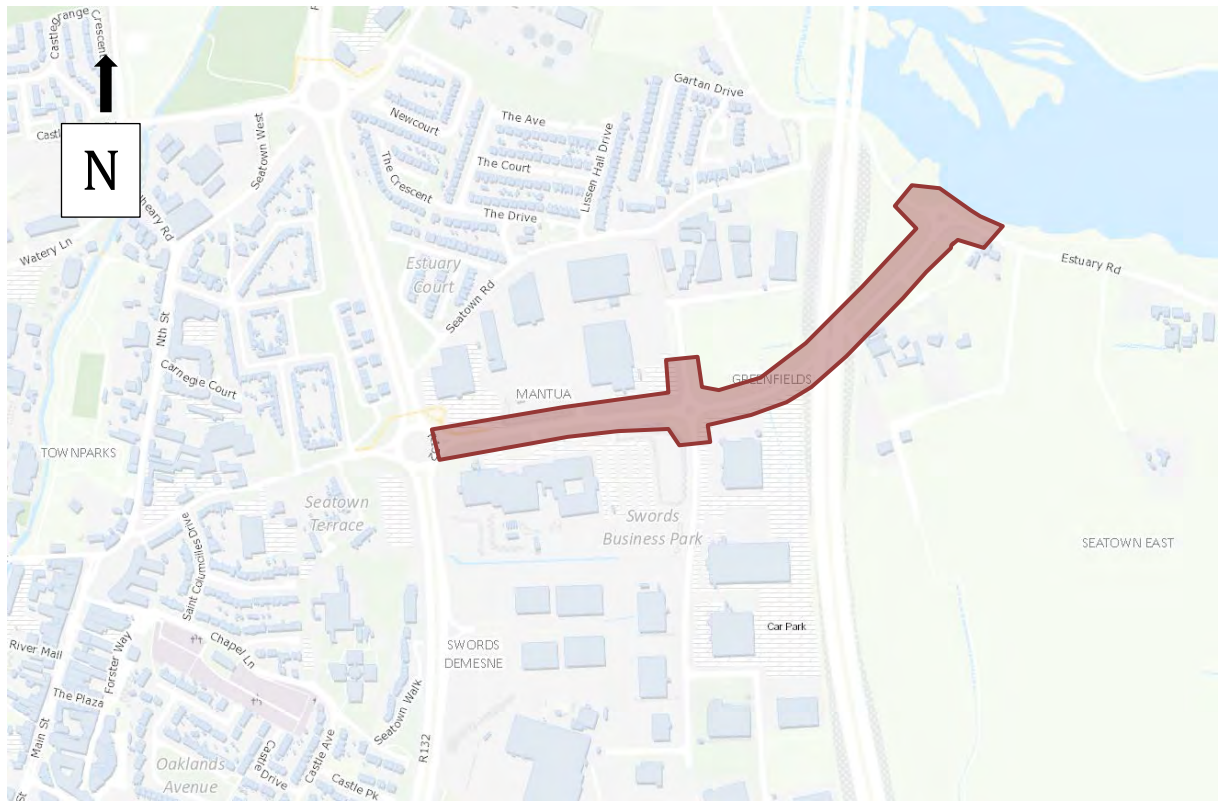


Figure 1.1 - Seatown Road to Estuary Road Roundabout Cycle Scheme shown in Red

1.2 Background & Scheme Objectives

The Seatown Road to Estuary Road scheme is identified in the Greater Dublin Area Cycle Network Plan as a secondary cycle route reference SW4. The purpose of this optioneering process is to examine options for the cycle route. The overall aspiration of the scheme is 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.

In general, the proposed scheme involves upgrading facilities for cyclists and pedestrians including raised cycle tracks, cycle friendly junction designs including safe crossing facilities for pedestrians and cyclists, and improved public lighting, public transport facilities, landscaping, and utilities.

2 Policy Context, Project Need & Objectives

2.1 Greater Dublin Area Cycle Network Plan

In 2013, the NTA published the Greater Dublin Area Cycle Network Plan, consisting of the Urban Network, Inter-Urban Network and Green Route Network for each of the seven Local Authority areas comprising the Greater Dublin Area (GDA).

The Cycle Network Plan identifies and determined in a consistent, clear and logical manner, the following cycle networks within the GDA:

- The Urban Cycle Network at the Primary, Secondary and Feeder level;
- The Inter-Urban Cycle Network, linking the relevant sections of the Urban Network and including the elements of the National Cycle Network within the GDA. The Inter-Urban Network also includes linkages to key transport locations outside of urban areas such as airports and ports; and
- The Green Route Network that are cycle routes developed predominately for tourist, recreational and leisure purposes.

The Cycle Network Plan for each Local Authority area is intended to be developed in accordance with the process set out in the National Cycle Manual, and also in accordance with best industry practice.

The map below shows the Swords-Malahide proposed cycle network plan which identifies the Seatown Road Roundabout to Estuary Road Roundabout as a secondary cycle route reference SW4.

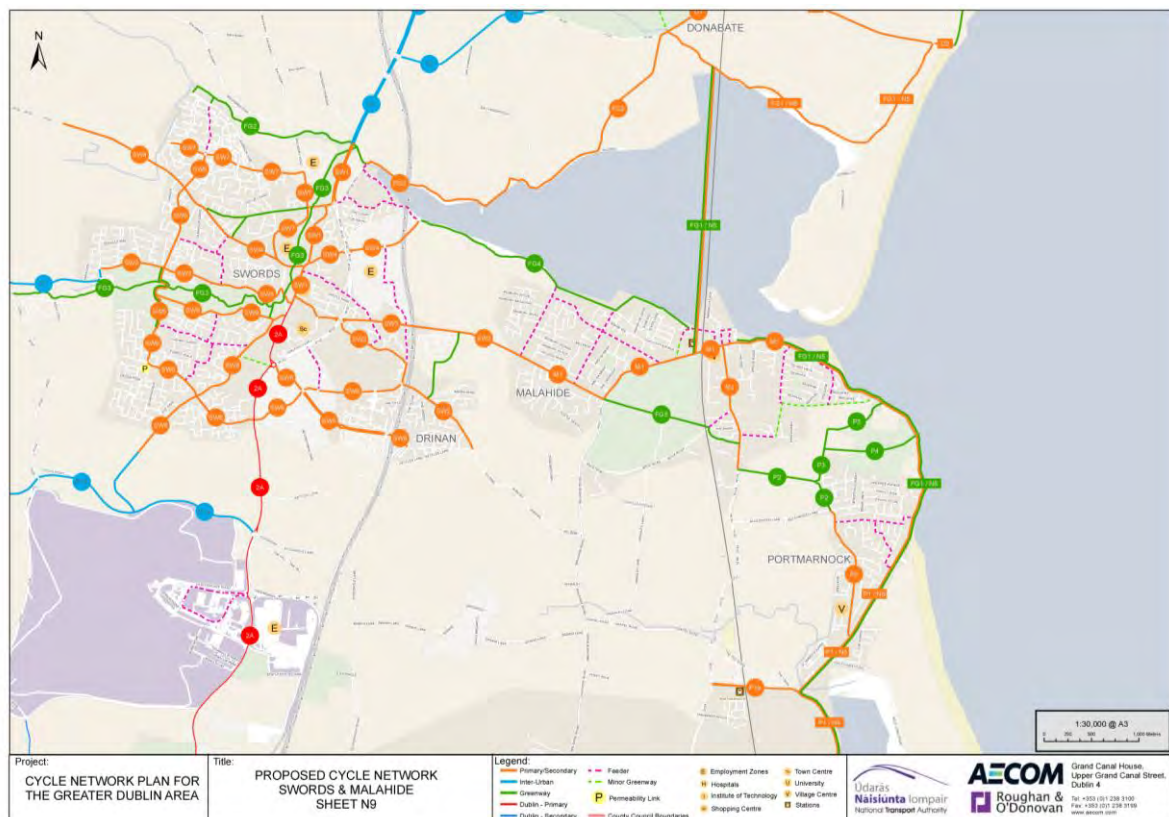


Figure 2.1 - Map N9 from the GDA Cycle Network Plan – Swords and Malahide Network

2.2 Fingal Development Plan 2017-2023

The Fingal Development Plan 2017-2023 includes a number of policies and objectives aimed at promoting walking and cycling in the county. These policies are part of the plan's overall aim to create sustainable communities that prioritise sustainable transport modes encouraging active travel and reducing the county's carbon footprint. Some of the key policies and objectives related to pedestrian and cycling infrastructure are listed below:

- Objective PM01 - Support the development of sustainable low-carbon climate resilient communities.
- Objective MT13 - Promote walking and cycling as efficient, healthy, and environmentally friendly modes of transport by securing the development of a network of direct, comfortable, convenient and safe cycle routes and footpaths, particularly in urban areas.
- Objective MT17 - Improve pedestrian and cycle connectivity to schools and third level colleges and identify and minimise barriers to children walking and cycling to primary and secondary schools.
- Objective GI07 - Ensure green infrastructure protection and provision promotes pedestrian access, cycling, and public transport in preference to the car, as appropriate.
- Objective GI08 - Integrate the provision of green infrastructure with infrastructure provision and replacement, including walking and cycling routes, as appropriate, while protecting biodiversity and other landscape resources
- Objective GI28 - Provide attractive and safe routes linking key green space sites, parks and open spaces and other foci such as cultural sites and heritage assets as an integral part of new green infrastructure provision, where appropriate and feasible.

2.3 Fingal Climate Change Action Plan 2019 - 2024

Fingal County Council's Climate Change Action Plan sets out how the Council will improve energy efficiency and reduce greenhouse gas emissions in its own buildings and operations, while making Fingal a more climate resilient region, with engaged and informed citizens. This will be achieved by a range of ongoing and planned actions in five key areas (Energy & Building, Transport, Flood Resilience, Nature-Based Solutions and Resource Management) which will be continuously monitored, evaluated, and updated to 2030 and beyond.

This plan concentrates on the two approaches required to tackle climate change. The first, mitigation, consists of actions that will reduce current and future GHG emissions. The second approach, adaptation, consists of actions that will reduce the impacts that are already happening now from our changing climate and those that are projected to happen in the future. Examples of mitigation measures include reductions in energy use, switching to renewable energy sources and enhancement of carbon sinks. Part of this measures implies active travel such as walking and cycling.

Transport contributes to a significant amount of GHG emissions within the Fingal area. Walking, cycling and public transport currently accounts for just 38.6% of all journeys, and the target is to increase this figure to 50%. Therefore, through its own development plan strategy and policies, FCC promotes the integration of land use and transportation, and works with a range of stakeholders to improve transportation in Fingal and encourage modal shift away from private cars to more sustainable alternatives, in order to achieve this target.

Encouraging people to walk or cycle will help FCC to respond to climate change. Moreover, promotion of active travel will improve the health of citizens. Of the transportation modes that FCC can influence and shape, cycling has been the predominant focus.

To encourage the uptake of cycling and walking, the Council is actively advancing a number of specific cycle facilities across the county.

2.4 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.

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.

2.5 National Cycle Policy Framework 2009-2020

This plan sets out a substantial suite of interventions to improve the ease and safety of cycling in order to achieve greater mode share going forward. It states that making provision for cyclists in the urban environment does not merely consist of providing dedicated cycling facilities but also involves wider traffic interventions that benefit all vulnerable road users. It acknowledges that investment in a cycling network has an impact on an entire geographical area not just the liner corridor where the cycle facility is installed. It has an impact on road safety within that area as well as a positive impact on the health of the population using the whole network which amounts to a societal effect.

2.6 Project Ireland 2040

This document is the Government's high-level strategic plan to improve transport, tourism and sport infrastructure by 2040. This document supports an ambitious growth target to enable a town like Celbridge to expand in the period up to 2040.

Project Ireland 2040 seeks to achieve ten strategic outcomes, building around the overarching themes of wellbeing, equality and opportunity. Two of these ten shared priorities are Sustainable Mobility and Enhanced Amenity and Heritage. Sustainable Mobility focuses on the provision of safe alternative active travel options to alleviate congestion and help to meet climate action objectives, where Enhanced Amenity and Heritage aims to investment in high-quality infrastructure to create living space with defined character and attractiveness.

2.7 Smarter Travel – A Sustainable Transport Future

This policy document is A New Transport Policy for Ireland 2009-2020 and includes five key aims, such as:

- Improve quality of life and accessibility to transport for all, including people with reduced mobility and those who may experience isolation due to lack of transport,

- Improve economic competitiveness through maximising the efficiency of the transport system and alleviating congestion and infrastructural bottlenecks,
- Minimise the negative impacts of transport on the local and global environment through reducing localised air pollutants and greenhouse gas emissions,
- Reduce overall travel demand and commuting distances travelled by the private car,
- Improve security of energy supply by reducing dependence on imported fossil fuels.

2.8 NATURA 2000 - Special Areas of Conservation & Special Protection Areas

NATURA 2000 is a network of protected areas established under the EU Birds Directive and the EU Habitats Directive. The network covers over 18% of the EU's land area and over 6% of its territorial waters, making it the largest coordinated network of protected areas in the world.

Special Areas of Conservation (SAC) are areas designated in Ireland under the EU Habitats Directive to protect rare and threatened species and habitats. SACs are selected based on their scientific interest and conservation value, and they include a wide variety of habitats such as woodlands, wetlands, grasslands, and marine areas.

Special Protection Areas (SPAs) in Ireland are designated under the EU Birds Directive to protect habitats that are important for the survival of rare and vulnerable bird species. SPAs are selected based on the presence of bird species that are listed in the Directive and depend on specific habitats for their survival. The designation of an area as an SPA places a legal obligation on the Irish government to protect and manage the area in a sustainable way, ensuring that its unique habitats and bird species are conserved for future generations.

The designation of an area as an SPA or SAC places a legal obligation on the Irish government to protect and manage the area in a sustainable way, ensuring that its unique habitats and species are conserved for future generations. Management plans are developed for each SPA and SAC, which set out the conservation objectives for the area and the measures that will be taken to achieve them.

Specifically relevant to the proposed scheme is The Estuary Road Roundabout is adjacent to the Malahide Estuary SAC (site code 000205) and the Malahide Estuary SPA (site code 004025).

3 Design Guidance

3.1 Design Manual for Urban Roads and Streets

DMURS 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; and
- Greater communication and co-operation between design professional through the promotion of a plan-led, multidisciplinary approach design.
- The figure shown displays the proposed user hierarchy that promotes and prioritises sustainable forms of transportation.



3.2 National Cycle Manual

This document is a national guidance document to guide planners and engineers in their work to improve cycling provision in urban areas.

Cycling as a vulnerable mode of transport should be supported by a good design with principles of sustainable safety applied.

There are five principles, which should be followed in every design:

- Functionality – cycle facility design is fit for purpose and follows movement related functions and place related functions.
- Homogeneity – reduction in the relative speed, mass and directional differences of different road users sharing the same space.
- Legibility – self-evident, self-explanatory and self-enforcing road environment.
- Forgivingness
- Self-awareness

3.3 CROW Manual - Cycle Friendly Roundabouts

The CROW manual is a comprehensive guide to designing and managing infrastructure for cyclists and pedestrians in the Netherlands. CROW is an independent knowledge institute in the Netherlands that focuses on sustainable mobility and transport Infrastructure. The CROW manual provides detailed

guidelines for the design of bicycle and pedestrian infrastructure, including intersections, roundabouts, and multi-modal networks.

The manual is widely regarded as a gold standard for cycling infrastructure design and is used not only in the Netherlands but also in many other countries as a reference guide. It is updated regularly to reflect the latest research and best practices in the field. The CROW manual is a valuable resource for planners, engineers, and policymakers seeking to promote active transportation and create safe and comfortable environments for cyclists and pedestrians.

Cycle-friendly roundabouts are designed to prioritize the safety and comfort of cyclists while maintaining efficient traffic flow. The use of raised or separated circulatory cycle tracks is a key feature of these roundabouts, providing a dedicated space for cyclists that is physically separated from the main traffic lanes.

The roundabouts have clear lane markings, which provide guidance for drivers and cyclists and help to reduce conflicts between the two modes of transportation. The roundabouts are designed with a tight geometry to calm traffic, which makes it easier for drivers to see cyclists and anticipate their movements. This, in turn, reduces the risk of collisions and increases the comfort and confidence of cyclists using the roundabout.

Pedestrian facilities at cycle-friendly roundabouts are an important aspect of their design. The footpaths are usually located on the outer edge of the roundabout and are separated from the cycle track by a raised curb or a different coloured surface. Crossings for pedestrians are also provided, with zebra crossings or raised crossings typically used. These crossings are designed to be clearly visible and to give pedestrians priority over cyclists and drivers.

Compared to other roundabout designs, cycle-friendly roundabouts are particularly effective at promoting active transportation and reducing the risk of cyclist-motor vehicle collisions. They provide a safe and comfortable environment for cyclists, while maintaining efficient traffic flow and minimising delays for all road users. As such, they are becoming increasingly popular in many countries around the world as a preferred design for intersections with high volumes of cyclist traffic.

3.4 Preliminary Design Guidance for BusConnects Core Bus Corridors

The Preliminary Design Guidance Booklet for BusConnects Core Bus Corridors is a guide for designers and planners involved in the development of high-quality, efficient, and reliable bus corridors in Dublin. Here are some bullet points outlining the objectives of the guide:

- Ensure the highest possible level of passenger comfort and safety for all users.
- Promote active and sustainable transportation by making walking and cycling along the bus corridor safer and more attractive.
- Increase the speed and reliability of bus journeys to make public transport a more viable option for commuters.
- Create a visually attractive and legible streetscape that enhances the quality of the urban environment.
- Ensure that the bus corridor is accessible to all, regardless of age, ability, or mode of transport.
- Facilitate the integration of public transport services with other modes of transport, such as cycling, walking, and car-sharing.
- Reduce the environmental impact of transportation by reducing the number of cars on the road and encouraging more sustainable travel options.
- Improve connectivity within and between neighbourhoods by providing direct and frequent bus services along key corridors.

The guidance provides detailed recommendations on a range of design elements, including street design, bus stops, bus shelters, pedestrian facilities, cycling infrastructure, landscaping, lighting, and signage. By following these guidelines, designers and planners can ensure that BusConnects Core Bus Corridors are attractive, safe, and efficient for all users, and support sustainable transport in Dublin.

The BusConnects Design Manual includes guidance on the design of cycling infrastructure along bus corridors. The guidance aims to promote active transportation by creating safe, comfortable, and attractive cycling facilities that are integrated with the wider transport network. The manual recommends that cycling infrastructure should be designed to prioritise the safety and convenience of cyclists, while also ensuring that their needs are balanced with the needs of other road users. Key elements of the guidance include recommendations for the design of cycle lanes, cycle tracks, and shared bus-bike lanes, as well as guidance on the design of cycling facilities at bus stops and at junctions.

The guidance emphasises the importance of providing continuous and direct cycling routes, minimising conflicts with other modes of transport, and ensuring high levels of visibility and safety for cyclists. The image below is an extract from the BusConnects Design Manual which details a raised table priority junction treatment which is being considered at some of the accesses for this scheme.

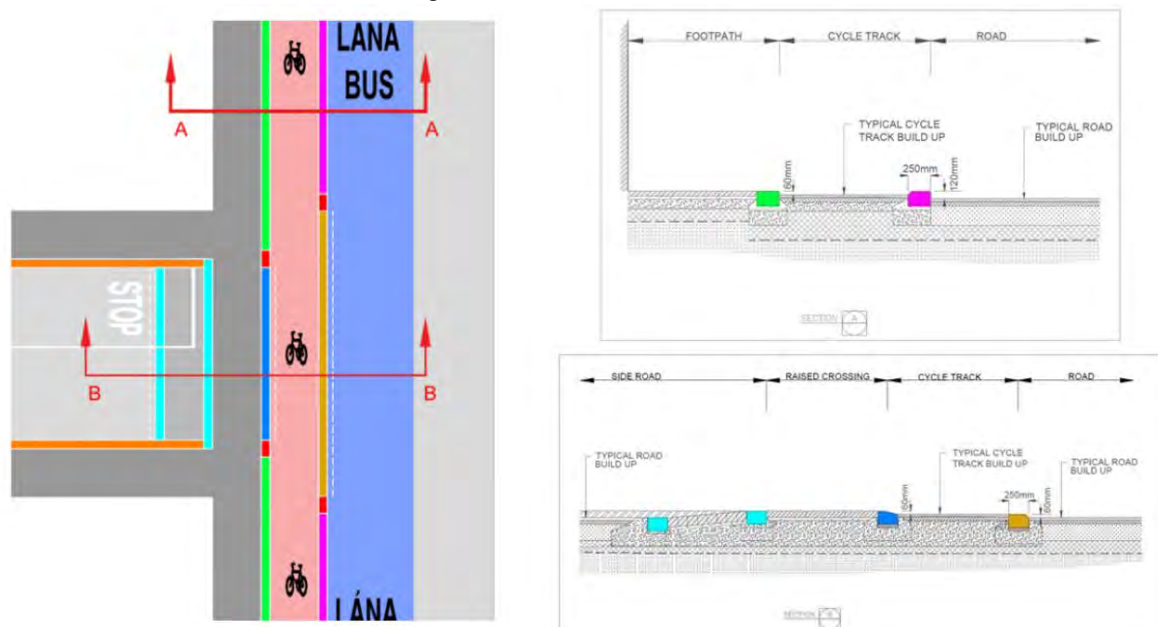


Figure 3.1 – Extracted Figure 30: Raised Table Priority Junction Treatment

4 Existing Conditions and Constraints

4.1 Data Collection

To facilitate the optioneering design process, it was necessary to carry out different forms of data collection. Following discussion with Fingal County Council the main types of data required was agreed upon including topographical surveys and traffic count data for the Seatown Road to Estuary Road Roundabout Cycle Scheme.

4.1.1 Topographical Survey

A topographical survey for Seatown Road was completed in September 2022 by Land and Aerial Surveys. The survey was used to inform the preliminary designs presented in this report.

4.1.2 Traffic Data

Nationwide Data Collection (NDC) conducted traffic data collection on the 18th of October 2022. The data collection included junction turning counts, access counts and pedestrian crossing counts. The count locations are shown on the figure below.

The purpose of gathering the traffic data was to measure the volume of traffic along the scheme, to measure the percentage of HGV's on the Seatown Road and accesses. This data will then be used to determine appropriate junction treatments for each of the business accesses.

The percentage of HGV traffic along the route is also a key factor in determining the cycle route quality of service as per the National Cycle Manual.

Using the traffic data collected at Seatown Road Roundabout Junction, the AADT for this road is estimated to be 9200 AADT and the percentage of HGV's on the Seatown Road is 5.2%.

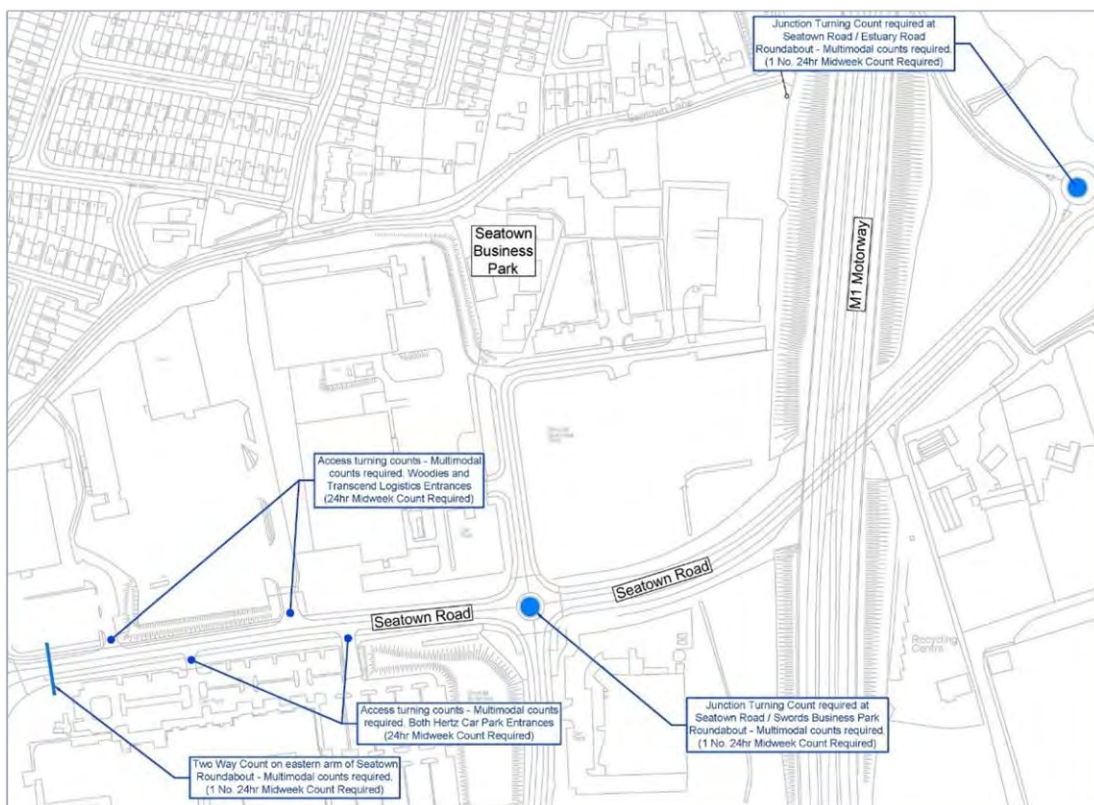


Figure 4.1 - Traffic Data Collection Locations

4.2 Scheme Constraints

4.2.1 Existing Vehicular Entrances

There are a number of existing vehicular entrances to various businesses along the scheme. These include Woodies, Hertz, Transcend Logistics etc, and facilitate a variety of vehicle types. Traffic count data was obtained for these locations to determine traffic volumes and vehicle types to facilitate appropriate access designs. The two-way traffic counts and HGV percentages for each of these accesses are shown below:

Access	Two Way Traffic Count – AADT	HGV Percentage
Woodies	1436 AADT	1.4%
Transcend Logistics	392 AADT	17.4%
Hertz – Seatown Road West	88 AADT	0%
Hertz – Seatown Road East	304 AADT	0%

From the traffic data obtained, the low volumes and low HGV percentages at Woodies and both Hertz entrances indicate that a raised table priority junction treatment as per the bus connects guidance (See Figure 3.1) would be appropriate for these accesses. Due to the large percentage of HGV traffic at the Transcend Logistics entrance, an on-road cycle lane across the mouth of the junction may be more appropriate to highlight the conflict zone ensuring the cyclist is seen and to facilitate larger vehicle turning movements.

4.2.2 M1 Bridge Underpass

The proposed cycle scheme passes through the existing M1 underpass adjacent to the estuary recycling centre as shown in the figure below.

The existing bridge columns and abutments restrict the cross-section width available space for cycle facility and footpath provision.

As this section is critical to the scheme, CSEA engaged with the TII existing infrastructure structures department to examine different preliminary options for cycle facilities through the underpass. Through these discussions it was clear that several options were available as the paved revetment under the bridge is a surface finish and part removal would not have any significant structural impact on the bridge.



Figure 4.2 - Existing M1 Underpass

4.2.3 Malahide Estuary SAC and SPA

The Estuary Road Roundabout is adjacent to the Malahide Estuary SAC (site code 000205) and the Malahide Estuary SPA (site code 004025). See Figure 4.3 below:

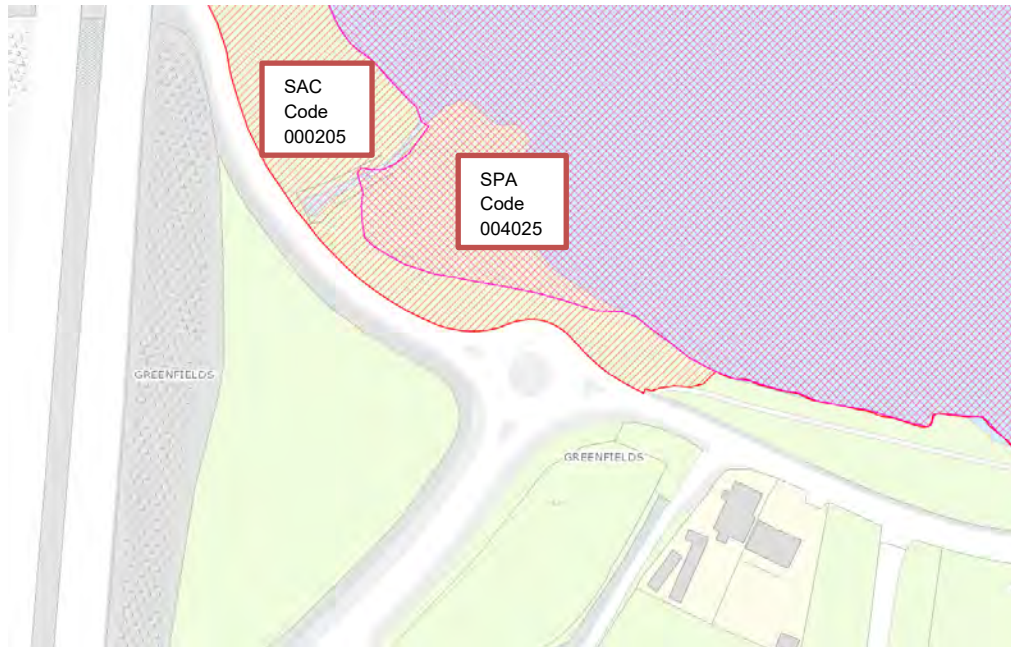


Figure 4.3 – Malahide Estuary SAC and SPA boundaries

The site is a Special Area of Conservation (SAC) selected for the following habitats and/or species listed on Annex I / II of the E.U. Habitats Directive:

- Tidal Mudflats and Sandflats [1140]
- Salicornia Mud [1310]
- Spartina Swards [1320]
- Atlantic Salt Meadows [1330]
- Mediterranean Salt Meadows [1410]
- Marram Dunes (White Dunes) [2120]
- Fixed Dunes (Grey Dunes) [2130]

The E.U. Birds Directive pays particular attention to wetlands and, as these form part of this SPA, the site and its associated waterbirds are of special conservation interest for Wetland & Waterbirds. Of the birds associated with this SPA, two of the species which occur regularly (Golden Plover and Bar-tailed Godwit) are listed on Annex I of the E.U. Birds Directive.

- Great Crested Grebe (*Podiceps cristatus*) [A005]
- Light-bellied Brent Goose (*Branta bernicla hrota*) [A046]
- Shelduck (*Tadorna tadorna*) [A048]
- Pintail (*Anas acuta*) [A054]
- Goldeneye (*Bucephala clangula*) [A067]
- Red-breasted Merganser (*Mergus serrator*) [A069]
- Oystercatcher (*Haematopus ostralegus*) [A130]
- Golden Plover (*Pluvialis apricaria*) [A140]
- Grey Plover (*Pluvialis squatarola*) [A141]
- Knot (*Calidris canutus*) [A143]
- Dunlin (*Calidris alpina*) [A149]
- Black-tailed Godwit (*Limosa limosa*) [A156]
- Bar-tailed Godwit (*Limosa lapponica*) [A157]
- Redshank (*Tringa totanus*) [A162]
- Wetland and Waterbirds [A999]

Due to the importance of preserving this site, the proposed design of the upgrades to the Estuary Roundabout will minimise the affect on this area. As part of the Appropriate Assessment screening process, it is proposed to conduct bird surveys in the area adjacent to the Estuary Roundabout.

5 Options Development

This section details the proposed design options developed for this scheme, outlining the main characteristics of each option and how they compare with each other. A multicriteria analysis of the scheme was undertaken to compare the options and identify a preferred option for the Seatown Road to Estuary Road Roundabout Cycle Scheme.

Drawings for each of the proposed design options are provided in Appendix A of this report.

5.1.1 Do Nothing Option

In this option, there would be no change to the existing layout or traffic operations. This scenario is used as a baseline comparison to the other options proposed.

5.1.2 Do Minimum Option

Refer to Drawings 22_110E-CSE-GEN-XX-DR-C-1016-1018.

In this option, the existing kerblines would be maintained in situ and a 1.75m wide advisory cycle lanes are provided on both sides of the road along the length of the scheme. Advisory Cycle Lanes are marked by a broken white line which allows motorised traffic to enter or cross the lane. They are used where a Mandatory Cycle Lane leaves insufficient residual road space for traffic.

The remaining road lane widths would be approximately 2.75m on both sides of the road. According to DMURS, this lane width is the absolute minimum for arterial routes and would likely create potential issues for larger vehicles passing each other on this route given the significant proportion of HGV's using the road.

This option would tie into existing kerblines on the western end of the scheme and is designed to easily tie into the future cycle facilities proposed at the Seatown Road Roundabout.

For the two other roundabouts in the scheme, the existing kerbs and islands would be maintained where possible and an on road circulatory cycle track provided.

Based on the Quality of Service (QOS) criteria set out in the National Cycle manual, this option would achieve a Level C quality of service.

The table below presents the advantages and disadvantages of the proposed option:

Advantages	Disadvantages
Low cost to integrate proposed facilities into existing infrastructure	Cycle facilities are not fully segregated, and advisory lanes do not provide adequate protection for vulnerable road users from road traffic.
Low traffic and environmental impact due to less construction activity.	Circulatory cycle tracks on roundabouts provide much less protection for cyclists and traffic and have a higher risk of side swipe collisions.
	Advisory lanes offer a much less attractive route for cyclists and have less potential for encouraging modal shift to cycling.
	On road cycle lanes lead to increased interaction and disruption to public transport particularly at bus stops

5.1.3 Option A

Refer to Drawings 22_110E-CSE-GEN-XX-DR-C-1001-1003 – Option A.

In this option, the existing traffic lane width and kerb alignment are maintained as much as possible throughout the scheme. This option includes high quality fully grade separated cycle facilities on both sides of the road with segregated facilities at both the centre and eastern roundabouts.

This option would tie into existing kerblines on the western end of the scheme and is designed to easily tie into the future cycle facilities proposed at the Seatown Road Roundabout.

Cycle facilities would be terminated at this point on the western end of the scheme until the proposed upgrades are completed at the Seatown Road Roundabout and cycle facilities tied in.

In this option, a shared cyclist/pedestrian area would be provided at the bus stops to minimise encroachment into the landscaping at the rear of the existing footpath.

This option would retain the existing traffic lane width through the M1 underpass which would require additional width to be gained behind the bridge columns on both sides of the road to facilitate adequate cycle paths and footpaths width.

The Junction arrangement at both the centre roundabout (IDA Access Roundabout) provides crossing facilities for pedestrians at zebra crossings on raised tables and cycle crossing is facilitated on these crossings also. The approaches to the crossings transition from segregated facilities to shared space in the immediate environs of the crossings.

The eastern roundabout (Estuary Road Roundabout) is proposed to provide fully segregated circulatory cycle track with raised table crossings on each arm which will be aligned adjacent to the proposed Zebra Crossings for Pedestrians.

Based on the Quality of Service (QOS) criteria set out in the National Cycle Manual, this option would achieve a Level B quality of service.

The table below presents the advantages and disadvantages of the proposed option:

Advantages	Disadvantages
Lower cost to construct than previous option as it would retain existing infrastructure wherever possible while providing segregated cycle facilities throughout the majority of the scheme.	Requires a shared cyclist/pedestrian area at the bus stops due to less available width.
Good quality cycle infrastructure provides an attractive environment and encourages modal shift towards sustainable transport.	Requires retaining walls at rear of M1 underpass bridge columns to facilitate adequate cycle track and footpath widths.
Provides cycle facility continuity with the proposed adjacent R132 cycle scheme due to similar design principles.	Wider traffic lane widths encourage higher speeds which has a negative impact on road safety
The proposed roundabout arrangement maintains segregation between cyclists and both pedestrians and motorised vehicles, providing safety benefits to all vulnerable road users.	Less space available for grass verges and landscaping.
	Road users may need to familiarise themselves with the proposed roundabout layouts.

5.1.4 Option A1

Refer to Drawings 22_110E-CSE-GEN-XX-DR-C-1004-1006 – Option A1.

This option is similar to Option A with the existing traffic lane widths and kerb alignments maintained as much throughout the scheme where possible. Similarly, the junction treatments are the same as the Option A with fully segregated facilities provided at the central and eastern roundabout, and with the cycle facilities tying into existing kerblines on the western end of the scheme approaching the R132.

Cycle facilities would be terminated at this point on the western end of the scheme until the proposed upgrades are completed at the Seatown Road Roundabout and cycle facilities tied in.

In this option the narrowing of the traffic lanes at the M1 underpass allows for the provision of 2m wide cycle tracks and 1.8m footpaths either side of the road through the underpass without the need for extensive work and retaining wall construction.

Based on the Quality of Service (QOS) criteria set out in the National Cycle manual, this option would achieve a Level B quality of service.

The table below presents the advantages and disadvantages of the proposed option:

Advantages	Disadvantages
Lower cost to construct than comparative Option A as it would tie in with and retain existing infrastructure wherever possible while providing segregated cycle facilities throughout the majority of the scheme.	Requires a shared cyclist/pedestrian area at the bus stops as a result of the retention of the road width.
Good quality cycle infrastructure and provides an attractive environment encouraging modal shift towards sustainable transport.	Road users may need to familiarise themselves with the proposed roundabout layouts.
Provides cycle facility continuity with the proposed adjacent R132 cycle scheme due to similar design principles.	Wider traffic lane widths encourage higher speeds which has a negative impact on road safety particularly for vulnerable road users.
Narrowed traffic lanes at M1 underpass allows for construction of footpaths and cycle lanes without need for extensive work to underpass.	Less space available for grass verges and landscaping.
The proposed roundabout arrangement maintains segregation between cyclists and both pedestrians and motorised vehicles, providing safety benefits to all vulnerable road users.	

5.1.5 Option B

Refer to Drawings 22_110E-CSE-GEN-XX-DR-C-1007-1009 – Option B.

In this option, the traffic lanes would be narrowed along the entire length of the scheme to 3.25m. In accordance with DMURS this lane width is an acceptable lane width for new arterial routes and would allow adequate space for larger vehicles passing each other on this route given the significant proportion of HGV's using the road. This narrowing would require the construction of new kerblines along the entire length of the scheme. The narrowing of traffic lanes provides additional width for cycle facilities, footpaths, and wide grass verges. These grass verges would segregate cyclists and vehicular traffic for much of the scheme.

This option includes high quality grade separated cycle facilities on both sides of the road. As with option A and A1 the crossing facilities for pedestrians and cyclists are separated at the eastern roundabout with shared facilities at the centre roundabout. Fully segregated cycle facilities provided at bus stops would minimise cyclist interaction between pedestrians and public transport.

The narrowing of the traffic lanes at the M1 underpass allows for the provision of 2m wide cycle tracks and 1.8m footpaths either side of the road through the underpass without the need for extensive work and retaining wall construction.

This option would tie into existing kerblines on the western end of the scheme and is designed to easily tie into the future cycle facilities proposed at the Seatown Road Roundabout.

Based on the Quality of Service (QOS) criteria set out in the National Cycle manual, this option would achieve a Level B quality of service.

The table below presents the advantages and disadvantages of the proposed option:

Advantages	Disadvantages
Cycle facilities with a high quality of service with fully segregated cycle facilities provide a safe environment for vulnerable road users.	High cost to construct scheme due to less integration into existing Infrastructure.
Narrowed traffic lanes lead to reduced vehicle speeds and increased road safety for all users	Greater traffic disruption and environmental impact during construction phase.
Excellent quality cycle infrastructure provides a more attractive environment and encourages modal shift towards sustainable transport.	Road users may need to familiarise themselves with the proposed roundabout layouts.
Fully segregated facilities at bus stops provide a safer environment for cyclists and lead to less interaction with public transport users.	
Narrowed traffic lanes at M1 underpass allows for construction of footpaths and cycle lanes without need for extensive work to underpass.	
The proposed roundabout arrangement maintains segregation between cyclists and both pedestrians and motorised vehicles, providing safety benefits to all vulnerable road users.	
Provides continuity with the proposed R132 cycle scheme due to similar design principles.	
More green space than other options due to additional width due to narrowed traffic lanes.	

5.1.6 Option B1

Refer to Drawings 22_110E-CSE-GEN-XX-DR-C-1010-1012 – Option B1.

This option presents a combination of both Option A and Option B, with the main advantages of both options merged into this scheme.

In this option, at the section of road between the Seatown Road Roundabout and the Swords business park roundabout, traffic lanes would be narrowed to provide additional width for cycle facilities, footpaths and wide grass verges, as well as fully cycle segregated facilities at the bus stops which to minimise cyclist interaction between pedestrians and public transport.

This option would provide excellent quality fully grade separated cycle facilities on both sides of the road with segregated facilities at both the Swords business park and eastern roundabouts.

Narrowing of the traffic lanes at the M1 underpass allows for the provision of 2m wide cycle tracks and 1.8m footpaths either side of the road through the underpass without the need for extensive work and retaining wall construction.

This option would tie into existing kerblines on the western end of the scheme and is designed to easily tie into the future cycle facilities proposed at the Seatown Road Roundabout.

The Junction arrangement at both the centre roundabout and the eastern roundabout is proposed to provide fully segregated circulatory cycle track with raised table crossings on each arm which will be aligned adjacent to the proposed Zebra Crossings for Pedestrians. The crossing facilities for pedestrians and cyclists are separated at all locations.

Based on the Quality of Service (QOS) criteria set out in the National Cycle manual, this option would achieve a Level B quality of service.

The table below presents the advantages and disadvantages of the proposed option:

Advantages	Disadvantages
Provision of cycle facilities with a high quality of service with fully segregated cycle facilities provide a safe environment for vulnerable road users.	Comparatively High cost to construct scheme
Provides a similar quality level of cycle infrastructure to Option A but at a lower cost due to retaining existing kerb alignments in some locations.	Significant traffic disruptions and environmental impact during construction phase.
Excellent quality cycle infrastructure provides a more attractive environment and encourages modal shift towards sustainable transport.	Road users may need to familiarise themselves with the proposed roundabout layouts.
Fully segregated facilities at bus stops provide a safer environment for cyclists and lead to less interaction with public transport users.	
Narrowed traffic lanes at M1 underpass allows for construction of footpaths and cycle lanes without need for extensive work to underpass.	

Provides cycle facility continuity with the proposed adjacent cycle scheme due to similar design principles.	
Narrowed traffic lanes lead to reduced vehicle speeds and increased road safety for all users	

5.1.7 Option C

Refer to Drawings 22_110E-CSE-GEN-XX-DR-C-1013-1015 – Option C

In this option it is proposed to construct signalised junctions in place of both the Seatown Road Roundabout and the Swords business park roundabout. Segregated crossing facilities for cyclists and pedestrians would be provided on each arm of the junction and crossing would occur under signal control.

In common with Option B, the traffic lanes would be narrowed along the entire length of the scheme to 3.25m. This would require the construction of new kerblines.. The narrowing of traffic lanes provides additional width for cycle facilities, footpaths and wide grass verges. This option includes high quality fully grade separated cycle facilities on both sides of the road with segregated facilities at both the centre and eastern roundabouts.

In this option, fully cycle segregated facilities would be provided at the bus stops which would minimise cyclist interaction between pedestrians and public transport.

The narrowing of the traffic lanes at the M1 underpass allows for the provision of 2m wide cycle tracks and 1.8m footpaths either side of the road through the underpass without the need for extensive work and retaining wall construction.

This option would also tie into the cycle facilities into the proposed signalised junction upgrades at the Seatown Road Roundabout.

Based on the Quality of Service (QOS) criteria set out in the National Cycle manual, this option would achieve a Level C quality of service.

The table below presents the advantages and disadvantages of the proposed option:

Advantages	Disadvantages
Provision of cycle facilities with a high quality of service with fully segregated cycle facilities provide a safe environment for vulnerable road users.	A higher comparative cost to construct scheme due to less integration into existing infrastructure.
High quality cycle infrastructure provides a more attractive environment and encourages modal shift towards sustainable transport.	Significant traffic disruptions and environmental impact during construction phase.
Fully segregated facilities at bus stops provide a safer environment for cyclists and lead to less interaction with public transport users.	Traffic signalised junctions expected to be more expensive than roundabout options as they make less use of existing infrastructure
Narrowed traffic lanes encourages reduced vehicle speeds and increased road safety for all users	Traffic signals create delay for cyclists and pedestrians.
Narrowed traffic lanes at M1 underpass allows for construction of footpaths and cycle lanes without need for extensive work to underpass.	
Provides cycle facility continuity with the proposed adjacent R132 cycle scheme due to similar design principles.	

Provides more green space than other options due to additional available width due to narrowed traffic lanes.	
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6 Options Assessment

6.1 Assessment Methodology

The Common Appraisal Framework (CAF) (Department of Transport, Tourism and Sport, 2016) was used as the basis for the MCA as required for all similar infrastructure projects. The required criteria are as follows:

6.1.1 Economy

Under this criterion the ability of the proposals to support continued economic success of the area was assessed. The assessment considered a range of factors that influence economic outputs including the social and environmental impacts. There is evidence that schemes that improve the urban realm, increase pedestrianisation and reduce vehicular dominance of a space result in greater socio-economic benefits. Therefore, options that had greater levels of pedestrianisation and urban realm improvements and reduce vehicular dominance are more likely to score positively in this criterion.

6.1.2 Safety

Transport policy has a specific focus on reduction of collisions, particularly for vulnerable road users including pedestrians and cyclists. The assessment of Safety is therefore based on the probability of incident reduction and avoidance, for pedestrians and cyclists. Vehicular transport is a major contributor to accidents and in general, road collisions may be reduced along a route due to modal shift.

6.1.3 Physical Activity

This criterion identifies the potential impact of each proposed option in facilitating a healthier lifestyle. This assessment considers how each option provides measures which support walking and cycling. Under this criterion, options that provide the greatest opportunity to optimise active mobility (walking and cycling) within and across the Scheme were considered to present comparative advantage over other options. Options were assessed based on the standard and extent of walking and cycle infrastructure and the extent to which movement by these modes was impeded through conflicts or barriers caused by vehicular movements.

6.1.4 Environment

The main environmental factor differentiating the options relates to the level and content of vehicular traffic passing through the scheme. Vehicular transport is a major contributor to harmful environmental emissions, including greenhouse gases (CO₂). Transport emission in the form of Nitrogen Oxides and Particulate Matter adversely impacts on public health. Noise and vibration associated with vehicular movement can also affect quality of life and ability for persons to enjoy a space. These factors can result in direct impacts and indirect through changes to cultural, heritage assets and landscape quality.

6.1.5 Accessibility and Social Inclusion

Government policy in relation to Social Inclusion is set out in the National Action Plan for Social Inclusion (NAPSI). This policy looks to reduce and eliminate poverty and social inclusion particularly as it affects vulnerable groups, including people with disabilities. The assessment compared the options based on how the designs accommodated vulnerable groups, particularly people with disabilities, as well as providing an inclusive space that all communities can enjoy.

6.1.6 Integration

This criterion identifies the extent to which an option supports or encourages planned future development or provides economic opportunities. It considers whether an option supports integration between sustainable transport and land-use planning and policies. The options were assessed against a range of the most relevant policies (Project Ireland 2040, Climate Action Plan, Smarter Travel). The options with the best strategic fit to these policies scored more positively in this criterion.

6.2 MCA Sub Criteria Interpretation

As the CAF criteria are too general for the purpose of assessing the subtle differences between the design proposals, the following sub criteria relevant to the scheme objectives have been developed for the purposes of this MCA.

Assessment Criterion	Assessment Sub Criteria	Scheme Objectives relevant to CAF Criteria
Economy	<i>Cost of works</i>	Estimated Cost of Works
	<i>Delay Impact on Transport Network</i>	Impact on the general traffic post construction
Safety	Safety of Vulnerable Road Users	Safety of Cyclists
		Safety of Pedestrians
		Safety of Bus Users
		Safety of Visually Impaired
Physical Activity	Active Travel	Quality of Cycle Facility to encourage modal shift.
		Quality of Pedestrian Facilities to encourage activity.
Environment	Landscape and Visual Quality	Provision of Grass verges/green space
	Air Quality	Potential to encourage modal shift from vehicular traffic/potential to cause vehicle queuing.
Accessibility and Social Inclusion	Vulnerable Groups	Provision for the Mobility Impaired
		Provision for the Visually impaired
Integration	Transport Network Integration	Alignment with Transport Policy

6.3 MCA Ranking Scale

Each design option was appraised under the criteria outlined above and compared based on a five-point scale, ranging from having significant advantages to having significant disadvantages over other design options. Table 6-1 shows the colour coding of the five-point scale, with advantageous options graded “dark green” and disadvantageous routes graded “red”.

Table 6-1 Options Colour Coded Ranking Scale

Colour	Description
+2	Significant advantages over other options.
+1	Some advantages over other options.
0	Neutral compared to other options.
-1	Some disadvantages to other options.
-2	Significant disadvantages to other options.

6.4 Multi Criteria Analysis

The results of the MCA are presented in Table 4.1. In general, the options that limit vehicular activity within and through the scheme performed better than those options with higher vehicular movement across all six of the CAF criteria.

Economy Criterion Assessment

The primary consideration regarding the economy criteria related to the cost of construction. This is the only criterion where the do nothing and do minimum options score higher than the proposed options.

The primary influencing factors in the assessment of this criterion related to the extent of the works for which the existing kerblines were retained/ whether the junctions were signalised or not and whether the scheme required works at the M1 Underpass. Thus, the proposed options which required wholesale replacement of kerblines were considered the most expensive.

Option B is considered to be the most expensive option by virtue of the full length of the scheme being realigned away from the existing kerblines. The other options have varying sections which are proposed to be realigned away from the existing kerb but with significant sections retained.

Safety Criterion Assessment

The assessment of safety was undertaken in the context of consideration for the vulnerable road users and those for whom the scheme is being developed. Specifically, this includes cyclists, pedestrians and the mobility and visually impaired noting that people with different abilities have different requirements and that different junction arrangements in particular provide differing benefits.

It is considered that horizontal separation from the edge of the carriageway i.e. a verge between the vehicular carriageway and the cyclists was considered to provide the greatest level of safety with vertical separation on a full height kerb considered to provide a lower level of benefit. Signalised junctions have been considered to provide the greatest level of safety due to the facilities which can be specifically provided to the visually impaired.

Option B1 and C are determined to have the highest level of pedestrian safety by virtue of the level of separation afforded between cyclists and pedestrians at all junctions.

Physical Activity Criterion Assessment

This criterion identifies the potential impact of each proposed option in facilitating a healthier lifestyle, by developing facilities for cyclists and pedestrians which will provide comfortable and coherent routes. Where priority is afforded to traffic e.g., at traffic signals this is a negative impact. Similarly, where no facilities, or poor quality facilities have been provided, as in the case of the Do Nothing or Do Minimum scenario this is considered to be a negative.

Options B and B1 are considered to provide the greatest benefit to cyclists and to afford the best priority with least constraints for cyclists. Option B1 is considered to provide the best route for pedestrians given the priority afforded by Zebra Crossings and the full separation from other modes including cyclists.

Environment Criterion Assessment

The impact of the proposed works on the Landscape and Visual quality is considered in the context of available space generated by or retained in the development of the scheme to facilitate planting and Green space. Thus, the options which reallocate road space in general create additional grass verge space. Option B1 specifically reallocates a significant area of road spaces to green space in the immediate vicinity of the Special Protection Area at the eastern roundabout immediately adjacent to the Broadmeadow estuary.

A significant environmental factor differentiating the options is considered to be harmful vehicular emissions, including greenhouse gases (CO₂), Nitrogen Oxides and Particulate Matter. It is acknowledged that emissions are significantly higher when vehicles are idling such as at traffic signals and thus this is taken into account in the assessment.

The Do Nothing and Do Minimum Scenarios are considered to have a negative impact as they are not expected to deliver any level of modal shift from the vehicular transport. Option C is deemed to potentially have a negative impact because of queuing traffic at proposed traffic signals. All other options are considered to have a moderate positive impact as a likely contributory factor in encouraging modal shift to active travel modes.

Accessibility and Social Inclusion Criterion Assessment

This criterion compared the options based on how the designs accommodated vulnerable groups, particularly the elderly and people with disabilities. Consideration was specifically given to the arrangements at junctions with raised tables considered to provide better facilities for the mobility impaired. The provision of signals was identified as having the potential to better facilitate the visually impaired due to the audio and touch prompts which may be provided at signal-controlled junctions. Segregation of cyclists and pedestrians is considered to provide benefits over shared space for all vulnerable groups.

Thus Option B1 is considered to provide the greatest benefits in terms of social inclusion as it incorporates raised tables at all junction crossings, full segregation of pedestrians and cyclists at all junctions and at Bus Stops.

Integration Criterion Assessment

This criterion considers the alignment of the proposed scheme with Transport Policy and specifically the provision of a cycle scheme on the route designated under the Greater Dublin Area Cycle Network Plan (GDACNP) and the provision of transport facilities based on the Hierarchy of Road Users as set down in the National Sustainable Mobility Policy and the Design Manual for Urban Roads and Streets.

In all cases other than the do-nothing scenario the options under consideration provide a route which is aligned with Route SW4 as set down in the GDACNP. Thus, it was determined that the most beneficial options in this regard were Options B and B1 due to the priority afforded to pedestrians and cyclists at junctions and the provision made for Public Transport Users at Bus Stops.

6.5 Multi Criteria Analysis Scoring Matrix

Assesment Criteria	Assessment Sub Criteria	Criteria Description	Do Nothing	Do Minimum	Option A	Option A1	Option B	Option B1	Option C
Economy	<i>Cost of works</i>	Estimated Cost of Works	2	1	-1	-1	-2	-1	-1
	<i>Delay Impact on Transport Network</i>	Impact on the general traffic post construction	0	0	0	0	0	0	-1
		Criteria Sub Total (Average)	1	0.5	-0.5	-0.5	-1	-0.5	-1
Safety	<i>Safety of Vulnerable Road Users</i>	Safety of Cyclists	-2	-2	1	1	2	2	2
		Safety of Pedestrians	-2	-1	1	1	1	2	2
		Safety of Bus Users	0	0	-1	-1	1	1	1
		Safety of Visually Impaired	0	0	1	1	1	1	2
	Criteria Sub Total (Average)	-1	-0.75	0.5	0.5	1.25	1.5	1.75	
Physical Activity	<i>Active Travel</i>	Quality of Cycle Facility to encourage modal shift	-2	-2	1	1	2	2	1
		Quality of Pedestrian Facilities to encourage activity	-1	-1	1	1	1	2	1
		Criteria Sub Total (Average)	-1.5	-1.5	1	1	1.5	2	1
Environment	<i>Landscape and Visual Quality</i>	Provision of Grass verges/green space	0	0	0	0	1	1	0
	<i>Air Quality</i>	Potential to encourage modal shift from vehicular traffic/potential to cause vehicle queuing.	-1	-1	1	1	1	1	-1
	Criteria Sub Total (Average)	-0.5	-0.5	0.5	0.5	1	1	-0.5	
Accessability and Social Inclusion	<i>Vulnerable Groups</i>	Provision for the Mobility Impaired	-2	-1	2	2	2	2	1
		Provision for the Visually impaired	-2	-2	1	1	1	2	2
		Criteria Sub Total (Average)	-2	-1.5	1.5	1.5	1.5	2	1.5
Integration	<i>Transport Network Integration</i>	Alignment with Transport Policy	0	0	1	1	2	2	1
		Criteria Sub Total (Average)	0	0	0.5	0.5	1	1	0.5
		Total Appraisal Score	-4	-3.75	3.5	3.5	5.25	7	3.25
		Rank	6	5	4	4	2	1	3

Table 4.1 – Multi Criteria Analysis Scoring Matrix

7 Proposed Scheme (Emerging Preferred Option)

The Multi Criteria Analysis assessment determines that the option which provides greatest benefits is Option B1. This option incorporates key elements of

- Continuous fully segregated Cycleway on both sides of the road.
- Junctions with Zebra Crossings for Pedestrian Movements and segregated cycleway crossings and circulatory cycle track.
- Island Bus Stops.

The proposed scheme shall incorporate crossings of private vehicular entrances at grade affording priority to pedestrians and cyclists on the main road. The radii at these entrances shall be amended to encourage lower traffic speeds for vehicles turning into the entrances.

The narrowed traffic lanes shall also encourage lower traffic speeds and the raised tables at the proposed roundabouts shall further contribute to attenuating speeds on the route thus contributing to a generally safer road environment.

Appropriate lighting shall be provided along the route in particular at potential conflict zones and to enhance the perceived comfort and safety levels along the route.

The proposed scheme has been the subject of a screening assessment for both the Impact on Designated Sites (Appropriate Assessment) and an assessment of the potential environmental impact of the scheme.

The AA and EIAR screening reports accompanying this report indicate that a full AA or EIAR are not required for this development.

7.1 Next Steps

It is proposed to complete the scheme as a Section 38 procedure. This is reference to in the Road Traffic Act, 1994 which sets out the procedure for carrying out traffic calming and minor road improvements to provide traffic calming measures including footpath and cycle track improvements as the road authority considers desirable in respect of public roads in their charge.

Once the non-statutory consultation for the scheme is completed, the project will move on to the detailed design phase where the scheme designs will be refined.

Once the scheme detailed design stage has been completed, the Tender documents for the project would be compiled and an open procedure tendering process would be undertaken.

Following the tendering process, the received tenders would be assessed and the project awarded to a successful tenderer.

It is anticipated that the scheme would commence construction in mid-summer 2023.

Project Number: 22_110E

Project: Seatown Road to Estuary Road Roundabout Cycle Scheme

Title: Preliminary Options Assessment Report

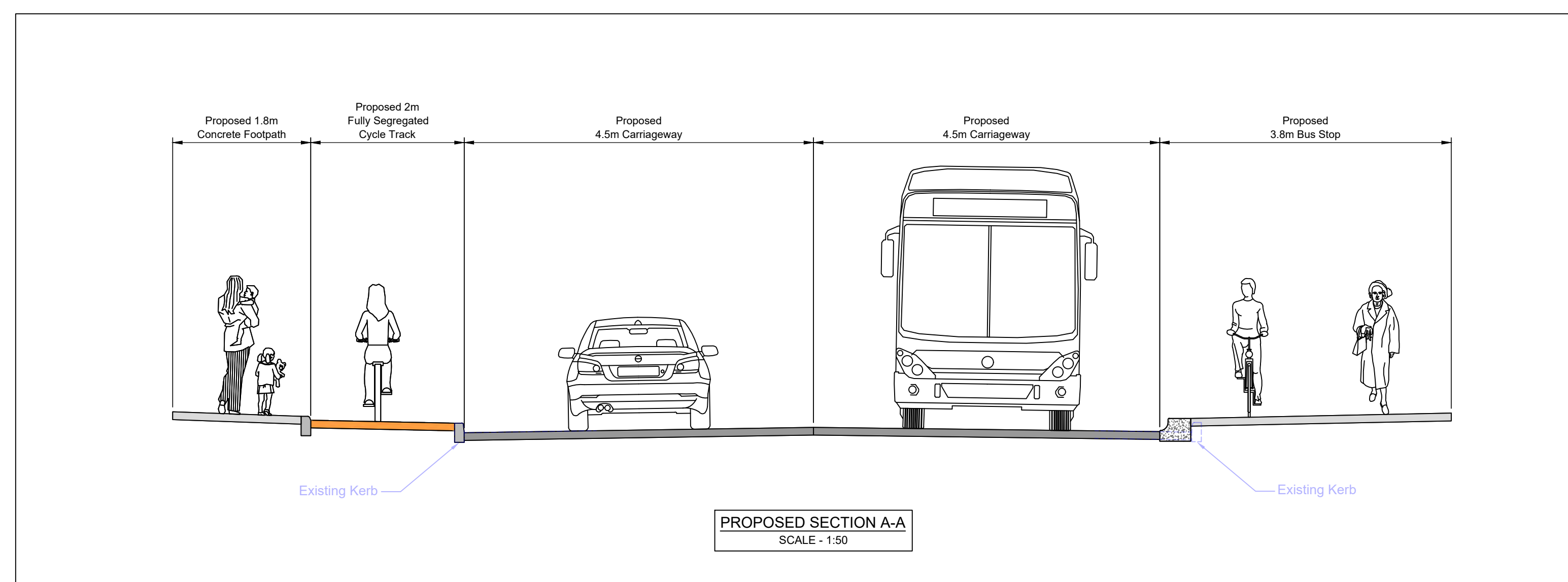
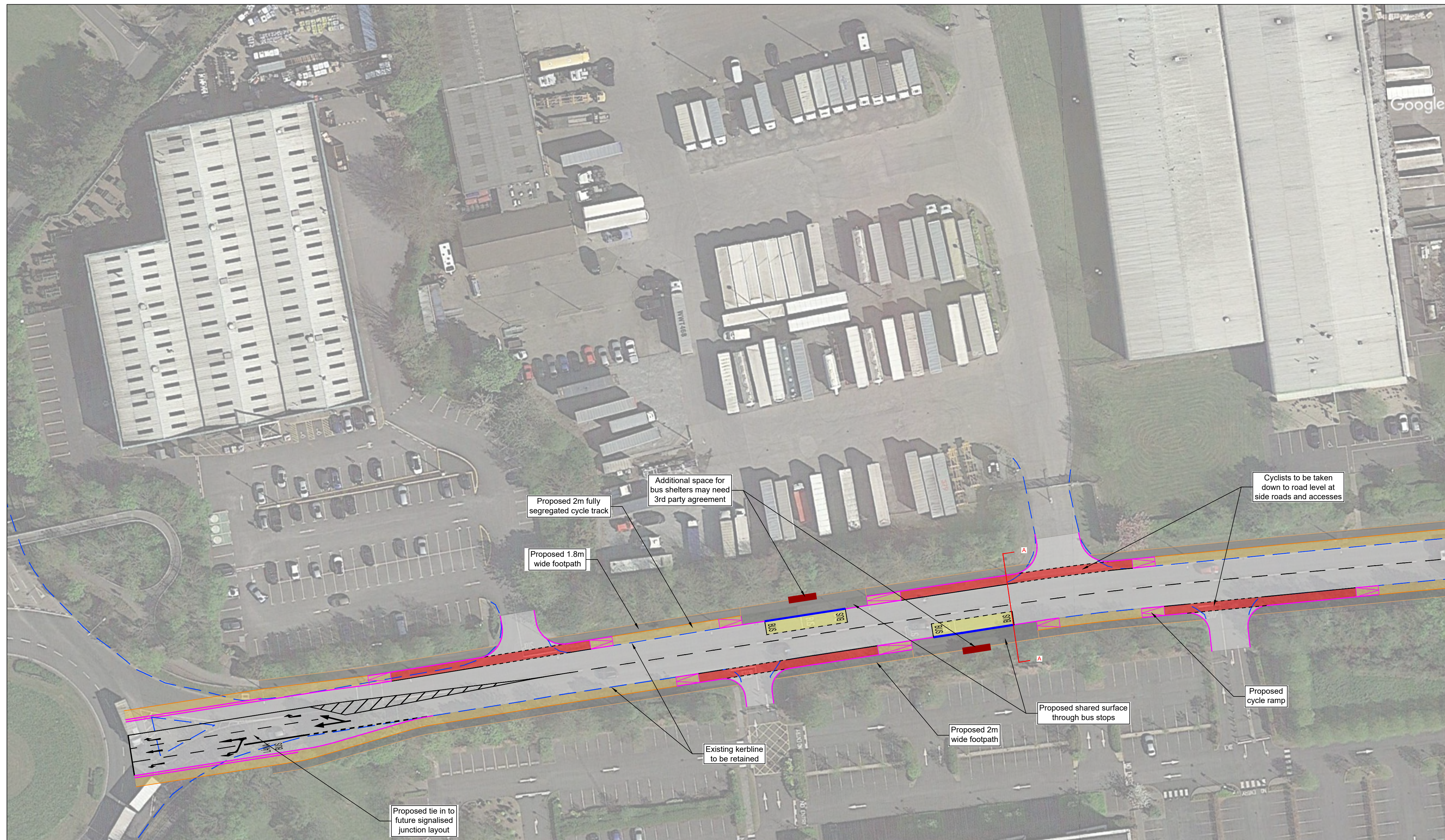


Appendix A – Proposed Options Drawings



LEGEND

- Existing Kerbline ---
- Proposed 125mm High Kerbline ---
- Proposed 50mm Kerb between Cycle Track and Footpath ---
- Proposed Kassel Kerb at Bus Stop ---
- Proposed Cycle Ramp ▭
- Proposed Bus Shelter ▭
- Proposed Carriageway Resurfacing ▭
- Proposed Concrete Footpath ▭
- Proposed Cycle Track ▭
- Proposed Cycle Lane ▭
- Proposed Traffic Calming Ramp ▭

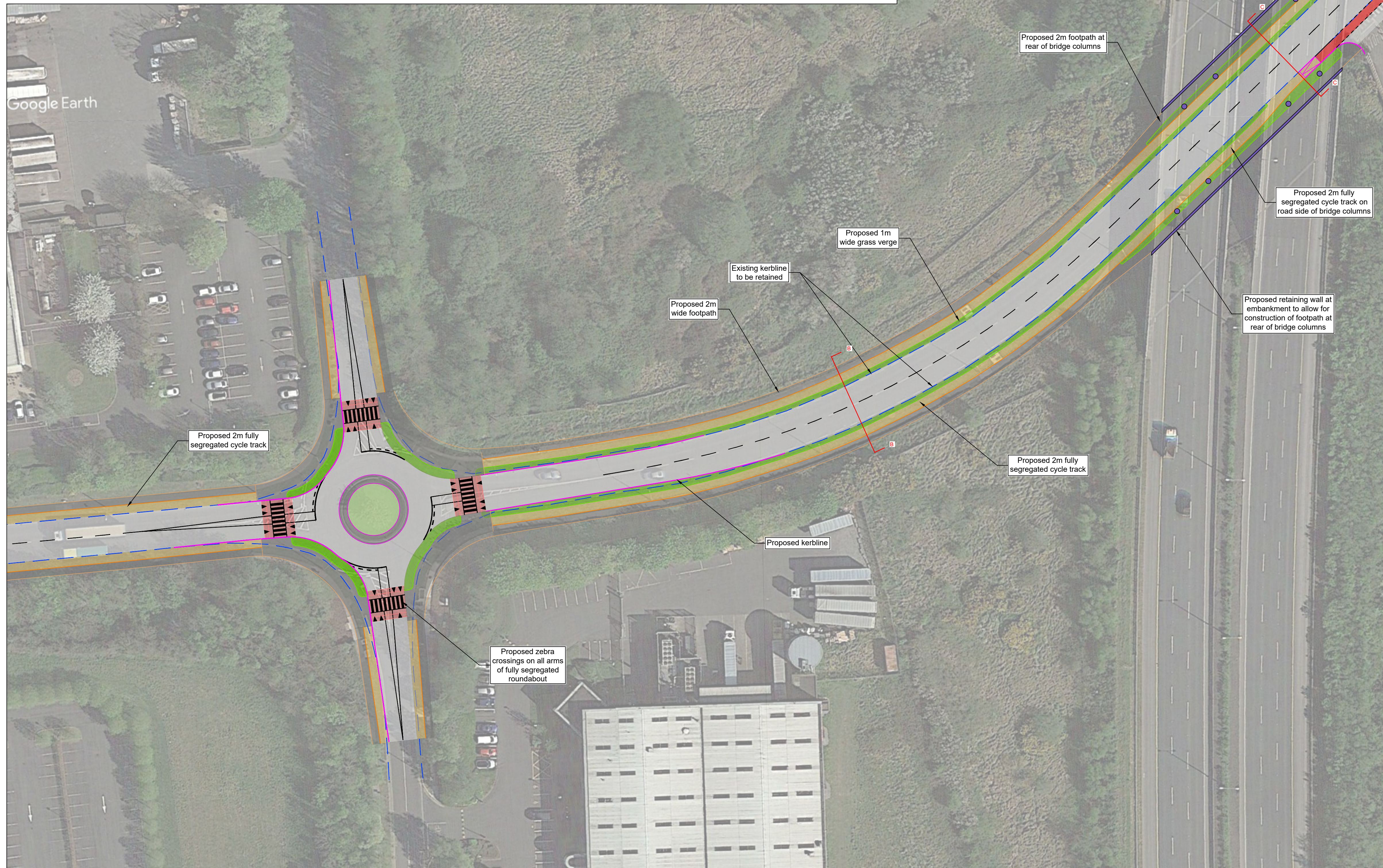
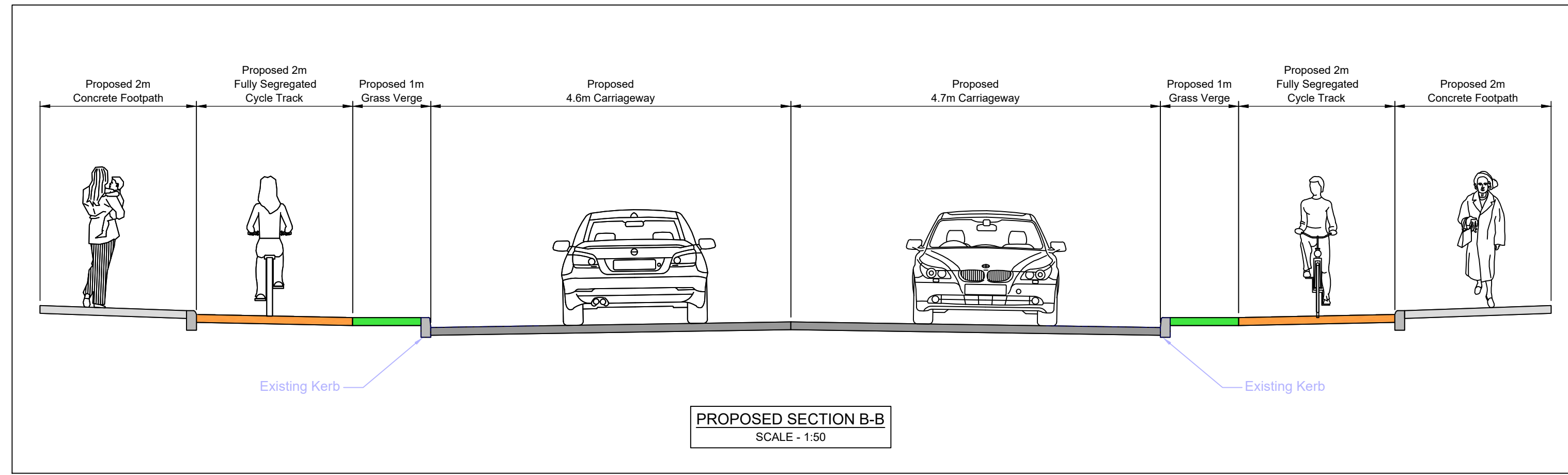


Revision	Description	Initials	Date

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Client	Fingal County Council		
Project	Fingal Active Travel Projects Seatown Road to Estuary Road Roundabout		
Dwg. Title	Option A - Concept Layout Layout 1 of 3		
Drawn By	SP	Date	MARCH 2023
Checked by	MC	Scale	1:500 @ A1
Dwg. Progress	Information		
Dwg. No.	22_110E-CSE-GEN-XX-DR-C-1001		



LEGEND

- Existing Kerbline ---
- Proposed 125mm High Kerbline ---
- Proposed 50mm Kerb between Cycle Track and Footpath ---
- Proposed Kassel Kerb at Bus Stop ---
- Proposed Cycle Ramp ▭
- Proposed Bus Shelter ▭
- Proposed Carriageway Resurfacing ▭
- Proposed Concrete Footpath ▭
- Proposed Cycle Track ▭
- Proposed Cycle Lane ▭
- Proposed Traffic Calming Ramp ▭

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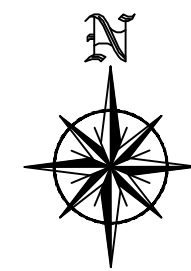
Revision	Description	Initials	Date

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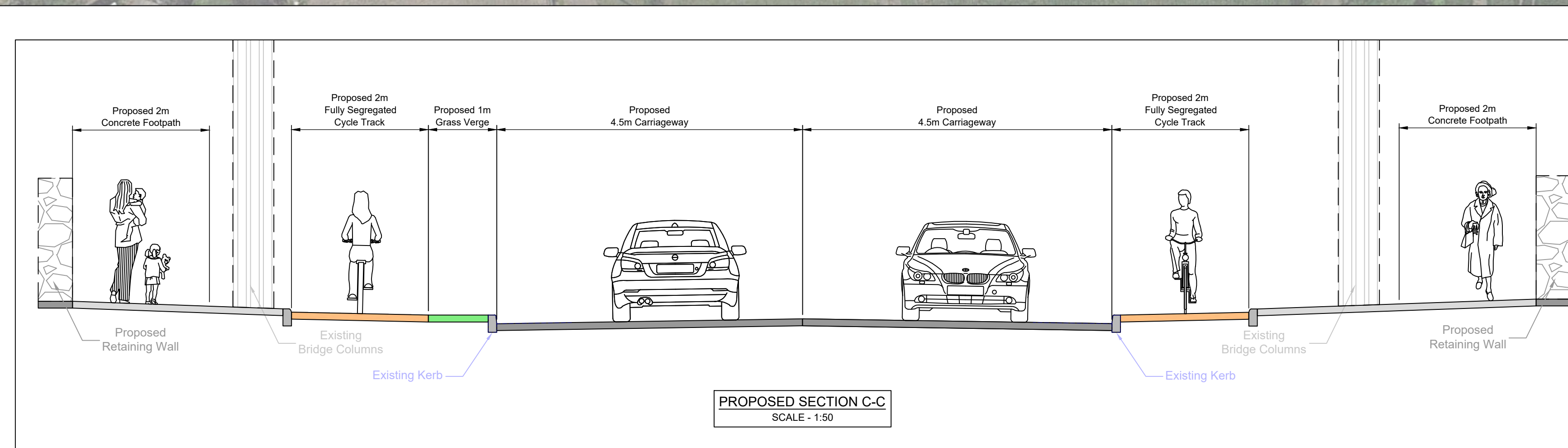
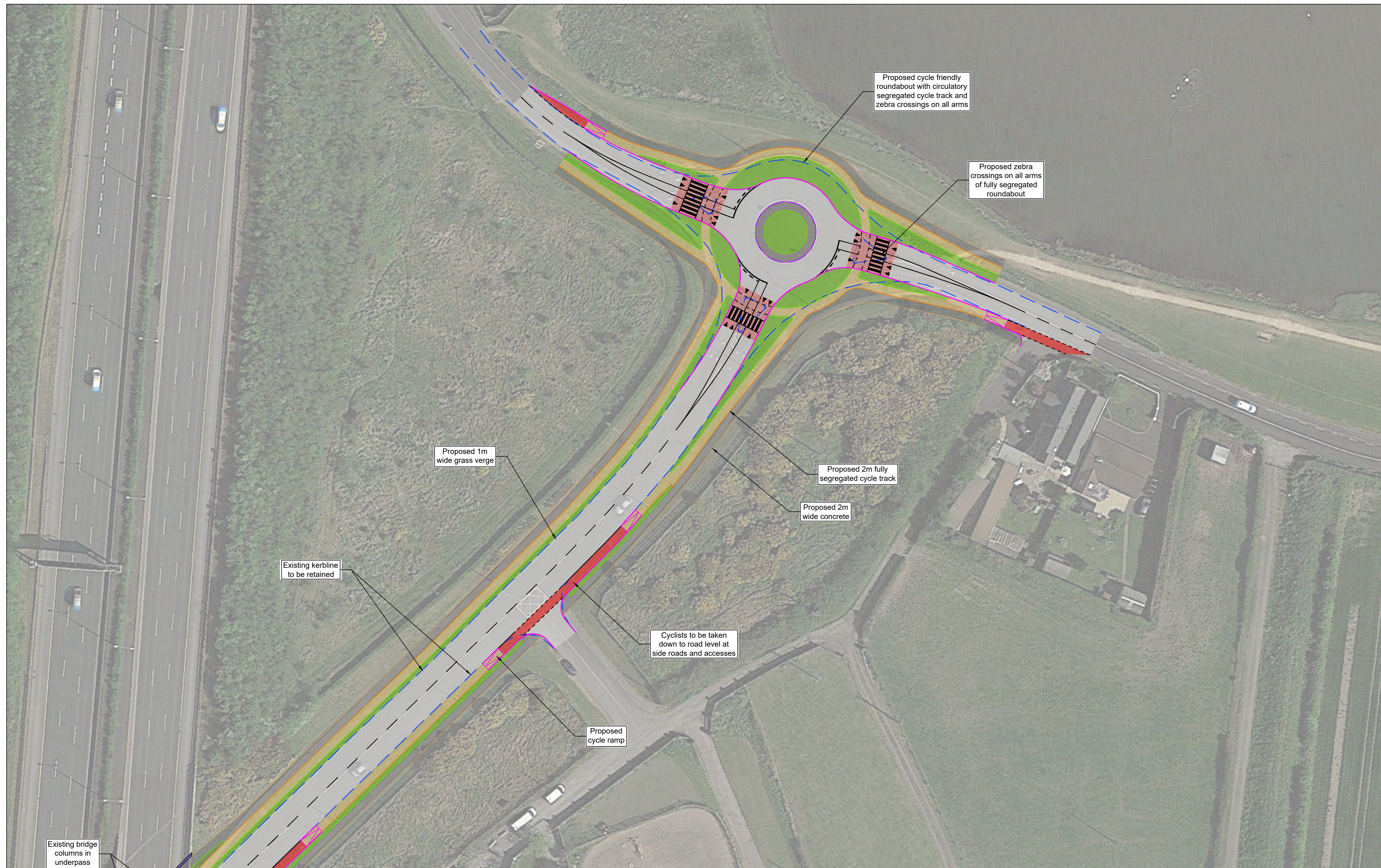
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Client	Fingal County Council		
Project	Fingal Active Travel Projects Seatown Road to Estuary Road Roundabout		
Dwg. Title	Option A - Concept Layout Layout 2 of 3		
Drawn By	SP	Date	MARCH 2023
Checked by	MC	Scale	1:500 @ A1
Dwg. Progress	Information		
Dwg. No.	22_110E-CSE-GEN-XX-DR-C-1002		



LEGEND

- Existing Kerbline ---
- Proposed 125mm High Kerbline ---
- Proposed 50mm Kerb between Cycle Track and Footpath ---
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- Proposed Cycle Ramp ▭
- Proposed Bus Shelter ▭
- Proposed Carriageway Resurfacing ▭
- Proposed Concrete Footpath ▭
- Proposed Cycle Track ▭
- Proposed Cycle Lane ▭
- Proposed Traffic Calming Ramp ▭



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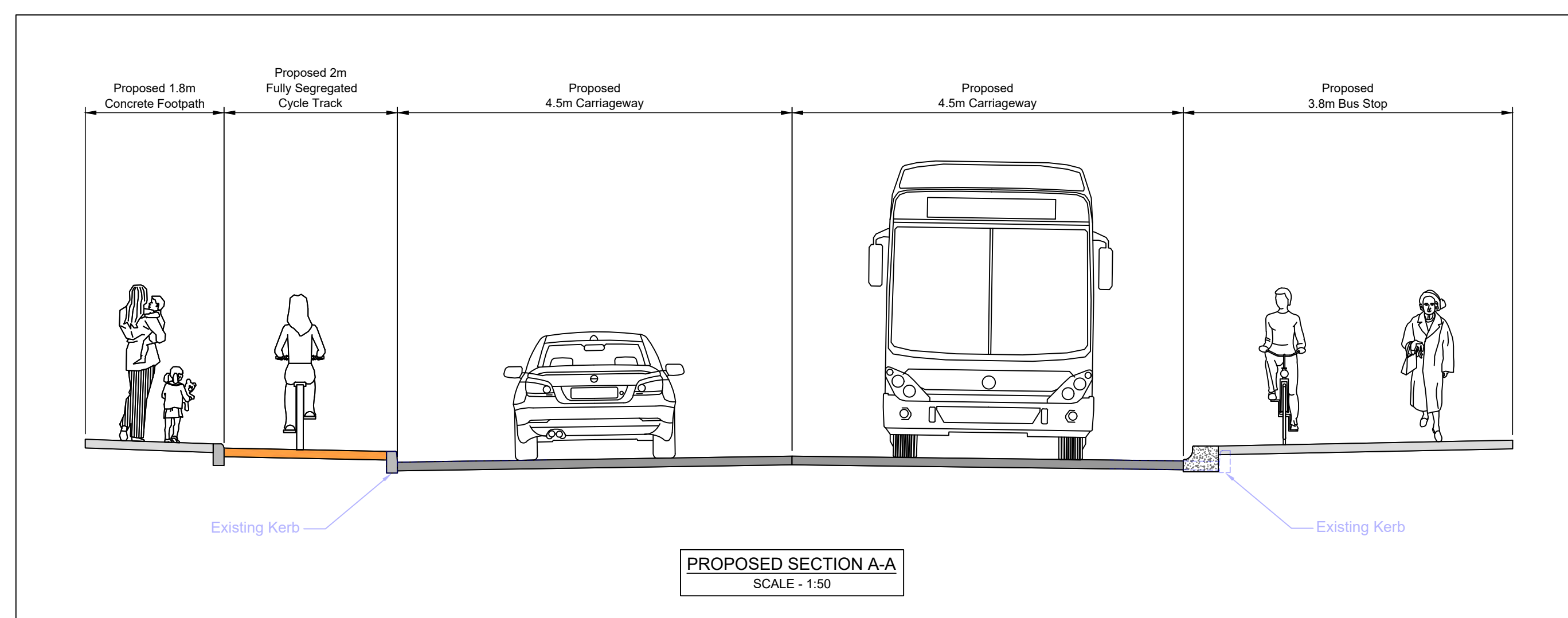
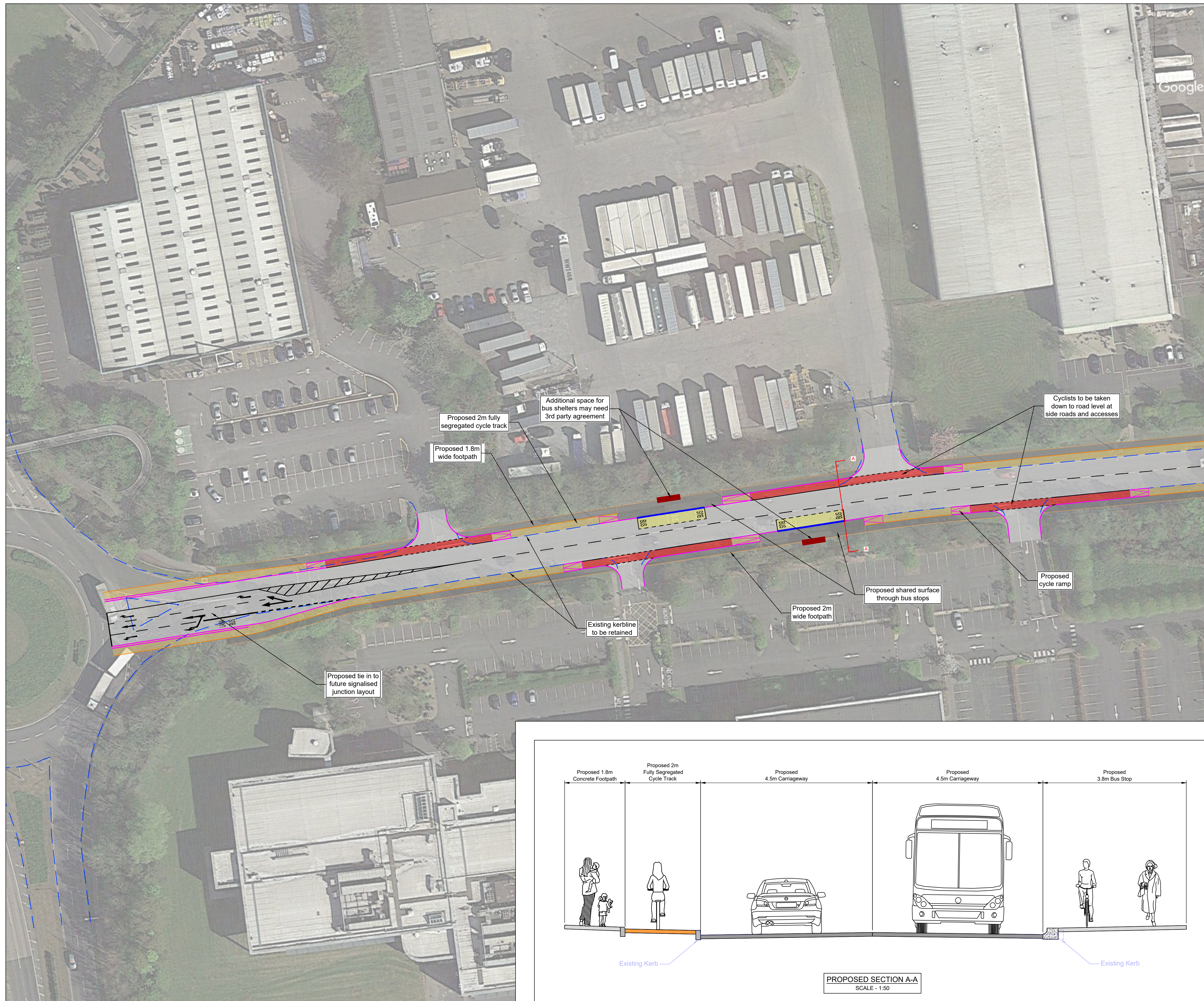
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Client	Fingal County Council		
Project	Fingal Active Travel Projects Seatown Road to Estuary Road Roundabout		
Dwg. Title	Option A - Concept Layout Layout 3 of 3		
Drawn By	SP	Date	MARCH 2023
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Dwg. Progress	Information		
Dwg. No.	22_110E-CSE-GEN-XX-DR-C-1003		



LEGEND

- Existing Kerbline ---
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- Proposed 50mm Kerb between Cycle Track and Footpath ---
- Proposed Kassel Kerb at Bus Stop ---
- Proposed Cycle Ramp ▭
- Proposed Bus Shelter ▭
- Proposed Carriageway Resurfacing ▭
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- Proposed Cycle Track ▭
- Proposed Cycle Lane ▭
- Proposed Traffic Calming Ramp ▭

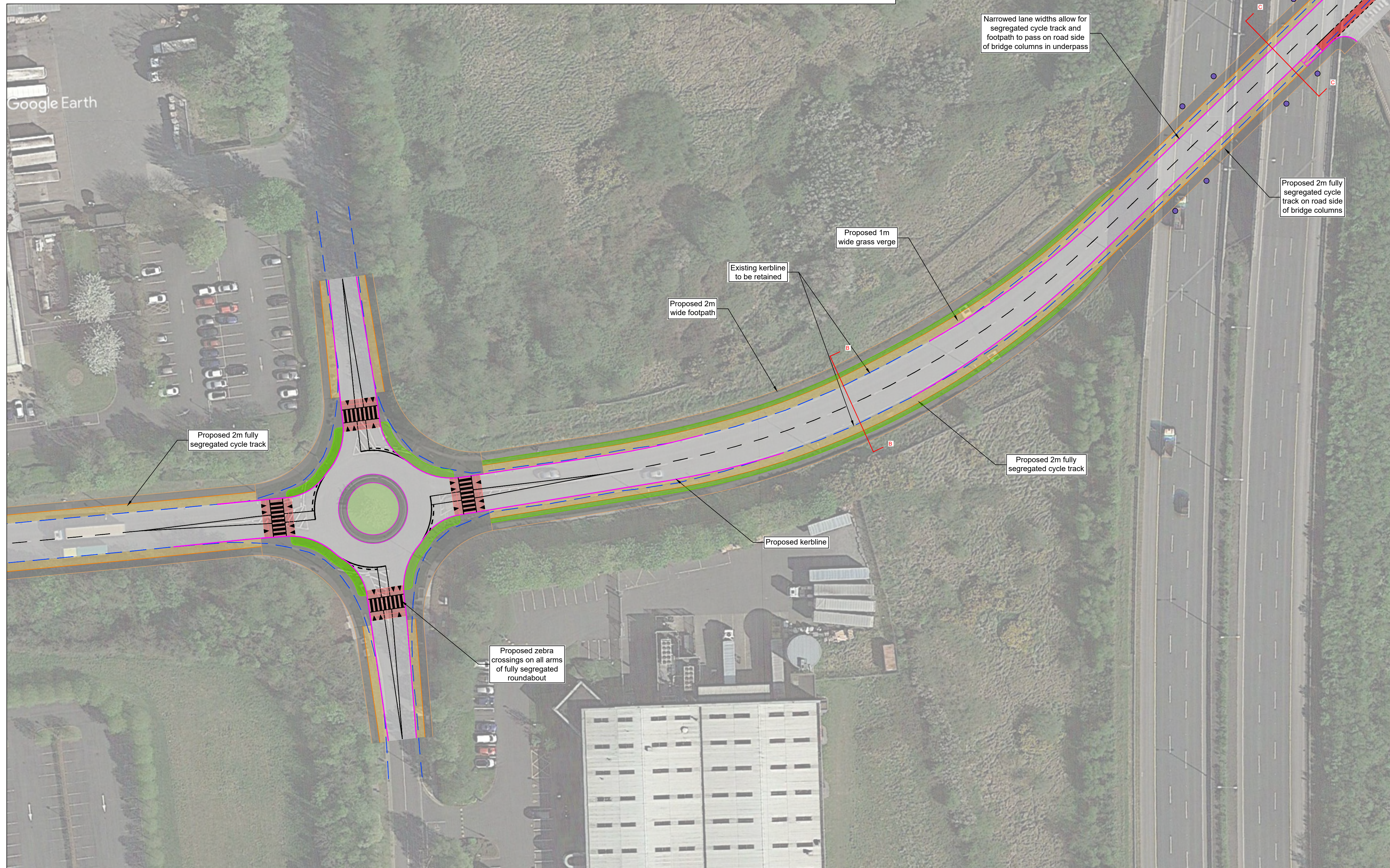
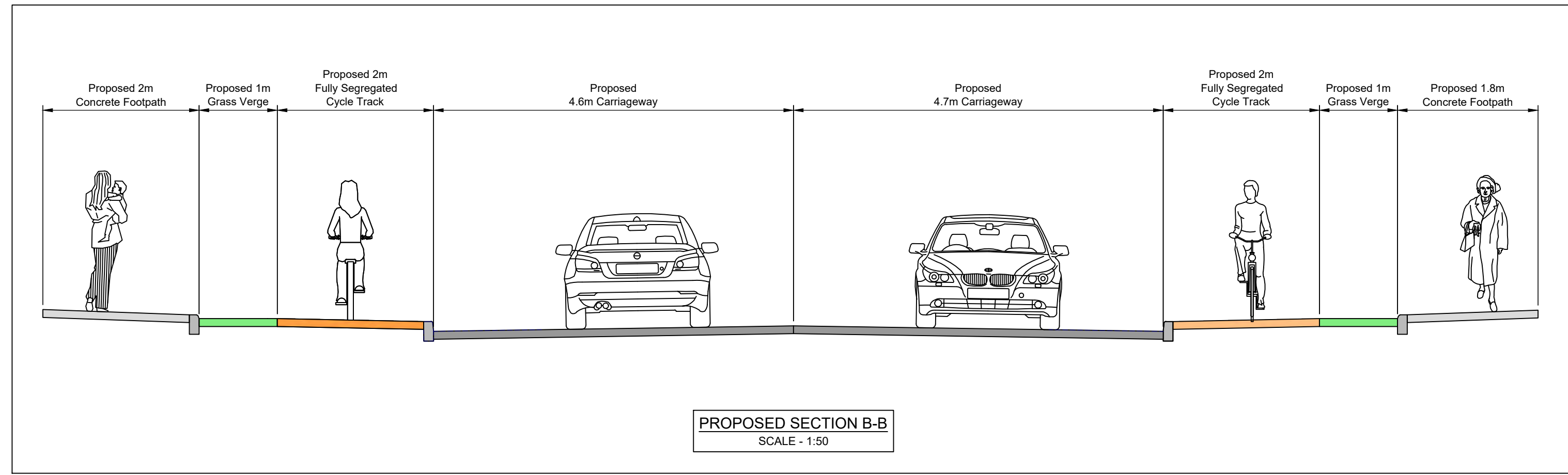


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Client	Fingal County Council		
Project	Fingal Active Travel Projects Seatown Road to Estuary Road Roundabout		
Dwg. Title	Option A1 - Concept Layout Layout 1 of 3		
Drawn By	SP	Date	MARCH 2023
Checked by	MC	Scale	1:500 @ A1
Dwg. Progress	Information		
Dwg. No.	22_110E-CSE-GEN-XX-DR-C-1004		



LEGEND

- Existing Kerblines ---
- Proposed 125mm High Kerblines ---
- Proposed 50mm Kerb between Cycle Track and Footpath ---
- Proposed Kassel Kerb at Bus Stop ---
- Proposed Cycle Ramp [Symbol]
- Proposed Bus Shelter [Symbol]
- Proposed Carriageway Resurfacing [Symbol]
- Proposed Concrete Footpath [Symbol]
- Proposed Cycle Track [Symbol]
- Proposed Cycle Lane [Symbol]
- Proposed Traffic Calming Ramp [Symbol]

Google Earth

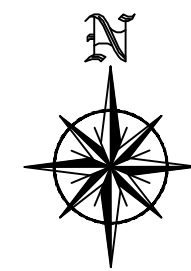
Revision	Description	Initials	Date

Clifton Scannell Emerson Associates

Clifton Scannell Emerson Associates Limited
Consulting Engineers,
3rd Floor The Highline,
Bakers Point, Pottery Road,
Dun Laoghaire, Co. Dublin,
Ireland, A96 KW23

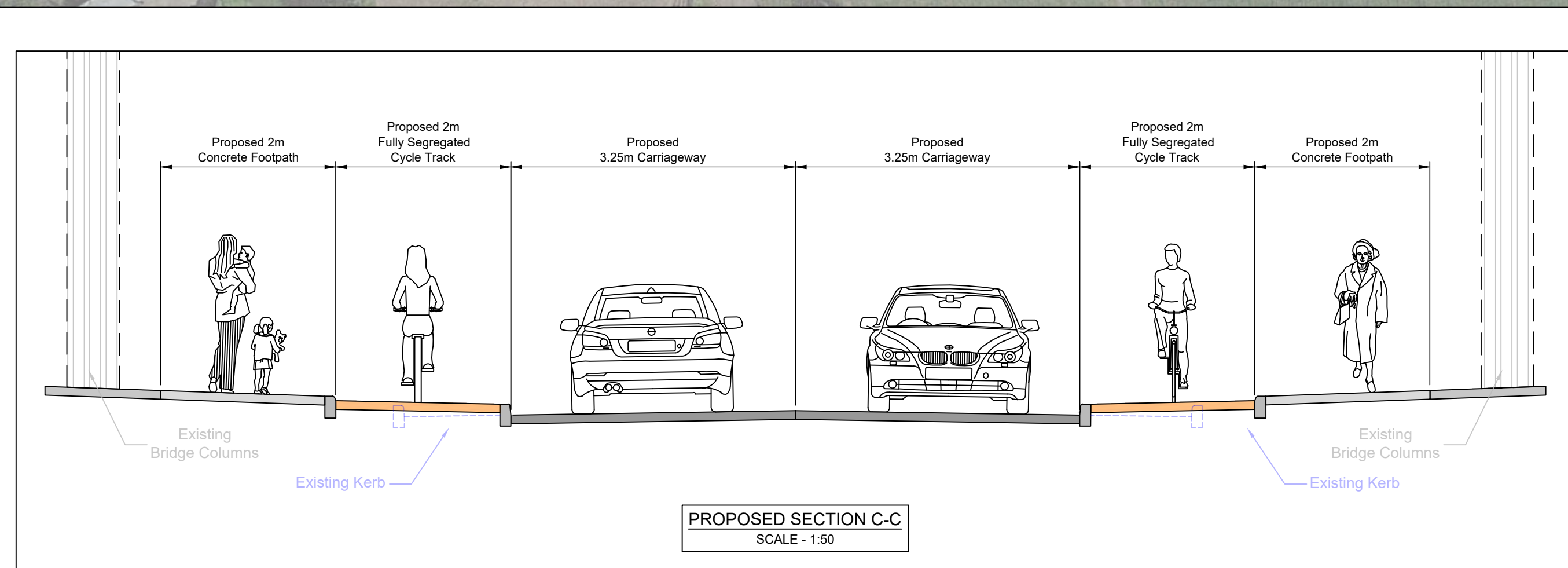
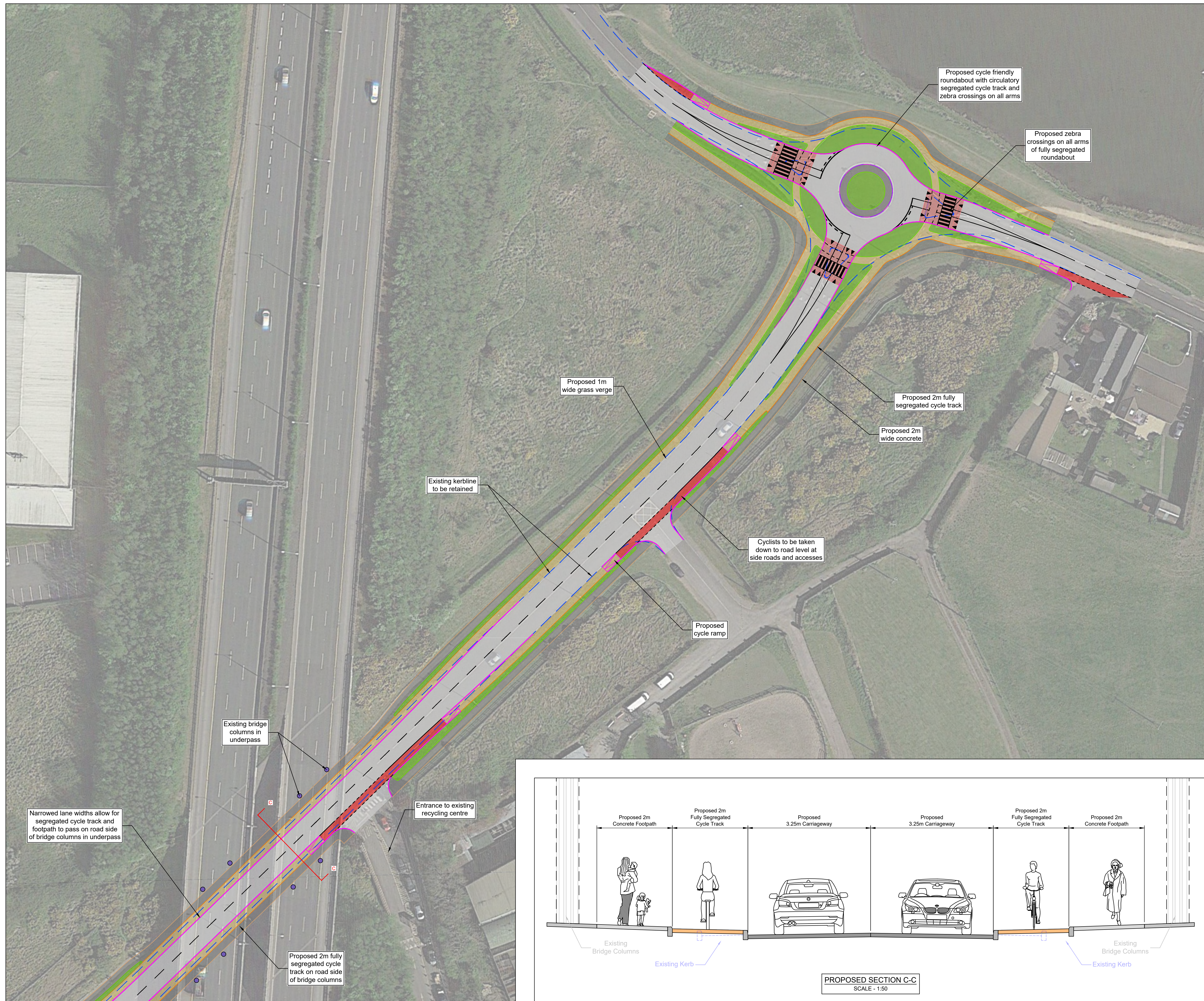
T. +353 1 288 5006
F. +353 1 283 3466
E. info@csea.ie
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Client	Fingal County Council		
Project	Fingal Active Travel Projects Seatown Road to Estuary Road Roundabout		
Dwg. Title	Option A1 - Concept Layout Layout 2 of 3		
Drawn By	SP	Date	MARCH 2023
Checked by	MC	Scale	1:500 @ A1
Dwg. Progress	Information		
Dwg. No.	22_110E-CSE-GEN-XX-DR-C-1005		



LEGEND

- Existing Kerbline ---
- Proposed 125mm High Kerbline ---
- Proposed 50mm Kerb between Cycle Track and Footpath ---
- Proposed Kassel Kerb at Bus Stop ---
- Proposed Cycle Ramp ▭
- Proposed Bus Shelter ▭
- Proposed Carriageway Resurfacing ▭
- Proposed Concrete Footpath ▭
- Proposed Cycle Track ▭
- Proposed Cycle Lane ▭
- Proposed Traffic Calming Ramp ▭



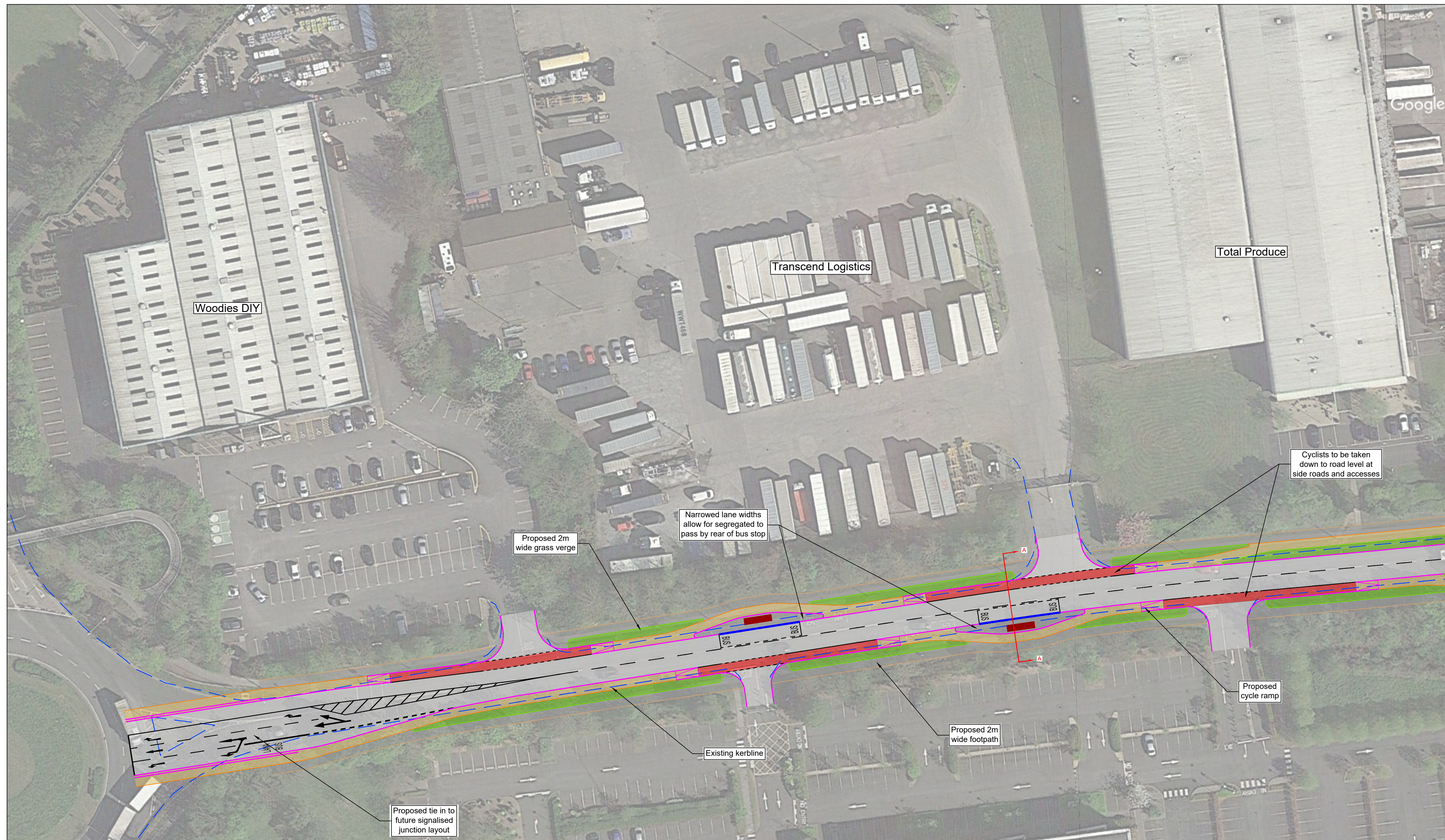
Revision	Description	Initials	Date

Clifton Scannell Emerson Associates

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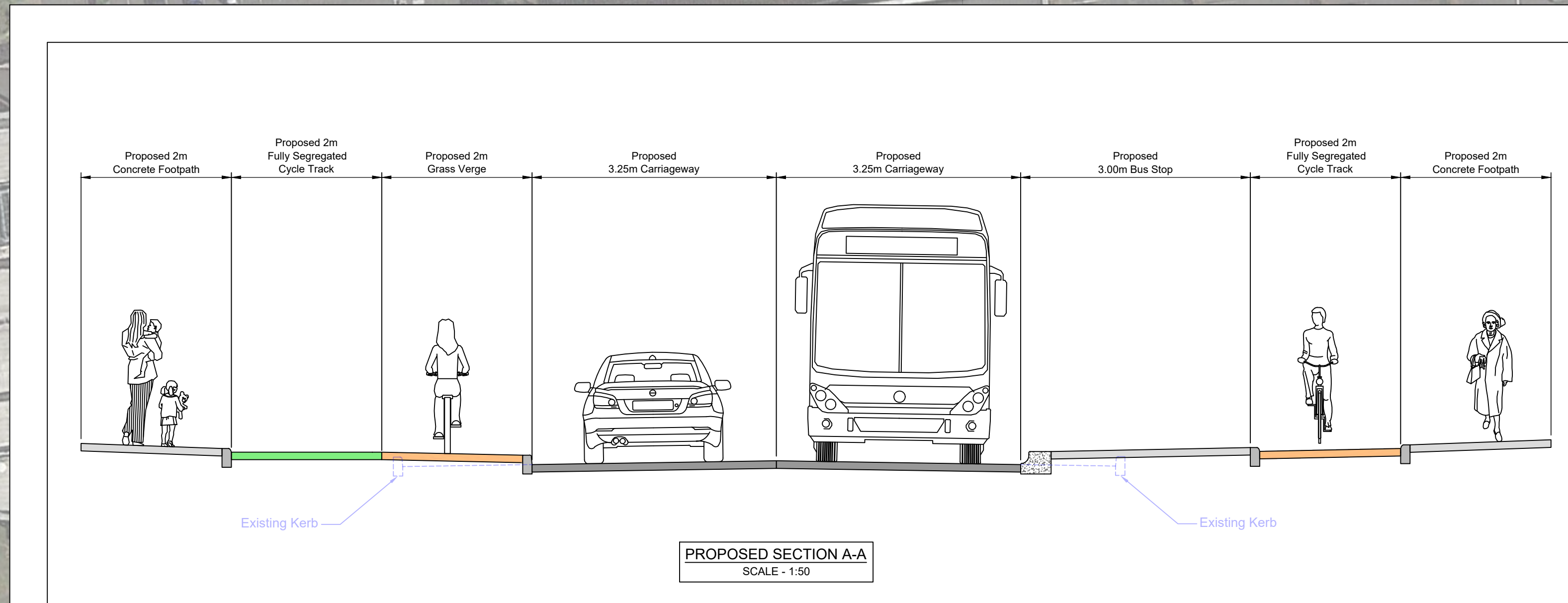
T. +353 1 288 5006
F. +353 1 283 3466
E. info@csea.ie
W. www.csea.ie

Client	Fingal County Council		
Project	Fingal Active Travel Projects Seatown Road to Estuary Road Roundabout		
Dwg. Title	Option A1 - Concept Layout Layout 3 of 3		
Drawn By	SP	Date	MARCH 2023
Checked by	MC	Scale	1:500 @ A1
Dwg. Progress	Information		
Dwg. No.	22_110E-CSE-GEN-XX-DR-C-1006		



LEGEND

- Existing Kerblines ---
- Proposed 125mm High Kerblines ---
- Proposed 50mm Kerb between Cycle Track and Footpath ---
- Proposed Kassel Kerb at Bus Stop ---
- Proposed Cycle Ramp [Symbol]
- Proposed Bus Shelter [Symbol]
- Proposed Carriageway Resurfacing [Symbol]
- Proposed Concrete Footpath [Symbol]
- Proposed Cycle Track [Symbol]
- Proposed Cycle Lane [Symbol]
- Proposed Traffic Calming Ramp [Symbol]



Revision	Description	Initials	Date

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Client: **Fingal County Council**

Project: **Fingal Active Travel Projects**
Seatown Road to Estuary Road Roundabout

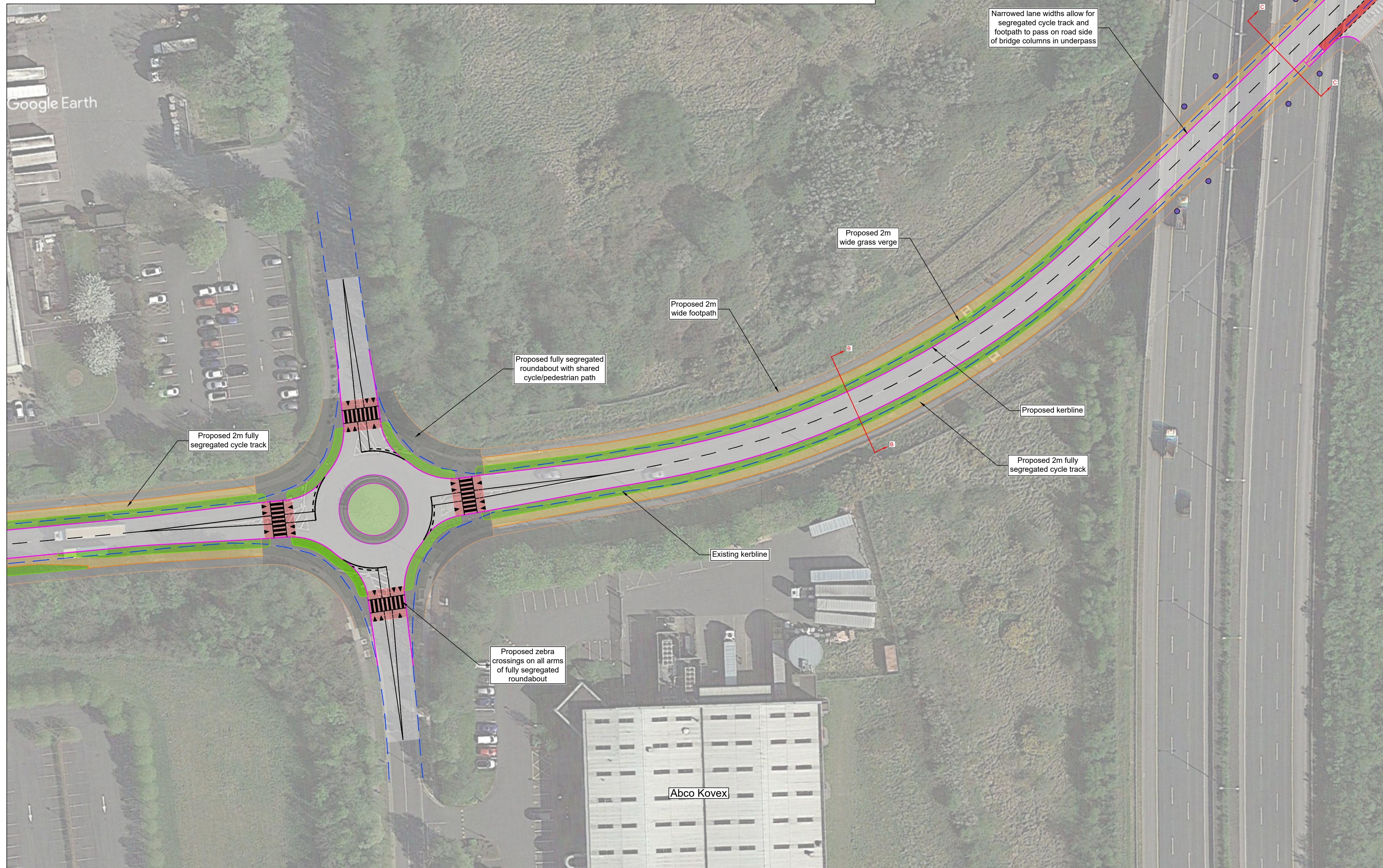
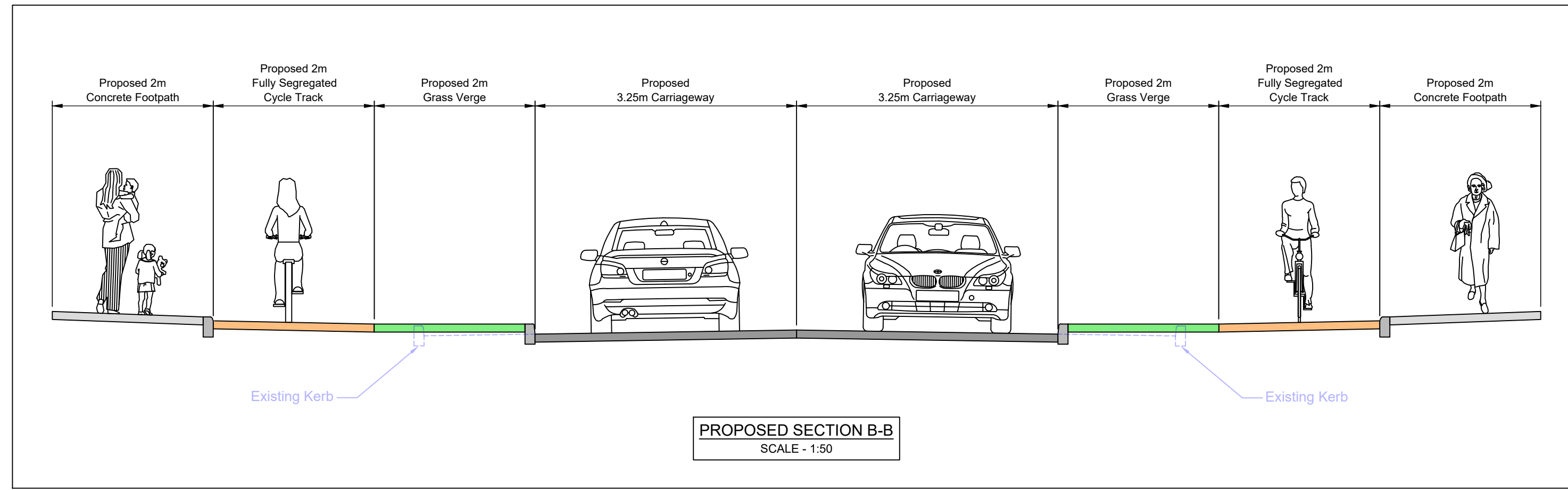
Dwg. Title: **Option B - Concept Layout**
Layout 1 of 3

Drawn By: **SP** Date: **MARCH 2023**

Checked by: **MC** Scale: **1:500 @ A1**

Dwg. Progress: **Information**

Dwg. No.: **22_110E-CSE-GEN-XX-DR-C-1007**



LEGEND

- Existing Kerbline ---
- Proposed 125mm High Kerbline ---
- Proposed 50mm Kerb between Cycle Track and Footpath ---
- Proposed Kassel Kerb at Bus Stop ---
- Proposed Cycle Ramp ▭
- Proposed Bus Shelter ▭
- Proposed Carriageway Resurfacing ▭
- Proposed Concrete Footpath ▭
- Proposed Cycle Track ▭
- Proposed Cycle Lane ▭
- Proposed Traffic Calming Ramp ▭

Revision	Description	Initials	Date

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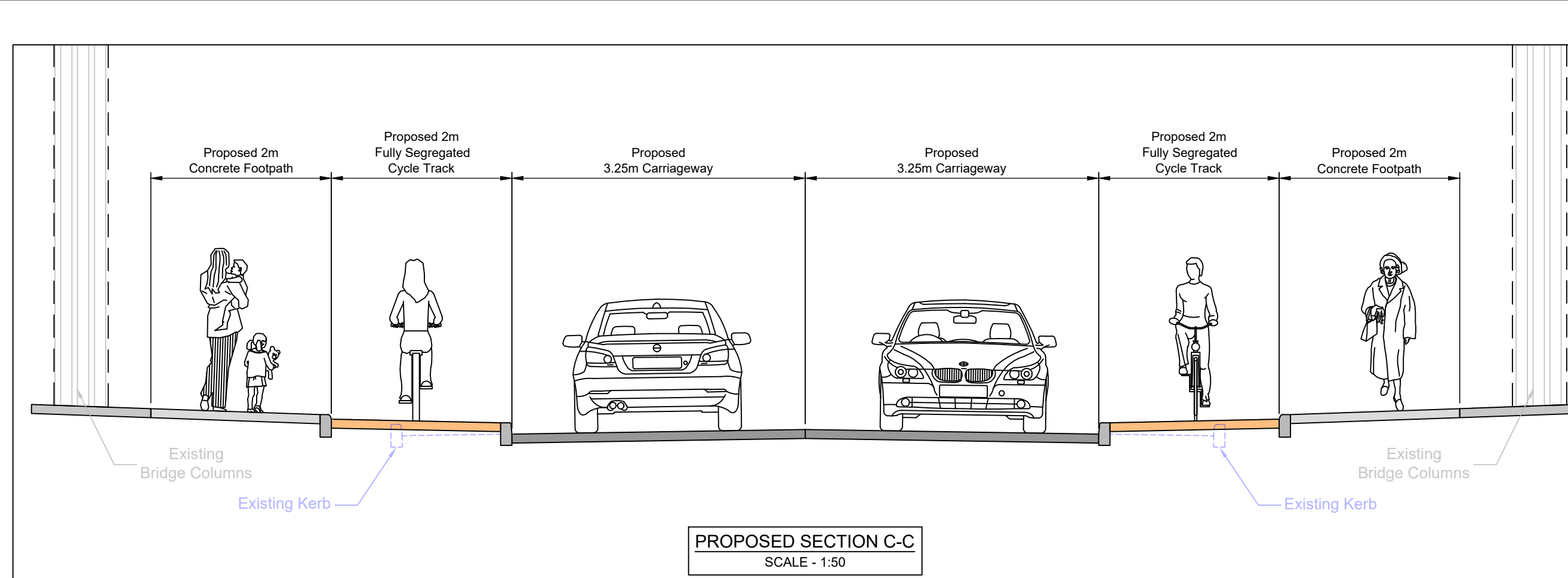
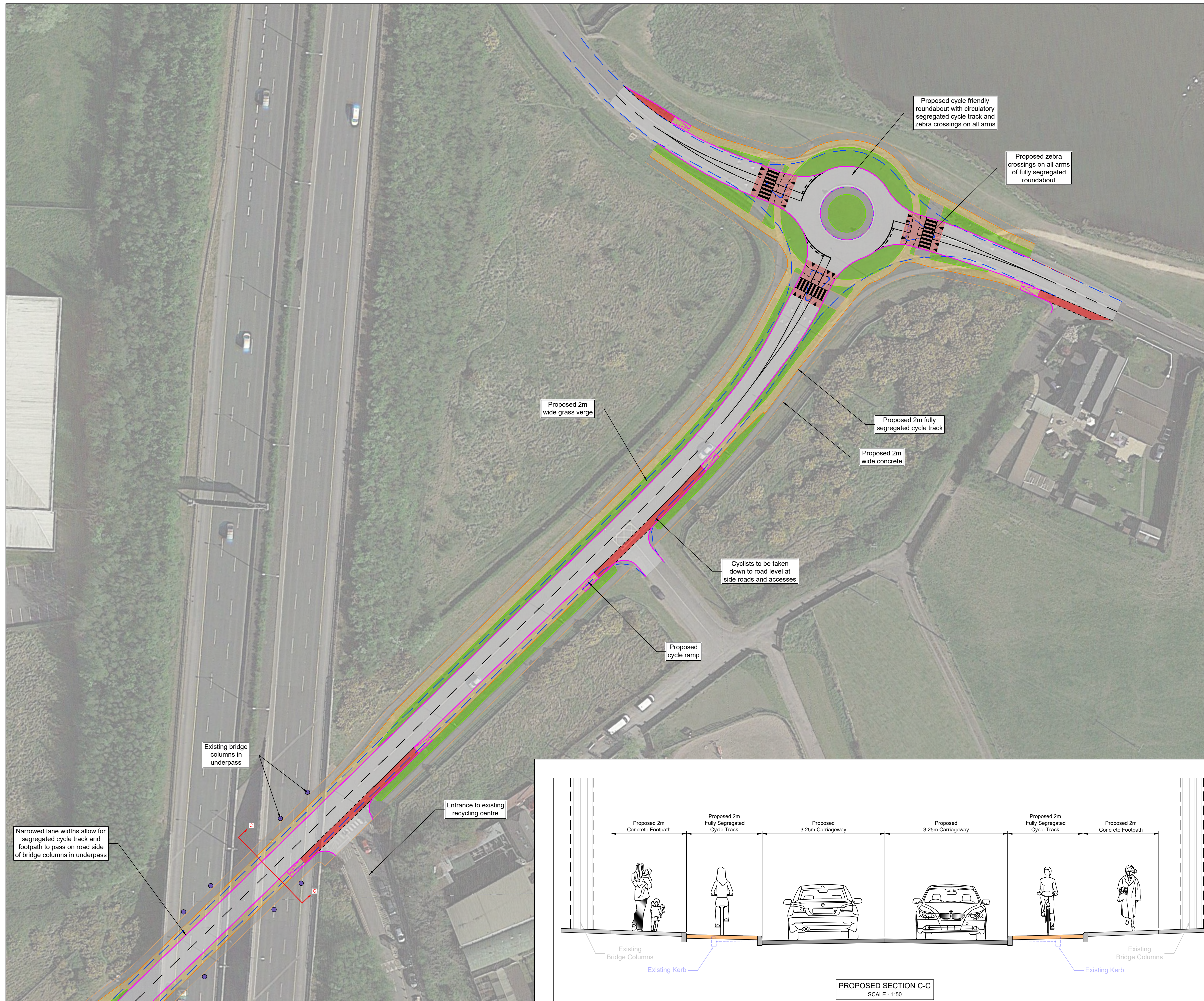
T. +353 1 288 5006
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Client	Fingal County Council		
Project	Fingal Active Travel Projects Seatown Road to Estuary Road Roundabout		
Dwg. Title	Option B - Concept Layout Layout 2 of 3		
Drawn By	SP	Date	MARCH 2023
Checked by	MC	Scale	1:500 @ A1
Dwg. Progress	Information		
Dwg. No.	22_110E-CSE-GEN-XX-DR-C-1008		



LEGEND

- Existing Kerbline ---
- Proposed 125mm High Kerbline ---
- Proposed 50mm Kerb between Cycle Track and Footpath ---
- Proposed Kassel Kerb at Bus Stop ---
- Proposed Cycle Ramp ▭
- Proposed Bus Shelter ▭
- Proposed Carriageway Resurfacing ---
- Proposed Concrete Footpath ---
- Proposed Cycle Track ---
- Proposed Cycle Lane ---
- Proposed Traffic Calming Ramp ---



Revision	Description	Initials	Date

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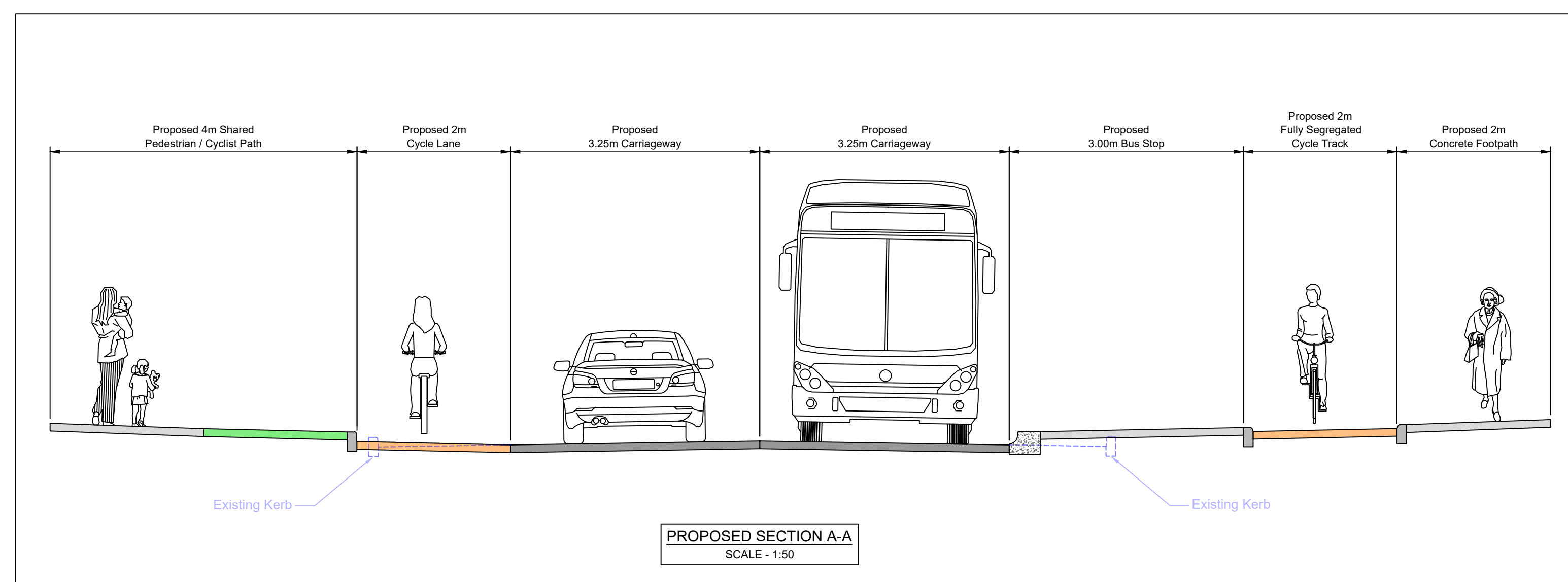
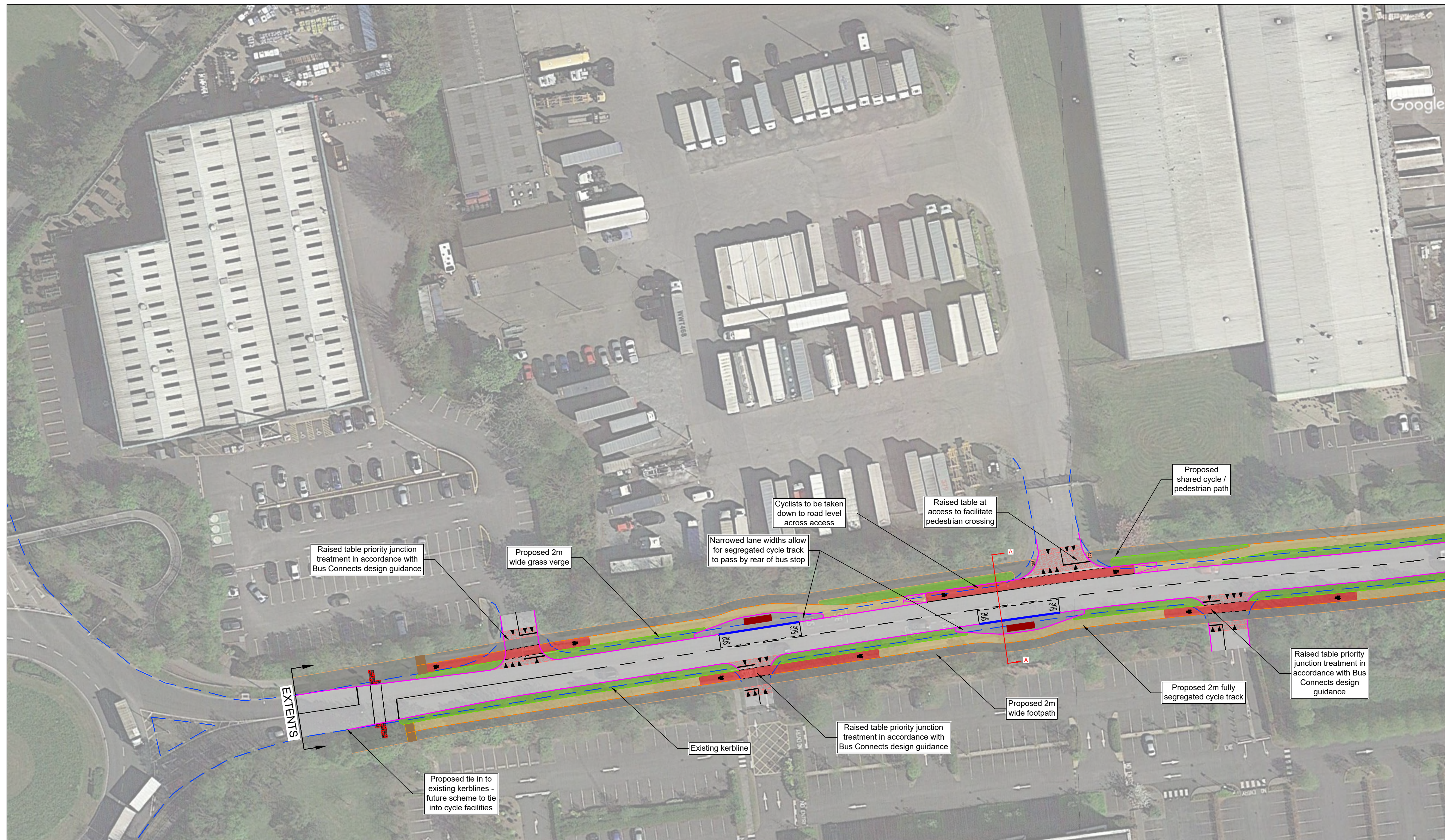
T. +353 1 288 5006
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Client	Fingal County Council		
Project	Fingal Active Travel Projects Seatown Road to Estuary Road Roundabout		
Dwg. Title	Option B - Concept Layout Layout 3 of 3		
Drawn By	SP	Date	MARCH 2023
Checked by	MC	Scale	1:500 @ A1
Dwg. Progress	Information		
Dwg. No.	22_110A-CSE-GEN-XX-DR-C-1009		



LEGEND

- Existing Kerbline ---
- Proposed 125mm High Kerbline ---
- Proposed 50mm Kerb between Cycle Track and Footpath ---
- Proposed Kassel Kerb at Bus Stop ---
- Proposed Cycle Ramp █
- Proposed Bus Shelter █
- Proposed Carriageway Resurfacing █
- Proposed Concrete Footpath █
- Proposed Cycle Track █
- Proposed Cycle Lane █
- Proposed Traffic Calming Ramp █
- Proposed Grass Verge █



Revision	Description	Initials	Date

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Client: **Fingal County Council**

Project: **Fingal Active Travel Projects**

Dwg. Title: **Seatown Road to Estuary Road Roundabout**

Dwg. Progress: **Option B1 - Emerging Preferred Option**

Dwg. No.: **Layout 1 of 3**

Drawn By: **SP** Date: **MARCH 2023**

Checked by: **MC** Scale: **1:500 @ A1**

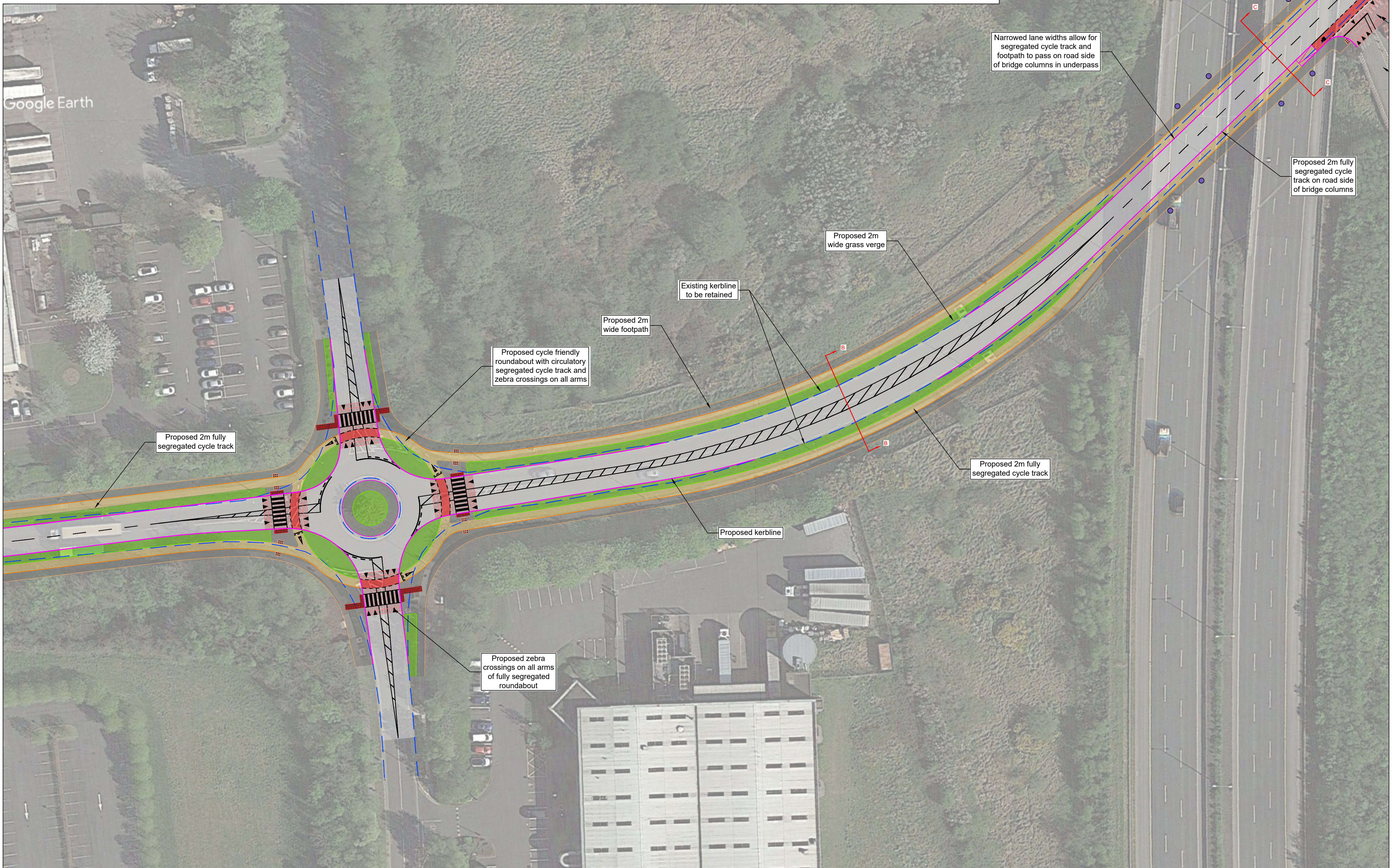
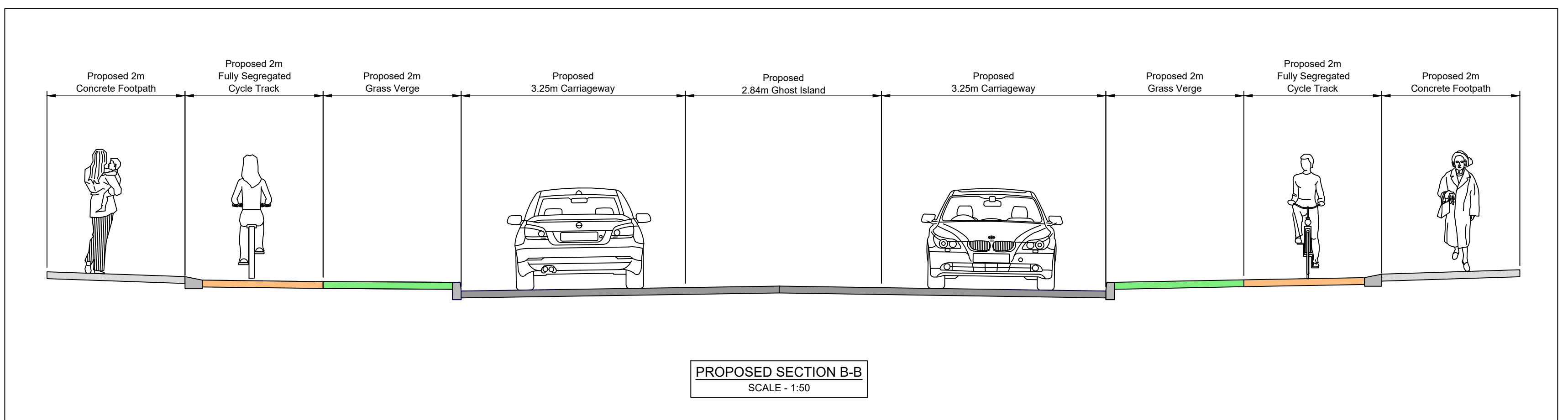
Dwg. Progress: **PRELIMINARY**

Dwg. No.: **22_110E-CSE-GEN-XX-DR-C-1010**



LEGEND

- Existing Kerbline ---
- Proposed 125mm High Kerbline ---
- Proposed 50mm Kerb between Cycle Track and Footpath ---
- Proposed Kassel Kerb at Bus Stop ---
- Proposed Cycle Ramp [Symbol]
- Proposed Bus Shelter [Symbol]
- Proposed Carriageway Resurfacing [Symbol]
- Proposed Concrete Footpath [Symbol]
- Proposed Cycle Track [Symbol]
- Proposed Cycle Lane [Symbol]
- Proposed Traffic Calming Ramp [Symbol]
- Proposed Grass Verge [Symbol]



Revision	Description	Initials	Date

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Client: Fingal County Council

Project: Fingal Active Travel Projects

Dwg. Title: Seatown Road to Estuary Road Roundabout

Dwg. Progress: Option B1 - Emerging Preferred Option

Drawn By: SP Date: MARCH 2023

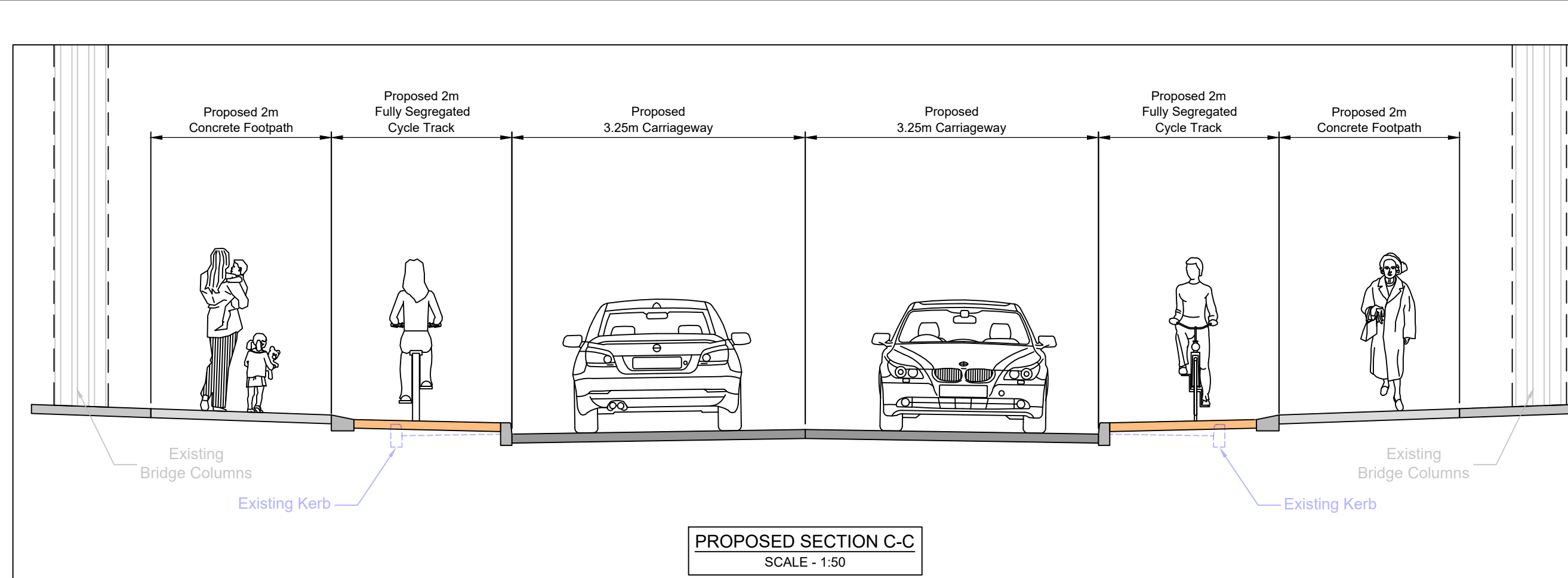
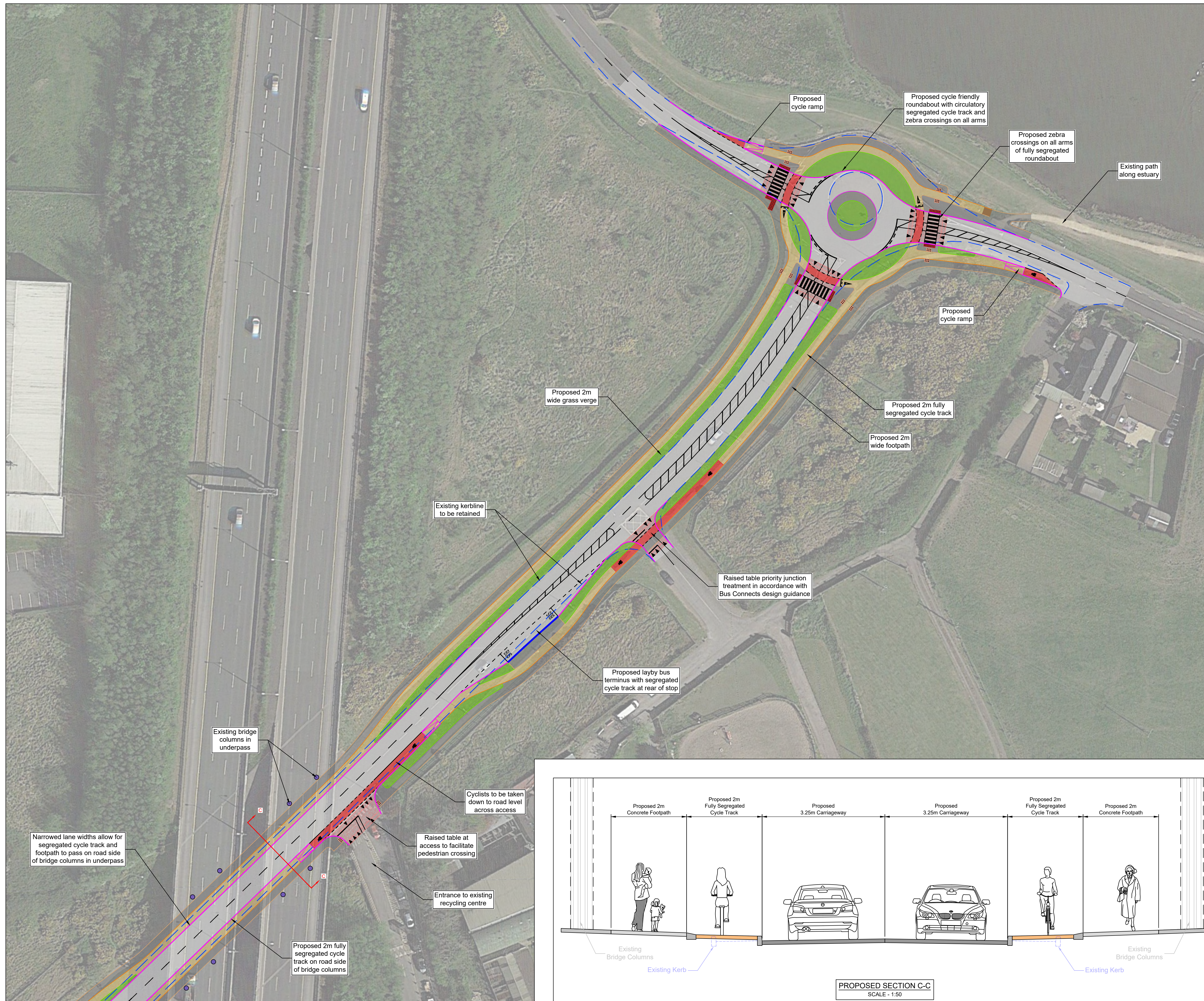
Checked by: MC Scale: 1:500 @ A1

Dwg. No.: 22_110E-CSE-GEN-XX-DR-C-1011



LEGEND

- Existing Kerbline ---
- Proposed 125mm High Kerbline ---
- Proposed 50mm Kerb between Cycle Track and Footpath ---
- Proposed Kassel Kerb at Bus Stop ---
- Proposed Cycle Ramp [Pink Box]
- Proposed Bus Shelter [Red Box]
- Proposed Carriageway Resurfacing [Light Grey Box]
- Proposed Concrete Footpath [Grey Box]
- Proposed Cycle Track [Yellow Box]
- Proposed Cycle Lane [Red Dashed Box]
- Proposed Traffic Calming Ramp [Red Dotted Box]
- Proposed Grass Verge [Green Box]



Revision	Description	Initials	Date

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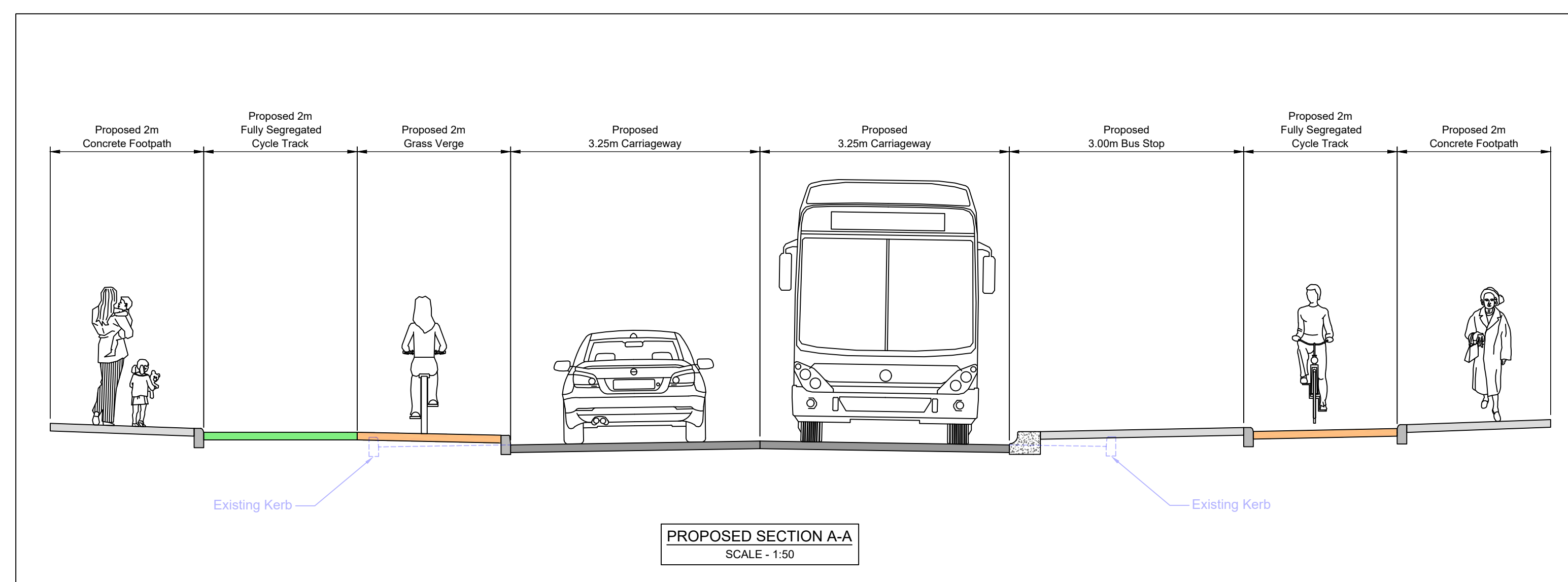
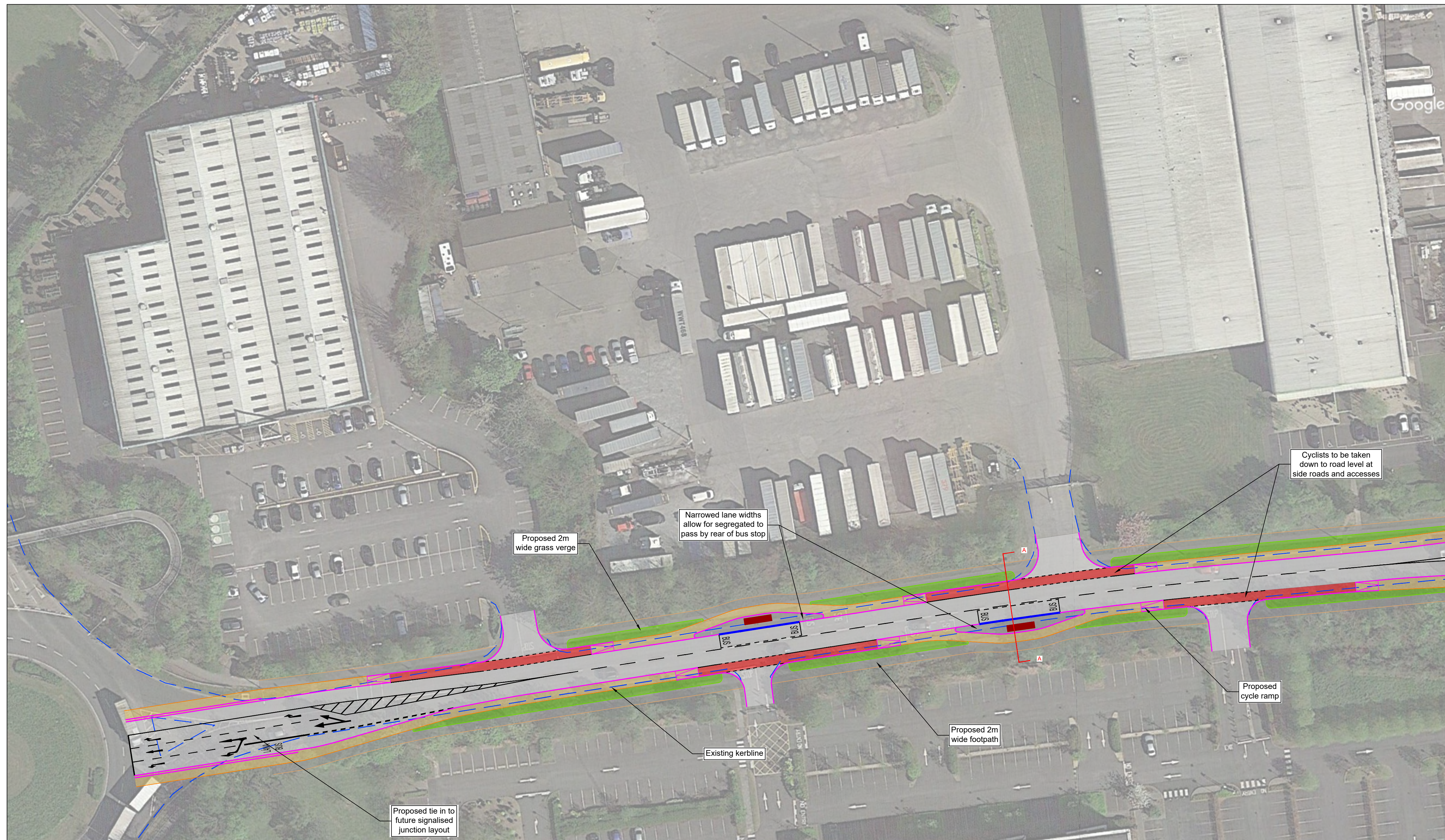
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W. www.csea.ie

Client	Fingal County Council		
Project	Fingal Active Travel Projects Seatown Road to Estuary Road Roundabout		
Dwg. Title	Option B1 - Emerging Preferred Option Layout 3 of 3		
Drawn By	SP	Date	MARCH 2023
Checked by	MC	Scale	1:500 @ A1
Dwg. Progress	PRELIMINARY		
Dwg. No.	22_110E-CSE-GEN-XX-DR-C-1012		



LEGEND

- Existing Kerbline ---
- Proposed 125mm High Kerbline —
- Proposed 50mm Kerb between Cycle Track and Footpath —
- Proposed Kassel Kerb at Bus Stop —
- Proposed Cycle Ramp ▭
- Proposed Bus Shelter ■
- Proposed Carriageway Resurfacing ▭
- Proposed Concrete Footpath ▭
- Proposed Cycle Track ▭
- Proposed Cycle Lane ▭
- Proposed Traffic Calming Ramp ▭

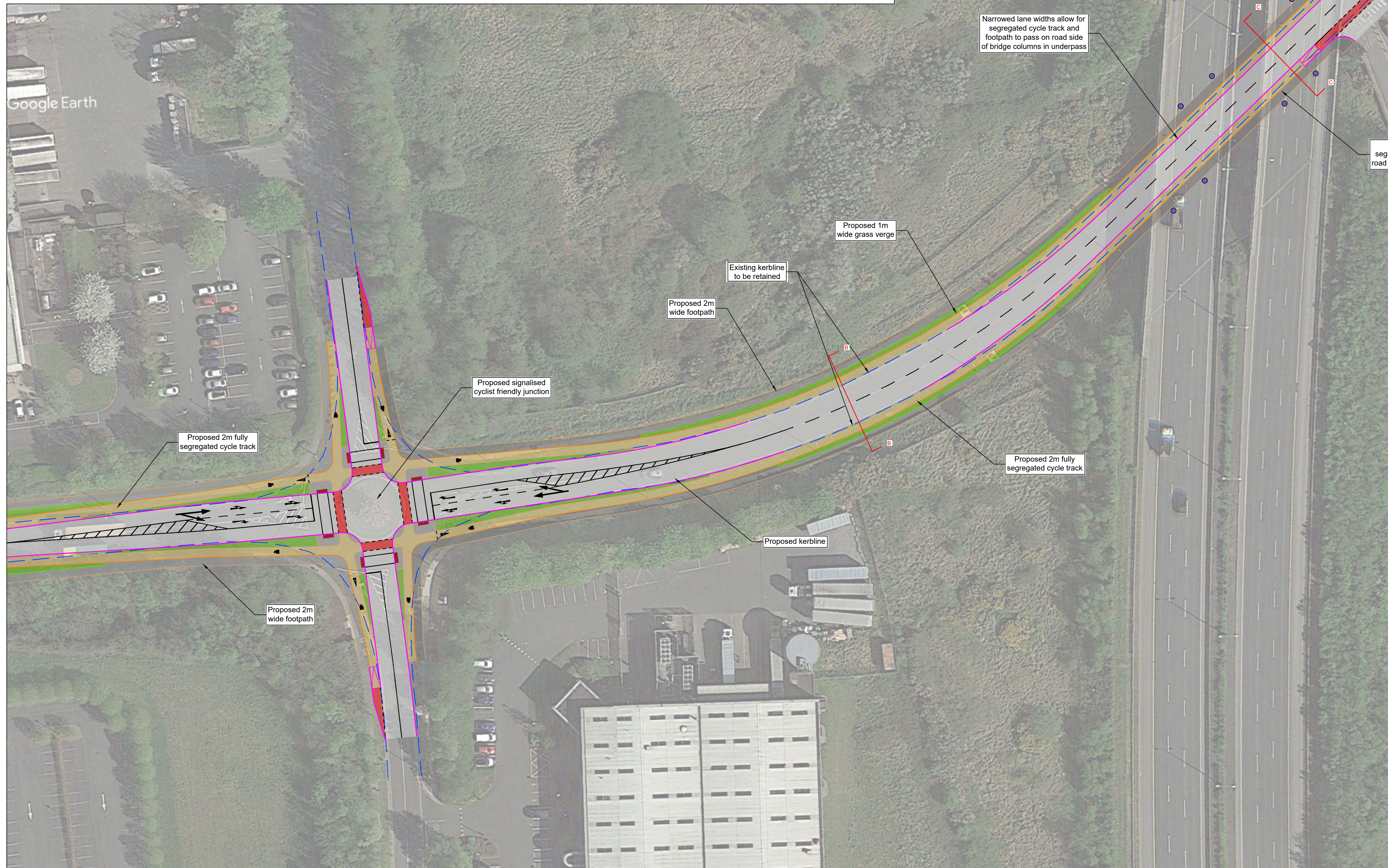
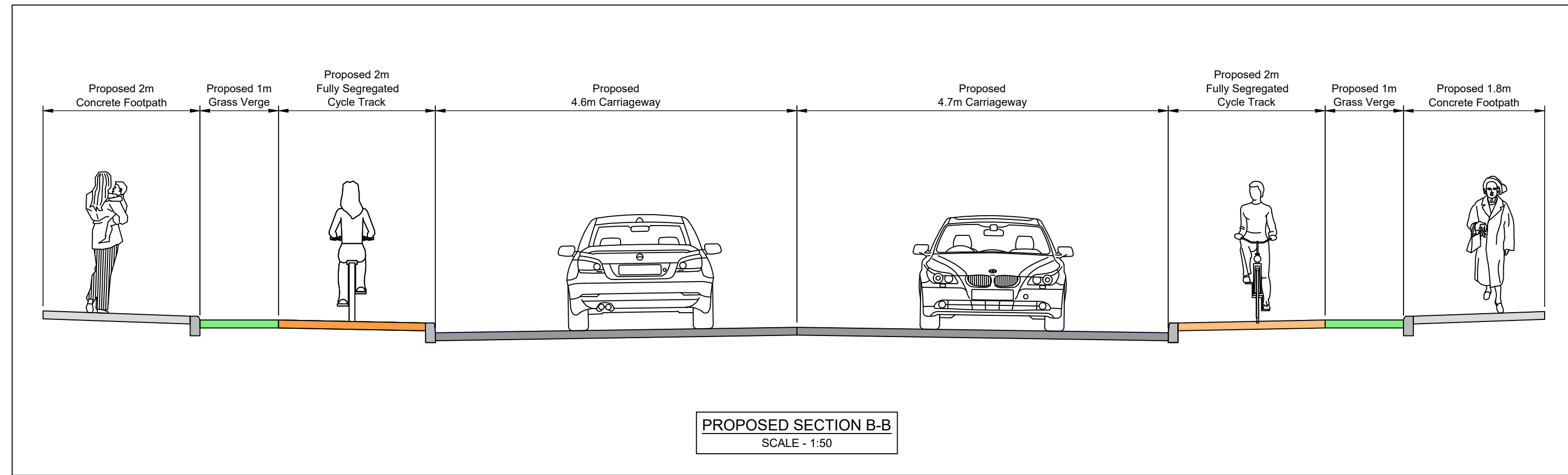


Revision	Description	Initials	Date

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Client	Fingal County Council		
Project	Fingal Active Travel Projects Seatown Road to Estuary Road Roundabout		
Dwg. Title	Option C - Concept Layout Layout 1 of 3		
Drawn By	SP	Date	MARCH 2023
Checked by	MC	Scale	1:500 @ A1
Dwg. Progress	Information		
Dwg. No.	22_110E-CSE-GEN-XX-DR-C-1013		



LEGEND

- Existing Kerblines ---
- Proposed 125mm High Kerblines ---
- Proposed 50mm Kerb between Cycle Track and Footpath ---
- Proposed Kassel Kerb at Bus Stop ---
- Proposed Cycle Ramp ▭
- Proposed Bus Shelter ▭
- Proposed Carriageway Resurfacing ▭
- Proposed Concrete Footpath ▭
- Proposed Cycle Track ▭
- Proposed Cycle Lane - - -
- Proposed Traffic Calming Ramp ▭

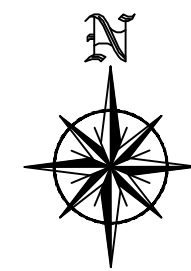
Revision	Description	Initials	Date

Clifton Scannell Emerson Associates

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Dun Laoghaire, Co. Dublin,
Ireland, A96 KW29

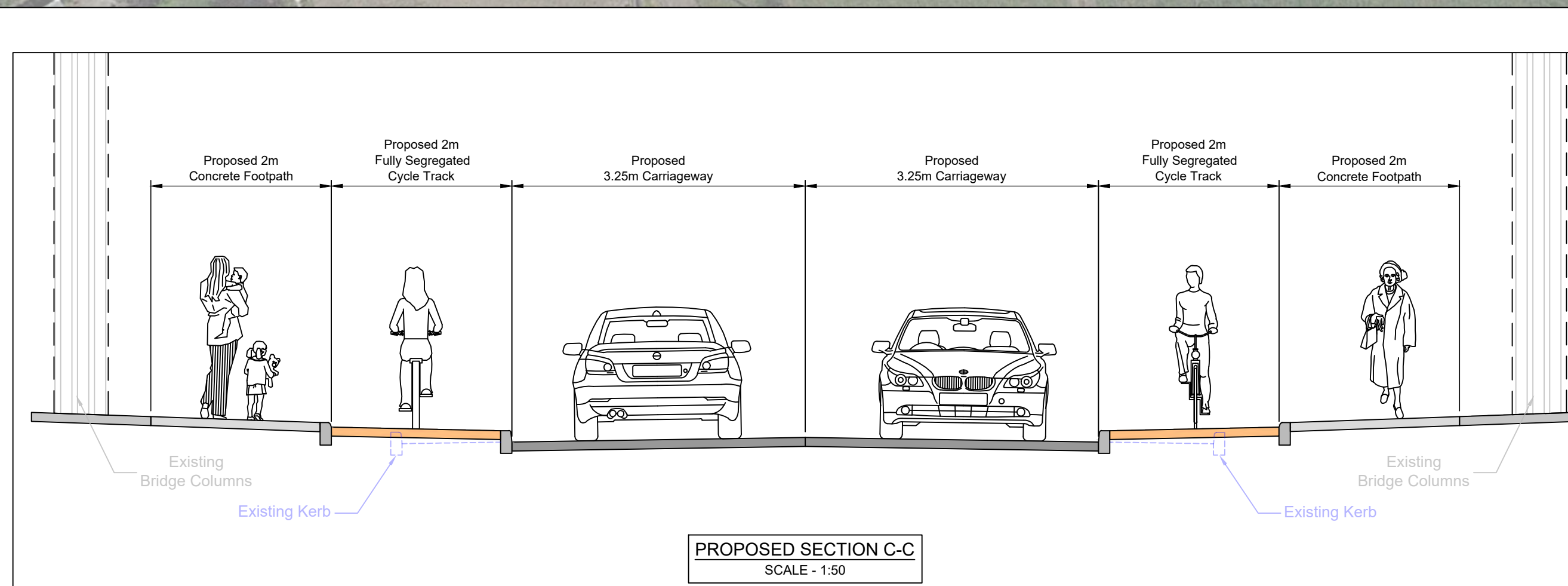
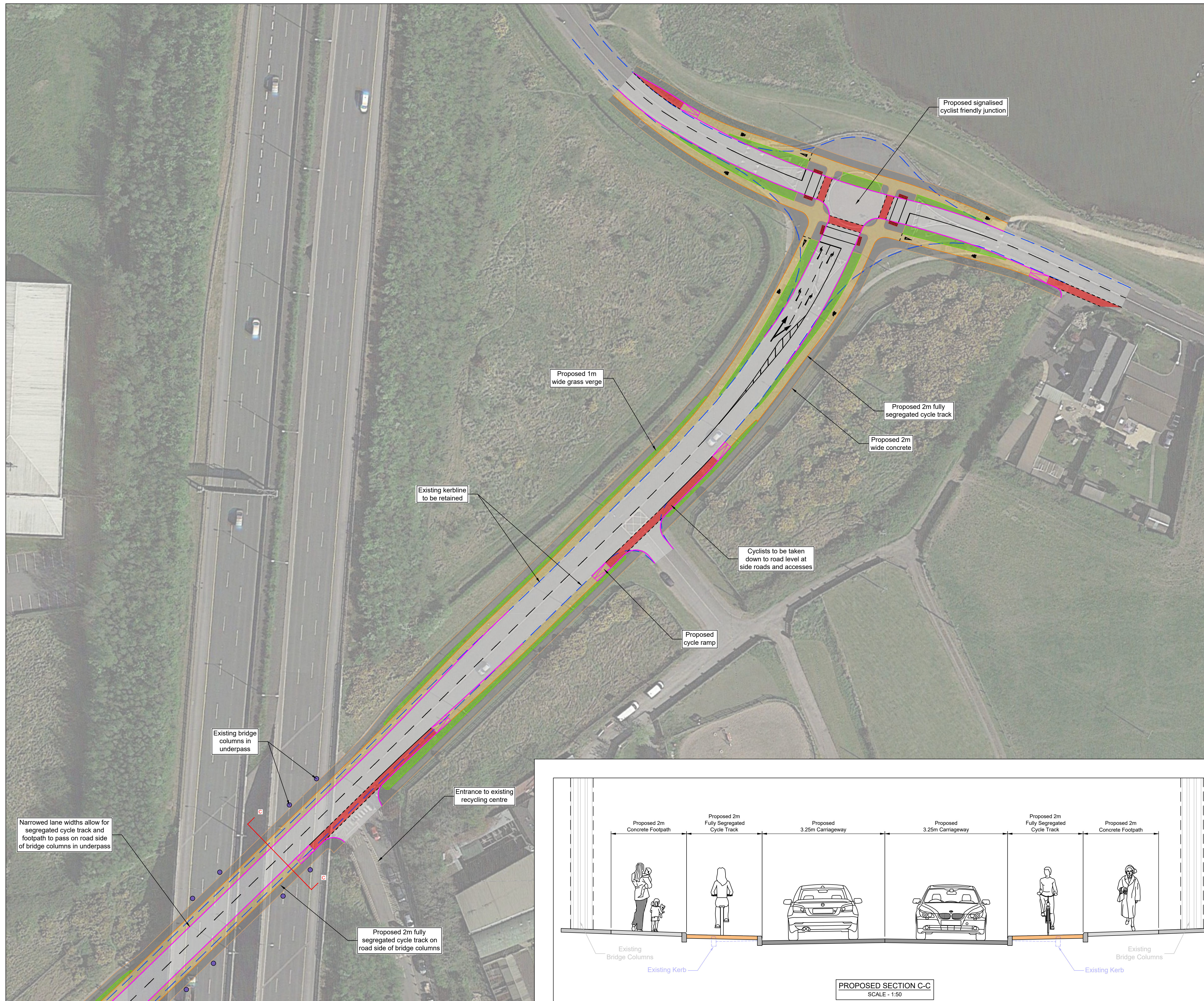
T. +353 1 288 5006
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W. www.csea.ie

Client	Fingal County Council		
Project	Fingal Active Travel Projects Seatown Road to Estuary Road Roundabout		
Dwg. Title	Option C - Concept Layout Layout 2 of 3		
Drawn By	SP	Date	MARCH 2023
Checked by	MC	Scale	1:500 @ A1
Dwg. Progress	Information		
Dwg. No.	22_110E-CSE-GEN-XX-DR-C-1014		



LEGEND

- Existing Kerbline ---
- Proposed 125mm High Kerbline ---
- Proposed 50mm Kerb between Cycle Track and Footpath ---
- Proposed Kassel Kerb at Bus Stop ---
- Proposed Cycle Ramp ▭
- Proposed Bus Shelter ▭
- Proposed Carriageway Resurfacing ▭
- Proposed Concrete Footpath ▭
- Proposed Cycle Track ▭
- Proposed Cycle Lane ▭
- Proposed Traffic Calming Ramp ▭



Revision	Description	Initials	Date

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Ireland, A96 KW29

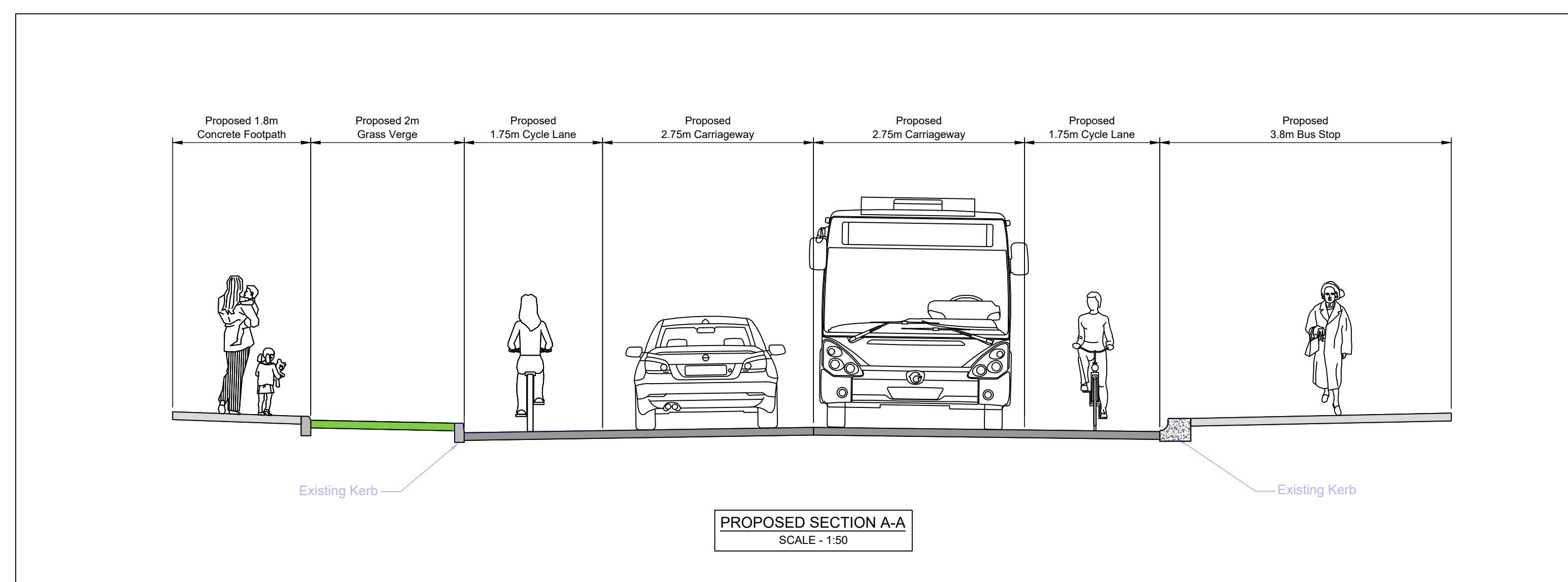
T. +353 1 288 5006
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Client	Fingal County Council		
Project	Fingal Active Travel Projects Seatown Road to Estuary Road Roundabout		
Dwg. Title	Option C - Concept Layout Layout 3 of 3		
Drawn By	SP	Date	MARCH 2023
Checked by	MC	Scale	1:500 @ A1
Dwg. Progress	Information		
Dwg. No.	22_110E-CSE-GEN-XX-DR-C-1015		



LEGEND

- Existing Kerbline ---
- Proposed 125mm High Kerbline —
- Proposed 50mm Kerb between Cycle Track and Footpath —
- Proposed Kassel Kerb at Bus Stop —
- Proposed Cycle Ramp ▭
- Proposed Bus Shelter ▭
- Proposed Carriageway Resurfacing ▭
- Proposed Concrete Footpath ▭
- Proposed Cycle Track ▭
- Proposed Cycle Lane ---
- Proposed Traffic Calming Ramp ▭

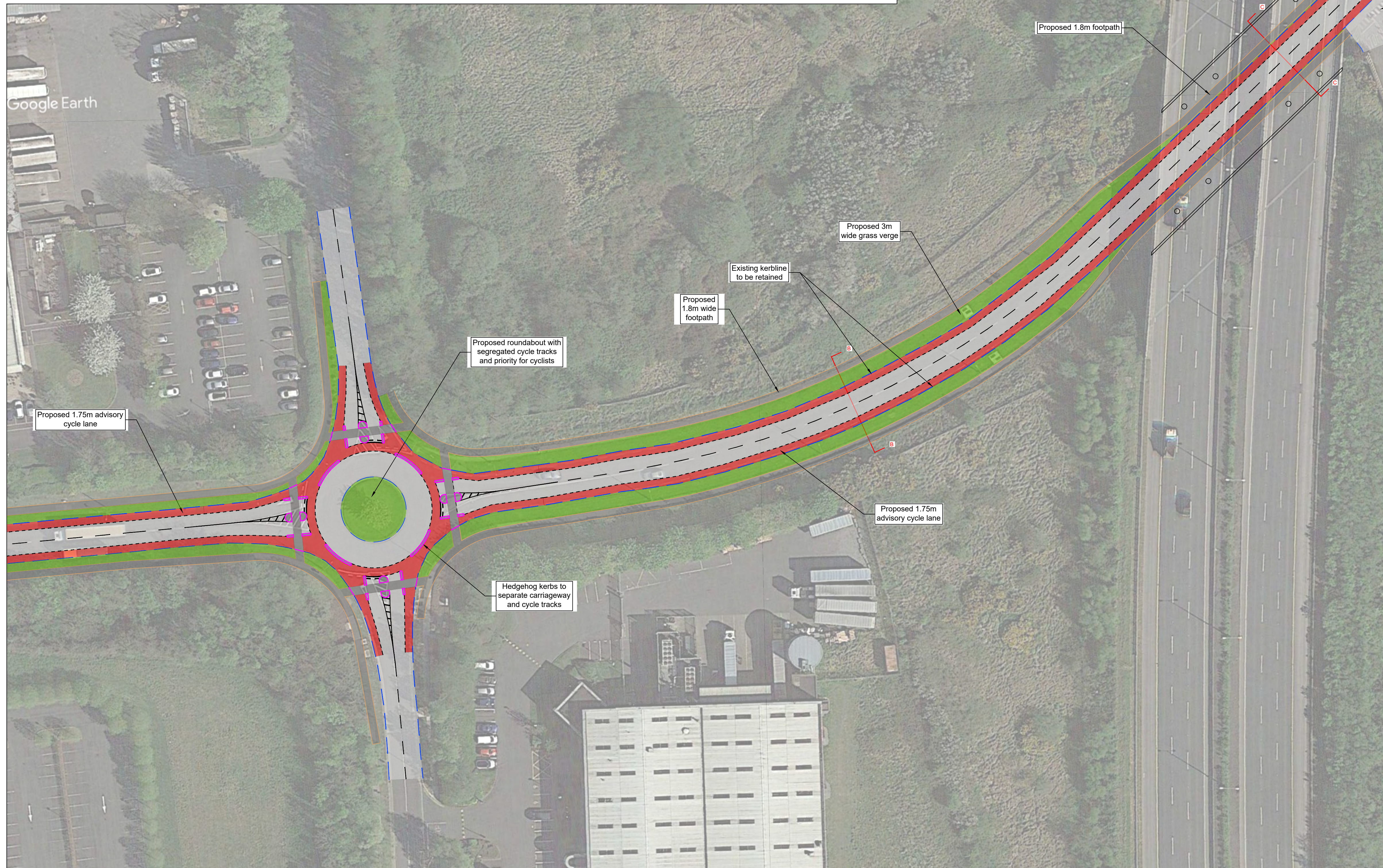
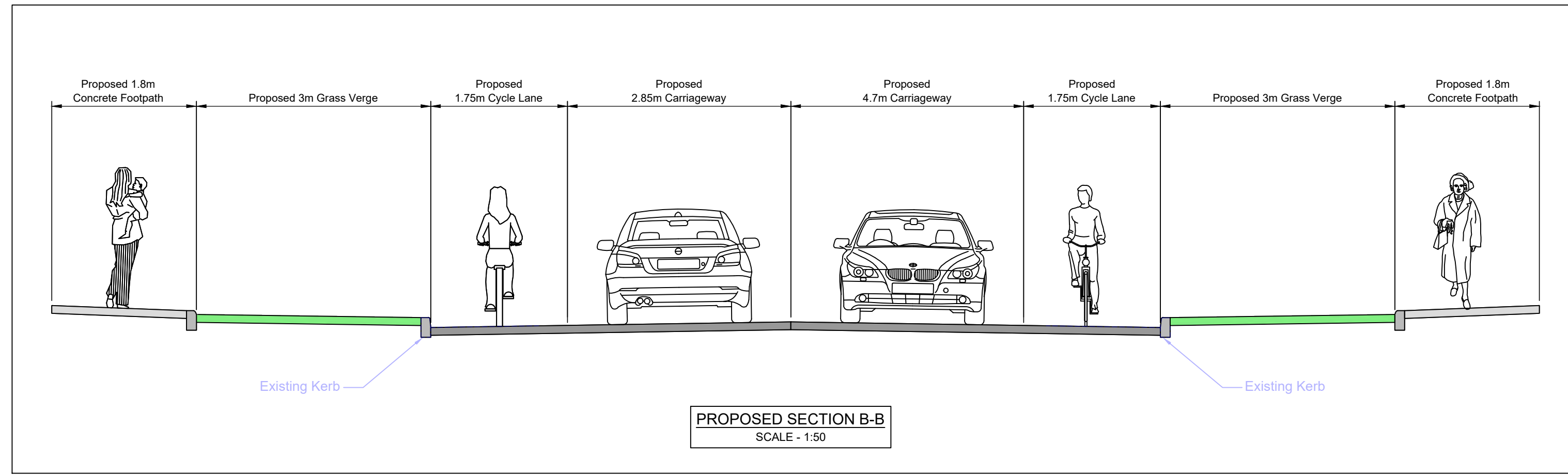


Revision	Description	Initials	Date

Clifton Scannell Emerson Associates

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Client	Fingal County Council		
Project	Fingal Active Travel Projects Seatown Road to Estuary Road Roundabout		
Dwg. Title	Do-Minimum Option - Concept Layout Layout 1 of 3		
Drawn By	SP	Date	MARCH 2023
Checked by	MC	Scale	1:500 @ A1
Dwg. Progress	Information		
Dwg. No.	22_110E-CSE-GEN-XX-DR-C-1001		



LEGEND

- Existing Kerblines
- Proposed 125mm High Kerblines
- Proposed 50mm Kerb between Cycle Track and Footpath
- Proposed Kassel Kerb at Bus Stop
- Proposed Cycle Ramp
- Proposed Bus Shelter
- Proposed Carriageway Resurfacing
- Proposed Concrete Footpath
- Proposed Cycle Track
- Proposed Cycle Lane
- Proposed Traffic Calming Ramp

Google Earth

Revision	Description	Initials	Date



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Ireland, A96 KW23

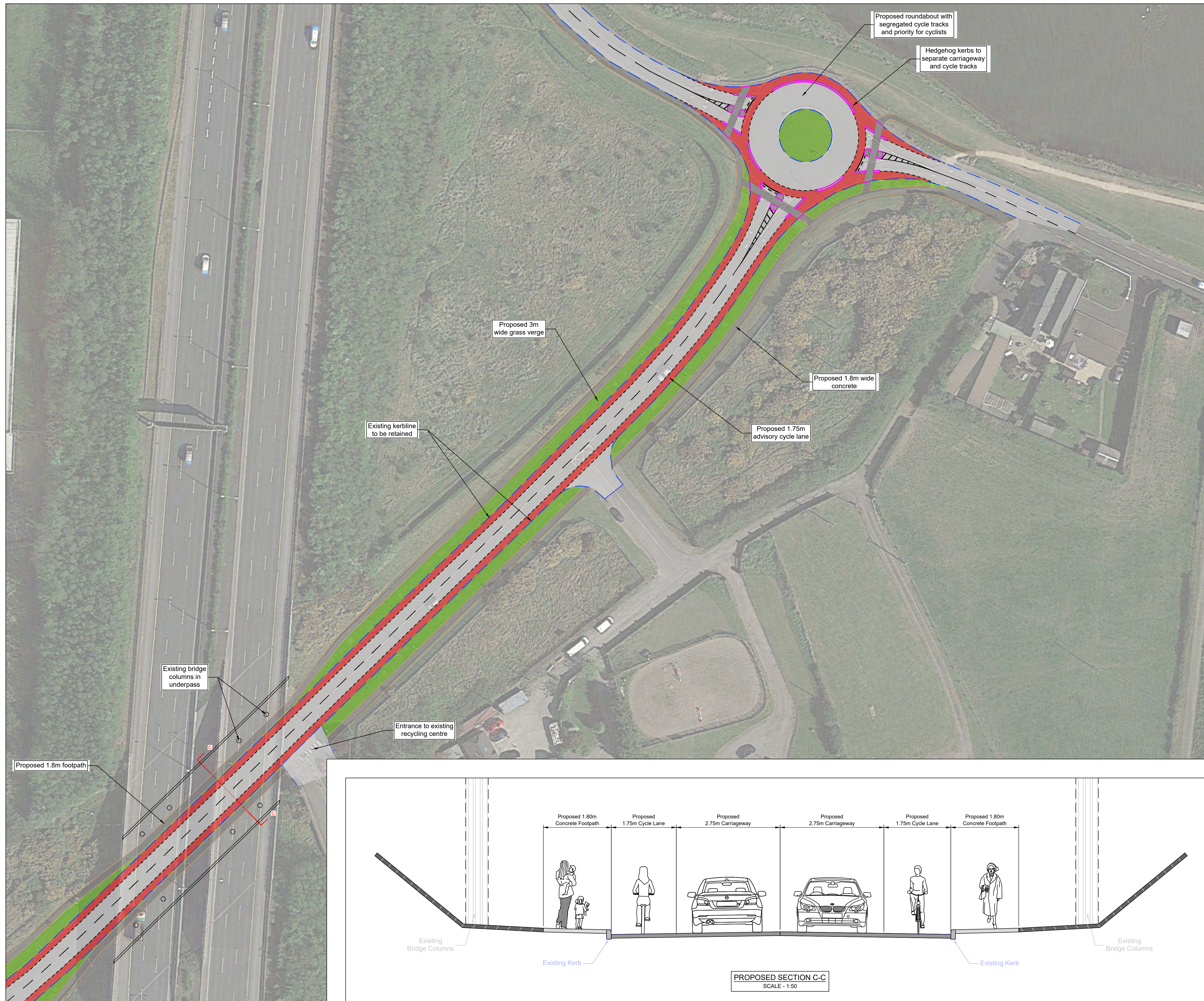
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Client	Fingal County Council		
Project	Fingal Active Travel Projects Seatown Road to Estuary Road Roundabout		
Dwg. Title	Do-Minimum Option - Concept Layout Layout 2 of 3		
Drawn By	SP	Date	MARCH 2023
Checked by	MC	Scale	1:500 @ A1
Dwg. Progress	Information		
Dwg. No.	22_110E-CSE-GEN-XX-DR-C-1002		



LEGEND

- Existing Kerbline ---
- Proposed 125mm High Kerbline ---
- Proposed 50mm Kerb between Cycle Track and Footpath ---
- Proposed Kassel Kerb at Bus Stop ---
- Proposed Cycle Ramp ▭
- Proposed Bus Shelter ▭
- Proposed Carriageway Resurfacing ▭
- Proposed Concrete Footpath ▭
- Proposed Cycle Track ▭
- Proposed Cycle Lane ---
- Proposed Traffic Calming Ramp ▭



Revision	Description	Initials	Date

Clifton Scannell Emerson Associates

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Client: **Fingal County Council**

Project: **Fingal Active Travel Projects**
Seatown Road to Estuary Road Roundabout

Dwg. Title: **Do-Minimum Option - Concept Layout**
Layout 3 of 3

Drawn By: **SP** Date: **MARCH 2023**

Checked by: **MC** Scale: **1:500 @ A1**

Dwg. Progress: **Information**

Dwg. No.: **22_110E-CSE-GEN-XX-DR-C-1003**

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