

Report to Inform Appropriate Assessment Screening

Greystones Pathfinder Project

R774 Charlesland Dual Carriageway Junction Improvement Works

Five Roundabouts

August 2023

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1 INTRODUCTION

Deborah D'Arcy was commissioned by Wicklow County Council to carry out an Appropriate Assessment Screening under Article 6(3) of the EU Habitats Directive in relation to the junction improvement works on the R774 between Greystones, Co. Wicklow, hereinafter referred to as the 'Proposed Scheme'.

This report contains information to inform the competent authority, Wicklow County Council, to undertake Stage 1 Appropriate Assessment screening in respect of the project. The report makes reference to the design plans and reports pertaining to the project and should be read in conjunction with those plans and reports. The evaluation and assessment conclusion are determined based on the project description and detail provided by Wicklow County Council.

1.1 Need for the Proposed Scheme

The settlement of Greystones is located along Ireland's east coast, to the north of County Wicklow, approximately 25 kilometres south of Dublin City Centre. Greystones is a coastal town and seaside resort located approximately 7 kilometres south of Bray. Greystones has a population of approximately 18,000 (based on the 2016 census). Greystones has seen substantial residential growth over the past decade with most of this taking place south of the town in Charlesland, which is earmarked for significant additional residential development. Charlesland has a population of over 3,000 people. Generally, Greystones is well served by road infrastructure. Having regard to the high levels of population growth in the area and the large number of new communities, Wicklow County Council (WCC) is conscious that the area would benefit from the introduction of traffic calming and reduction measures, such as pedestrian priority crossings, shared surfaces and cycle parking, as well as the introduction of new pedestrian footpaths and cycling infrastructure. As such, WCC has identified the Wicklow Active Travel Links Project as a priority pathfinder project. The focus of this report is on the junction improvement of 5 no roundabouts on the R774.

1.2 About the Author

This report was authored by Caoife D'Arcy with input and review by Deborah D'Arcy. Caoife D'Arcy is an environmental scientist with a BSc in Planning and Environmental Management and 6 years relevant industry and environmental consultancy experience and is a member of the Chartered Institute of Ecology and Environmental Management, the chief professional body for Ecology and Environmental Management in Ireland and as such bound by the professional code of conduct.

Deborah D'Arcy is an Ecologist with an MSc in Ecological Assessment and 10 years ecological consultancy experience and is an Associate Member of the Chartered Institute of Ecology and Environmental Management, the chief professional body for Ecologists in Ireland and as such is bound by their professional code of conduct.

1.3 Legislative Context

The purpose of the Report to Inform AA screening is to determine, on the basis of a preliminary assessment and objective criteria, whether a plan or project, alone and in combination with other plans or projects, could have significant negative effects on a Natura 2000 site in view of the site's conservation objectives. The need to apply the precautionary principle in making any key decisions in relation to the tests of AA has been confirmed by European Court of Justice case law. Therefore, where significant effects are likely, uncertain or unknown at screening stage, AA will be required. Stage 1 Screening for AA is undertaken without the consideration of any mitigation measures, unless potential impacts can be clearly avoided through modification or re-design of the project (DoEHLG, 2010). If significant effects on Natura sites cannot be ruled out, then a Stage 2 Appropriate Assessment and Natura Impact Statement is required.

The Natura 2000 network provides an ecological infrastructure for the protection of sites that are of particular importance for rare, endangered or vulnerable habitats and species within the EU. The Natura 2000 network in Ireland is made up of European Sites which include:

- Special Areas of Conservation (**SAC**)

- Special Protection Areas (SPA)

This report has been compiled in accordance with Article 6(3) of the Habitats Directive 92/43/EEC which establishes the requirement for Appropriate Assessment. The Habitats Directive is transposed into Irish Law by the European Communities Natural Habitats Regulations S.I. No. 477 of 2011.

Article 6(3) "Any plan or project not directly connected with or necessary to the management of the site but likely to have a significant effect thereon, either individually or in combination with other plans or projects, shall be subject to appropriate assessment of its implications for the site in view of the site's conservation objectives. In the light of the conclusions of the assessment of the implications for the site and subject to the provisions of paragraph 4, the competent national authorities shall agree to the plan or project only after having ascertained that it will not adversely affect the integrity of the site concerned and, if appropriate, after having obtained the opinion of the general public."

These requirements are implemented in the Republic of Ireland by the European Communities (Birds and Natural Habitats) Regulations 2011, as amended and by Part XAB of the Planning and Development Act 2000, as amended. The legislative provisions for AA screening for planning applications are set out in Section 177U of the Planning and Development Act 2000.

1.4 Methodology

Appropriate Assessment is an assessment of the potential for adverse or negative effects of a plan or project, in combination with other plans or projects, on the conservation objectives of a European Site. Screening is the process that addresses and records the reasoning and conclusions in relation to the first two tests of Article 6(3):

- (1) *whether a plan or project is directly connected to or necessary for the management of the site, and*
- (2) *whether a plan or project, alone or in combination with other plans and projects, is likely to have significant effects on a Natura 2000 site in view of its conservation objectives.*

Screening results in a determination for each European site regarding the significance of effects, categorised as not significant, significant, potentially significant, or uncertain. If the latter three determinations are made, the site will proceed to Stage 2 Appropriate Assessment. The stages of Appropriate Assessment are shown in **Table 1.1**.

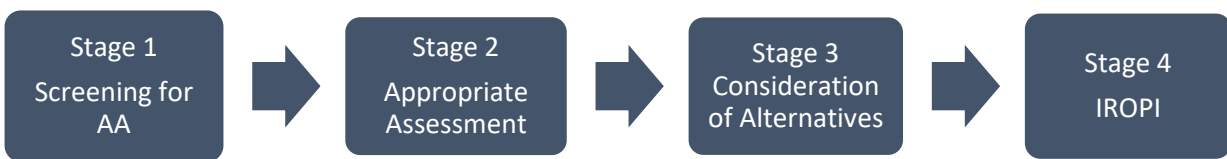


Table 1.1 Stages of Appropriate Assessment

Table 1.2 outlines the process of this report to inform screening for Appropriate Assessment. A standard source-receptor-pathway conceptual model is used to identify a preliminary list of ‘relevant’ European sites (i.e. those which could be potentially affected due to connectivity via impact pathways). This conceptual model is a commonly used tool in environmental assessment. For an effect to occur, all three elements of this mechanism must be present. If any element is absent or removed, the likelihood of the effect occurring diminishes. In the context of the proposed scheme, the model includes the following components:

Source: Characteristics of the proposed scheme such as the nature, size and location and the type of impacts that has the potential to impact on a European site.

Pathway: Existence and characteristics of pathways that could link European sites and their Qualifying Interests to the proposed scheme. These pathways may be terrestrial, hydrological, hydrogeological or via air.

Receptor: the location, nature and sensitivities of the qualifying species and habitats, the ecological conditions underpinning their survival and the conservation objectives specified to maintain or restore favourable conservation status.

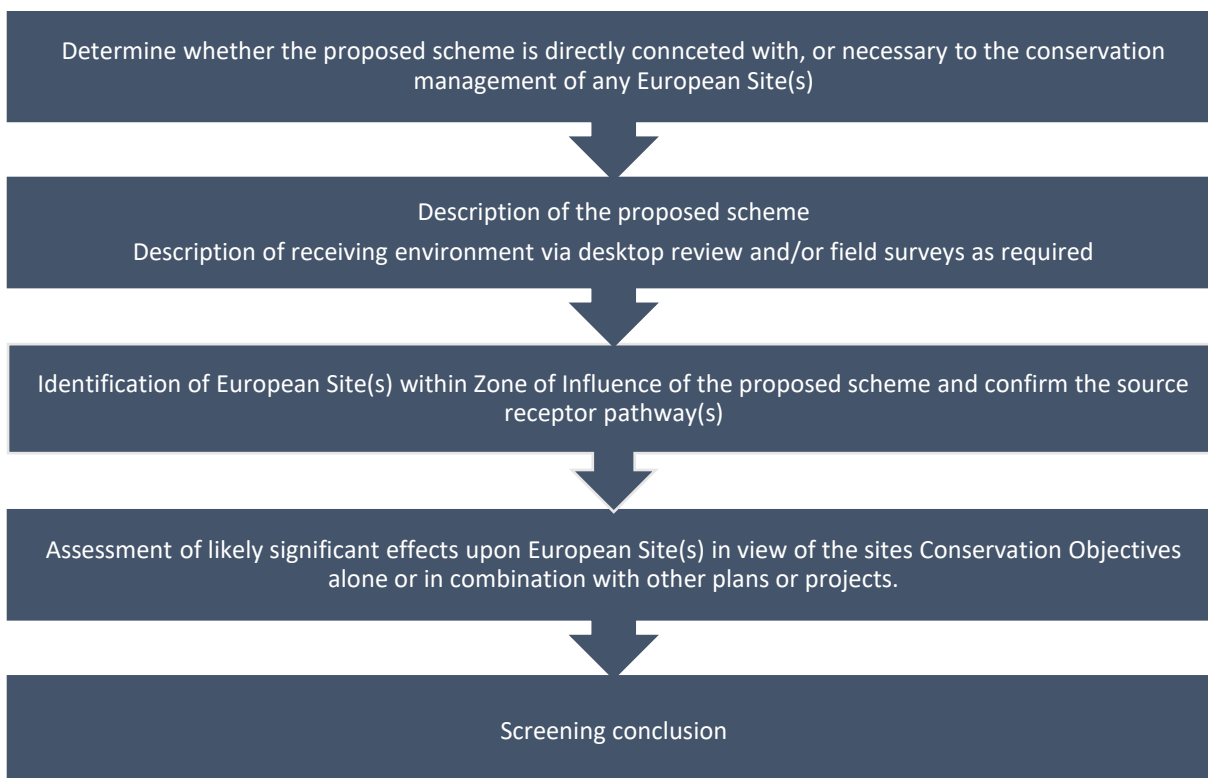


Table 1.2 Process to inform Screening for AA

1.4.1 Determining the Zone of Influence

The OPR Guidance specify the application of a Source-Pathway-Receptor (S-P-R) model to all stages of the proposed scheme with reference to the nature, size and location of the project, and the sensitivities of the ecological receptors, and the potential for in combination effects. Taking account of the most recent guidance published by the OPR (2021), the zone of influence of the proposed scheme is evaluated with regard to the scale of impacts of the proposal and identification of connectivity pathways to any European Sites.

The AA of Plans and Projects in Ireland - Guidance for Planning Authorities (Department of Environment, Heritage and Local Government, 2010 revision applies a 15km zone of influence. However, the distance could be less or more than 15km. Given the scale and nature of the proposed scheme, a distance of 5km is initially applied.

1.4.2 Defining Likely Significant Effects

The key test in AA screening is to determine any likelihood of significant effects on European sites. Once the relevant European sites have been identified, this test must be applied. In this context, ‘likely’ refers to a risk or possibility of effects occurring that cannot be ruled out based on objective information. Significant effects refer to those that would undermine the conservation objectives of the European sites, either alone or in-combination with other plans and projects. Ultimately, the determination of ‘significance’ relies on the assessment of scientific information. However, if the consideration of significance becomes overly complex (i.e. with multiple factors involved), it serves as an indication of existing uncertainty and the need for Stage 2 Appropriate Assessment. Any conclusion starting the absence of likely significant effects must be reached without taking account of mitigation measures.

1.5 Guidelines

The following guidelines have been used in the compilation of this report:

- Appropriate Assessment of Plans and Projects in Ireland. Guidelines for Planning Authorities. DoEHLG, 2010.
- Appropriate Assessment Screening for Development Management: OPR Practice Note PN01. Office of the Planning Regulator, 2021.
- Circular NPWS 1/10 & PSSP 2/10 Appropriate Assessment under Article 6 of the Habitats Directive: Guidance for Planning Authorities
- Managing Natura 2000 sites – The Provisions of Article 6 of The Habitats Directive 92/43/EEC. European Commission, 2000.
- Assessment of plans and projects in relation to Natura 2000 sites – Methodological guidance on the provisions of Article 6(3) and (4) of the Habitats Directive 92/43/EEC (C437/01). European Commission, 2021.
- Assessment of Plans and Projects Significantly Affecting Natura 2000 sites. Methodological Guidance on the Provisions of Article 6(3) and (4) of the Habitats Directive 92/43/EEC. European Commission, 2002.
- Managing Natura 2000 Sites: the provisions of Article 6 of the ‘Habitats’ Directive 92/43/EEC, Office for Official Publications of the European Communities, Luxembourg (EC 2018).
- Article 6 of the Habitats Directive. Rulings of the European Court of Justice. Final draft September 2014.
- CIEEM (2018) Guidelines for Ecological Impact Assessment in the UK and Ireland: Terrestrial, Freshwater, Coastal and Marine. Chartered Institute of Ecology and Environmental Management, Winchester.

1.6 Desktop Review

A desktop review was undertaken to gather baseline ecological information for the study area and assess the potential for any Qualifying Interests (QI) /Special Conservation Interests (SCIs) of European sites to occur. Particular attention was paid to evaluating any potential ecological or hydrological linkage with European sites. The following sources were consulted to conduct the desktop review.

- Environmental Protection Agency (EPA) online mapping tools (<https://gis.epa.ie/EPAMaps>) and <https://gis.epa.ie/EPAMaps/Water>;
- EPA data resources for latest information regarding soils, geology, air quality, land use, water quality and licenced facilities (<https://gis.epa.ie/GetData/Download>);
- Bird Watch Ireland for bird habitat requirements and food preferences (<https://birdwatchireland.ie/>);
- National Parks and Wildlife Service (NPWS) for Conservation Objective, Site Synopsis and any other relevant reporting for European Sites (<https://www.npws.ie/protected-sites>);
- National Parks and Wildlife Service (NPWS) and data resources for the latest European site boundaries and relevant species and habitat mapping (<https://www.npws.ie/maps-and-data>);
- *The Status of EU Protected Habitats and Species in Ireland*, (Department of Culture, Heritage and the Gaeltacht, 2019);
- National Biodiversity Data Centre (NBDC) online mapping tool for Qis, SCIs, protected species and invasive species (<https://maps.biodiversityireland.ie/>);
- Geological Survey Ireland mapping tools (<https://www.gsi.ie/en-ie/data-and-maps/>);
- Geohive online sensitivity mapping (<https://airomaps.geohive.ie/ESM/>).

1.7 Field Survey

This report was informed by a walkover survey carried out on the 23rd May 2023. Habitats were classified according to *A Guide to Habitats in Ireland* (Fossitt, 2000). The survey focused on the potential for Annex habitats or species to occur, the presence of other species protected under the Wildlife Act 1976, as amended, as well

as the presence of invasive species. Invasive species were noted. The extent and condition of infestation was recorded. The presence of terrestrial mammals was determined by noting signs of activity or resting places noted.

1.7.1 Difficulties encountered compiling the report

Difficulties were not encountered in the compilation of this report. General assumptions have been made during preparation of the report are set out below:

- Relevant information has been obtained from publicly available sources and mapping databases such as the EPA, NPWS, GSI, OPW, etc. It has been assumed that the information is correct and while reasonable care and skill has been applied in review of this data no responsibility can be accepted for inaccuracies in the data supplied.

2 DESCRIPTION OF THE PROPOSED SCHEME

2.1 Site Location

The proposed scheme is within the footprint of the R774 Charlesland dual carriageway road corridor, cycleway and footpaths. This route provides a link between the southern part of Greystones and north of Kilcoole. The proposed scheme starts to the north towards Greystones at the Milltown Roundabout (Roundabout 1). It then progresses southward at the following existing roundabouts: Kilfernoc Roundabout (Roundabout 2), The Glen Roundabout (Roundabout 3), Ballynerrin Roundabout (Roundabout 4). The proposed scheme concludes at Knockroe Roundabout (Roundabout 5). Works are not proposed along the carriageway between the roundabouts or the Winnowbank Roundabout, c. 365m from Milltown Roundabout (Roundabout 1).



Figure 2.1 Site Location

2.2 Proposed Scheme

The proposed works includes the upgrade of the existing junctions at the five roundabouts identified to better accommodate cyclists and pedestrians, using rapid build measures where possible. The proposed scheme footprint is narrow, and within the confines of the R774 road corridor with some sections requiring extension into existing footpaths and grassy verges. The proposed upgrade will involve the installation of toucan crossings and a combination of other infrastructure upgrades to promote active travel, improve traffic flow and create a more accessible pedestrian and cyclist-friendly environment for all road users. Works are not proposed on the carriageway between these roundabouts.

The site clearance may involve removal of several trees, bushes and flower beds at these existing junctions. Areas of the proposed junctions have been identified to provide pollinator friendly vegetation to offset any vegetation loss along the proposed scheme. No additional lighting is proposed.

The proposed scheme is shown in **Figure 2.2**. Detailed drawings of the proposed scheme are included in **Appendix A**.

The main infrastructural elements to be included on the 5 no. roundabouts in the proposed scheme comprise the following:

- Site and vegetation clearance including c. 20 no semi-mature trees;
- Provision of toucan crossings: Strategically placed at key entry and exit points of the roundabouts to facilitate safe and efficient crossings for both pedestrians and cyclists. High friction surfacing will be applied in advance of the toucan crossings to improve grip for pedestrians and cyclists, and road users especially during adverse weather conditions. This measure will enhance overall safety and reduce the risk of accidents.
- Footpaths and cycle lanes: the provision of well-defined footpaths and dedicated bike lanes around the roundabouts. This separation of pedestrian and cyclist paths from vehicular traffic will ensure the safety of vulnerable road users and encourage active modes of transportation.
- Shared Footpath and Cycleways: Certain sections of the roundabouts will feature shared footpath and cycleways to promote a sense of shared space and encourage more sustainable travel options.
- Tactile paving and corduroy pavement: Installed at pedestrian crossings to assist visually impaired individuals, providing tactile cues for safe navigation. Corduroy pavement will also be used to signal crossing points and encourage adherence to pedestrian pathways.
- Uncontrolled crossings to be provided and retained: In selected areas, uncontrolled crossings will be introduced and retained to offer more direct and flexible crossing options for pedestrians and cyclists. These crossings will prioritise the safety of users while promoting a seamless flow of non-motorised traffic.
- Speed restriction ramps: Strategically installed on approach to the roundabouts to calm vehicular traffic and reduce speeds. Slower traffic will increase safety for all road users and enhance the effectiveness of toucan crossings.
- Widened central island: Where feasible, the central island will be widened to provide a safe waiting area for pedestrians and cyclists. This additional space will ensure improved visibility for all road users.
- Uncontrolled crossing on raised table: Implemented at specific locations within the roundabouts. This feature will elevate the crossing area, providing better visibility for all road users and encouraging slower vehicle speeds.
- Flexible bollards: Strategically placed around the roundabout to separate vehicular lanes from pedestrian and cyclist areas. These bollards will serve as physical barriers, ensuring the safety of vulnerable road users and preventing unauthorised vehicle access to pedestrian and cyclist paths.
- Additional road markings: Clear and visible road markings will be added to guide motorists and alert them to the presence of pedestrian and cyclist crossings. This measure will reinforce the importance of yielding to vulnerable road users.
- Other consequential construction works necessary in order to complete the proposed scheme.
- Landscaping and reseeded with low height pollinator friendly flowers and vegetation.

The design of the proposed scheme adheres to the principles, approaches and standards set out in the Design Manual for Urban Roads and Streets [DMURS], and also the National Cycle Manual [NCM].

2.2.1 Surface Water Management

The proposed scheme will not need any modifications to the current road drainage system. Additionally, it will not involve a significant increase the amount of hard surface, which could lead to a higher risk of flooding in other areas.

2.2.2 Utilities

Underground utilities such as gas, watermains and overhead utilities will be retained and remain unaffected by the proposed scheme.



Figure 2.2 Proposed Scheme

2.3 Construction Phase

It is expected that the construction works to the proposed scheme will be carried out in a single phase in 2023. It is proposed to use rapid build techniques, where possible. The total construction time accounting for site clearance, road assessment and preparation for the modification of the road surface, as well finishing in and tying in will take in the order of 3 months. Prior to commencement of works, the site compound will be set up and traffic management measures will be put in place.

The main construction elements of this proposed scheme will include:

- Establishment of the site compound;
- Establishment of appropriate traffic control measures to provide adequate separation and protection of work areas from live traffic on R774;
- Mobilisation of construction plant;
- Site clearance and preparations;
- Excavation of footpath tie ins;
- Application of high friction surfacing;
- Spreading and levelling;
- Aggregate application;
- Compaction and curing;
- Installation of traffic bollards;
- In-situ installation of tactile paving in line with relevant accessibility standards and regulations;
- Landscaping, as required
- Final inspection and quality control.

Working Hours

The proposed scheme can be characterised by a single phase although the duration is not yet confirmed. The proposed operating hours for the proposed scheme are as follows:

- 07:00 hrs – 18:00 hrs Monday to Friday;
- 07:00 hrs – 14:00 hrs Saturdays; and
- Site closed on Sundays / Public Holidays.

2.4 Operation Phase

The operational phase will coincide with the end of construction and the commissioning of the proposed scheme. Maintenance will be undertaken as required by Wicklow County Council Roads Department and would likely include path clearing, and landscaping etc.

3 Description of the Receiving Environment

The following section details the results from the desktop review and site survey which are used to inform the assessment of the likely significant effects upon European sites.

3.1 Objectives and Zoning

The following Wicklow County Development Plan 2022-2028 policy objectives are relevant to the proposed scheme:

CPO 12.14 To facilitate the implementation of local projects which support pedestrian and cyclist permeability, safety and access to schools and public transport.

CPO 12.34 The design of new roads or improvements to existing local roads and new means of access onto roads shall generally comply with the guidance set out in the 'Design Manual for Roads & Bridges' Wicklow County Development Plan 2022-2028 Chapter 12 | Sustainable Transportation DMRB (TII), the 'Design Manual for Urban Roads and Streets' DMURS (DTTA-DHPLG), the 'Traffic Management Guidelines' (DoT-DoELG-DTO) and 'Recommendations for Site Development Works for Housing Areas' (DoELG) as appropriate. as may be amended and revised, unless local conditions determine otherwise.

CPO 12.50 To provide new and improve existing roads in urban areas in accordance with objectives identified in local area, town and settlement plans.

CPO 12.67 All roadside signage shall have regard to the guidance provided in the Traffic Signs Manual with particular reference to the design, siting and structural requirements

Greystones/Delgany and Kilcoole Local Area Plan (LAP) 2013-2019 (lifetime extended) roads and transportation objectives relevant to the proposed scheme include:

TS7: Promote the development of safe and accessible pedestrian and traffic routes.

TS9: To facilitate the introduction of traffic management, calming and reduction measures throughout the plan area.

The area surrounding the proposed scheme is zoned as follows:

E1 Zone 1: Employment To promote and facilitate the development of lands zoned for employment development

CE: To provide for civic, community, institutional, health, educational facilities and burial grounds.

E1Zone 2To provide for a mix of employment creating development, in accordance with objective EMP4 for this area.

E: To provide for economic development, enterprise, industry, distribution, warehousing and employment with the exception of lands zoned E in Killincarrig townland, where retail warehousing shall not be permitted

AOS: Active Open Space: To provide for active recreational open space.

RE: Existing Residential: To protect, provide for and improve residential amenities of adjoining properties and areas while allowing for infill residential development that reflects the established character of the area in which it is located.

R22: Residential To provide for the development of sustainable residential communities up to a maximum density of 22 units per hectare and to preserve and protect residential amenity.

OS: Open Space: To preserve, provide for and improve public and private open space for recreational amenity and passive open space.

NC: Neighbourhood Centre: To protect, provide for, and improve a mix of neighbourhood centre services and facilities, which provide for the day-to-day needs of the local community.

AP7: Action Plan 7: 10.8 AP7: CHARLESLAND ACTION PLAN This action plan is located at Charlesland, on a site approximately 29ha in size. This area shall be developed for a mix of uses including residential, employment and schools

3.2 Habitats

The proposed scheme is within the footprint of the R774 Charlesland Dual Carriageway road corridor, cycleway and footpaths which is characterised by artificial surfaces (BL3). The edges and the central islands of the existing roundabouts are characterised by grassy verges (GS2), flower beds and borders (BC4) and treelines (WL2). The habitat types identified along and adjacent to the proposed scheme are identified in **Error! Reference source not found.** and Figure 3.1.

Table 3.1 Habitat types identified within and adjacent to the proposed scheme boundary

Habitat	Fossitt Code	Description
Buildings and other artificial surfaces	BL3	The proposed scheme is within the R774 road corridor which is characterised by artificial surfaces of tarmac and concrete. The areas surrounding the proposed scheme comprise of buildings and artificial surfaces with commercial premises and residential housing.
Amenity grassland	GA2	Amenity grassland borders the road corridor. This is mown short and dominated by grass species.
Dry meadows and Grassy verges	GS2	Grassy verges occur along some sections of the road corridor and in the central islands of the existing roundabouts. These had recently been mown. They are dominated by grass species with occasional herbs species such as creeping buttercup, common hogweed and common knapweed.
Flower beds and borders	BC4	Flower beds feature in the central islands and originate from planting. They include the scattered trees. Trees at the existing junctions are primarily silver birch (<i>Betula pendula</i>) and other non-native tree species include cordyline (<i>Cordyline</i> spp). A high proportion of the species observed are perennials including daisies (<i>Bellis perennis</i>), Aster (<i>Asteraceae</i> spp), <i>Erigeron</i> spp, non-native species including <i>Agapanthas</i> spp. The flower beds and borders habitats are scheduled for removal as part of the proposed scheme.
Treelines	WL2	Treelines feature along the carriageway between the 5 no. identified roundabouts. The treelines along the carriageway between the 5-no. roundabout will remain entirely unaffected by the proposed scheme.



Figure 3.1 Flower beds and Borders (BL3) at the existing junctions on the R774

3.3 Surface water

The proposed scheme lies within the Ovoca-Vartry catchment (WFD 10) and the Newcastle [Wicklow] sub-catchment (Newcastle [Wicklow]_SC_010). The Three Trout’s Stream_010 (IE_EA_10T030580) intersects the R774 carriageway approximately 881m from the start (Roundabout 1) of the proposed scheme. The stream is culverted under the carriageway. This stream flows in a west-east direction and flows 1.9km where it meets the Southwestern Irish Sea - Killiney Bay (HA10) (IE_EA_100_0000). The third cycle (2016-2021) Water Framework Directive (WFD) river water body status for this stream is ‘Good’ and ‘Not at risk’. The WFD coastal waterbody status is ‘Good’ and ‘Not at risk’. Importantly, the proposed construction won't occur in the area of the proposed scheme. The stream will remain unaffected by the proposed scheme.

The Kilcoole Stream_010 is c. 1.2km south of Roundabout 5. This stream flows in a west-east direction and outfalls to the Irish Sea – Killiney Bay (HA10) c. 3.5km downstream. This stream is hydrologically connected to The Murrough SAC, The Murrough SPA and Murrough pNHA. The third cycle (2016-2021) Water Framework Directive (WFD) river water body status for this stream is ‘Poor’ and ‘At risk’. This stream is crossed by the R774 1.6 km west of roundabout 5 and therefore is not considered to be within the zone of influence of the construction works.

3.4 Geology and Hydrogeology

According to GSI online mapping, the underlying bedrock is greywacke and quartzite of the Bray Head Formation. Quaternary sediments across the proposed scheme include Mbs Marine deposits, sandy beach/raised sand, Sand and Gravels GLs Sand and Gravels type: Limestone sands and gravels (Carboniferous) and IrSTCSsS: Till type: Sandstone and shale till (Cambrian/Precambrian) with matrix of Irish Sea Basin origin: Clayey: Tills (diamictons). Soils include Clonroche1100a Fine loamy drift with siliceous stones.

The Wicklow (IE_EA_G_076) ground waterbody underlies the proposed scheme. It is generally unproductive bedrock except for local zones. The 3rd cycle groundwater monitoring programme, status is ‘Good’ and ‘At risk’ of failing to achieve WFD status. Agriculture pressures and anthropogenic pressures are identified as a significant pressure to the Wicklow Groundwater body. The area of Greystones is designated for the abstraction of water intended for human consumption under Article 7 of the Water Framework Directive. Abstraction of groundwater is not required. The groundwater vulnerability across the proposed scheme length ranges from low (L) to High (H). Biological Records

National Biodiversity Data Centre (NBDC) for the 2km grid square were extracted and reviewed on 11th August 2023. Records for notable species in the context of this AA screening report have not been recorded. (Notable species include EU Habitats Directive Annex II, Annex IV; Birds Directive Annex I or rare or protected species or invasive species).

3.4.1 Terrestrial Mammals

Terrestrial mammals were not recorded at the proposed scheme. A review of NBDC online mapping revealed records of protected terrestrial mammals. Records for the 2km square (O21V and O20Z) within which the project site lies were extracted from the National Biodiversity Data Centre (NBDC) database on 11th August 2023 and reviewed. There are no species recorded on or adjacent to the site. There is no record of Annex II terrestrial mammal recorded. Other species protected under the Wildlife Act 1976, as amended, include: Eurasian Badger (*Meles meles*), Eurasian Red Squirrel (*Sciurus vulgaris*) and West European Hedgehog (*Erinaceus europaeus*).

3.4.2 Bats

A review of NBDC online mapping for the 2km grid square (O21V and O20Z) shows 21 no. records of bats within 2km of the proposed scheme. The potential for bats has been considered. Bats are not considered relevant to the Conservation Objectives of the sites identified within the potential zone of influence and therefore are not considered further in this AA Screening Report. The potential impact to bats has been addressed within the EIA screening report prepared for the proposed scheme. No significant to bat species is anticipated.

Grid square	Species name	Record count	Date of last record	Title of dataset	Designation
O21V	Brown Long-eared Bat (<i>Plecotus auritus</i>);	2	21/01/2004	National Bat Database of Ireland	Protected Species: EU Habitats Directive Protected Species: EU Habitats Directive >> Annex IV Protected Species: Wildlife Acts
O21V and O20Z	Lesser Noctule (<i>Nyctalus leisleri</i>)	15	22/07/2014	National Bat Database of Ireland	Protected Species: EU Habitats Directive Protected Species: EU Habitats Directive >> Annex IV Protected Species: Wildlife Acts
O21V and O20Z	Soprano Pipistrelle (<i>Pipistrellus pygmaeus</i>) (1) (1)	2	22/07/2014	National Bat Database of Ireland	Protected Species: EU Habitats Directive Protected Species: EU Habitats Directive >> Annex IV Protected Species: Wildlife Acts
O20Z	Pipistrelle (<i>Pipistrellus pipistrellus sensu lato</i>) (2)	2	23/05/2007	National Bat Database of Ireland	Protected Species: EU Habitats Directive Protected Species: EU Habitats Directive >> Annex IV Protected Species: Wildlife Acts

3.4.3 Birds

The nearest European for the protection of birds is the Murrugh SPA (004186) which is c. 2.5 km southeast of the proposed scheme. This SPA is characterised by wetland habitat for the regularly occurring migratory waterbirds species. The proposed scheme is primarily buildings and artificial surfaces with adjacent areas of amenity grassland verges and treelines. This is not considered suitable ex situ habitat for any of the SCI birds.

3.4.4 Invasive Plant Species

A single invasive alien plant species, Butterfly-bush (*Buddleia davidii*), which is not listed on the Third Schedule of the Birds and Habitats Regulations 2011 was noted at the Ballynerrin Roundabout (Roundabout 4). The National Biodiversity Data Centre classify this invasive species as a risk of medium impact.

Third Schedule plant species under the Bird and Habitats Regulations (S.I. 477 of 2011) were not identified along the proposed scheme during the site visit. For the surrounding area, a review of the NBDC online mapping (O20Z) returned 5 no. records of invasive plant species listed as Third Schedule under the Bird and Habitats Regulations (S.I. 477).

Table 3.2 Records of Third Schedule Alien Plant Species and Distance from the Proposed Scheme

Species name	Record count	Date of last record	Title of dataset	Designation	Distance from Proposed scheme
Water Fern (Azolla filiculoides)	2	24/01/2023	Vascular plants: Online Atlas of Vascular Plants 2012 Onwards	Invasive Species: Medium Impact Invasive Species Invasive Species: Invasive Species >> Regulation S.I. 477 (Ireland)	1.00km southwest
Three-cornered Garlic (Allium triquetrum)	4	05/03/2023	Vascular plants: Online Atlas of Vascular Plants 2012 Onwards	Invasive Species: Medium Impact Invasive Species Invasive Species: Invasive Species >> Regulation S.I. 477 (Ireland)	0.45km west
Spanish Bluebell (Hyacinthoides hispanica)	1	23/04/2022	Vascular plants: Online Atlas of Vascular Plants 2012 Onwards	Invasive Species: Invasive Species Invasive Species: Invasive Species >> Regulation S.I. 477 (Ireland)	1.00km southwest

4 SCREENING ASSESSMENT

Screening is the process that addresses and records the reasoning and conclusions in relation to the first two tests of Article 6(3):

- (1) whether a plan or project is directly connected to or necessary for the management of the site; and*
- (2) whether a plan or project, alone or in combination with other plans and projects, is likely to have significant effects on a Natura 2000 site in view of its conservation objectives.*

4.1 Whether the project is directly connected to or necessary for the management of the site

The plan or project is not directly connected to or necessary for the management of the site. It is therefore necessary to undertake the screening to determine whether the project is likely to have significant effects on a Natura 2000 site in view of its conservation objectives.

4.2 Identification of Relevant European Sites

The Source-Pathway-Receptor (S-P-R) model has been used to identify the relevant European sites relevant to the proposed scheme. Given the scale and nature of the proposed scheme, a distance of 5km was used as a starting point for identifying potential impacts. The most up-to-date Conservation Objectives for the European sites under consideration, and details in relation to the Qualifying Interests (QI) and Special Conservation Interests (SCI) of these European sites are provided in **Table 4.1**. SACs and SPAs described in Table 4.1 are

illustrated

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. The information contained in these tables is based on publicly available data on these European Sites and their Conservation Objectives, sourced from NPWS in July 2023.

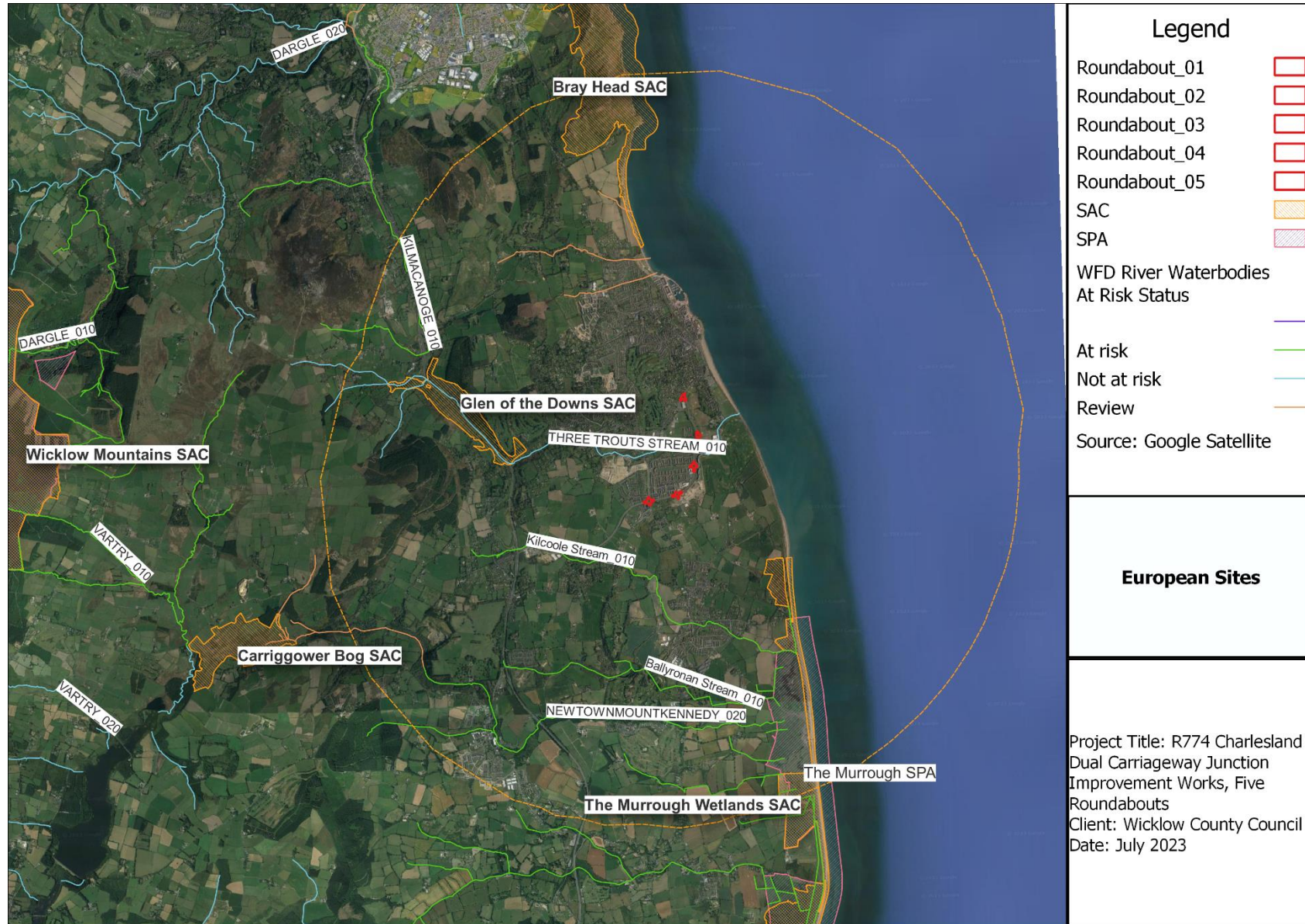


Figure 4.1 European Sites

Table 4.1 Identification of European Sites

Site Code	Site Name	Qualifying Interests	Conservation Objectives	Source-Pathway-Receptor
002249	The Murrough Wetland SAC c. 1.7 km Southeast Latitude: 53.0388 Longitude: -6.04838	<ul style="list-style-type: none"> • Annual vegetation of drift lines [1210] • Perennial vegetation of stony banks [1220] • Atlantic salt meadows (<i>Glauco-Puccinellietalia maritimae</i>) [1330] • Mediterranean salt meadows (<i>Juncetalia maritimi</i>) [1410] • Calcareous fens with <i>Cladium mariscus</i> and species of the <i>Caricion davallianae</i> [7210] • Alkaline fens [7230] 	<p><i>NPWS (2021) Conservation Objectives: The Murrough Wetlands SAC 002249.</i></p> <p><i>Version 1. National Parks and Wildlife Service, Department of Housing, Local Government and Heritage.</i></p>	Yes. The proposed scheme is not located within or adjacent to this SAC. Therefore, there will be no direct disturbance of the QI habitats. The habitats within and adjacent to the proposed scheme do not correspond with the QI habitats of this SAC. There is no viable hydrological connection from the proposed scheme. Hydrological connectivity is remote via the Three-Trout's stream and coastal waters. The nearest stream the Kilcoole Stream that does connect to this designated site is 1.2 km south of the scheme and 1.6 km west of the scheme via the road network. This stream is not considered to be within the zone of influence of the proposed works. There is a hydrogeological connection via the Wicklow ground waterbody, therefore a source-pathway-receptor was identified via groundwater.
004186	The Murrough Wetland SPA c. 2.5km Southeast Latitude: 53.0452 Longitude: -6.0458	<ul style="list-style-type: none"> • Red-throated Diver (<i>Gavia stellata</i>) [A001] • Greylag Goose (<i>Anser anser</i>) [A043] • Light-bellied Brent Goose (<i>Branta bernicla hrota</i>) [A046] • Wigeon (<i>Anas penelope</i>) [A050] • Teal (<i>Anas crecca</i>) [A052] • Black-headed Gull (<i>Chroicocephalus ridibundus</i>) [A179] • Herring Gull (<i>Larus argentatus</i>) [A184] • Little Tern (<i>Sterna albifrons</i>) [A195] • Wetland and Waterbirds [A999] 	<p><i>NPWS (2022) Conservation objectives for The Murrough SPA [004186]. First Order Sitespecific Conservation Objectives Version 1.0. Department of Housing, Local Government and Heritage</i></p>	Yes. The proposed scheme is not located within or adjacent to this SPA. Therefore, there will be no direct disturbance of the species of Special Conservation Interest. The habitats within and adjacent to the proposed scheme are not considered a suitable habitat type for any of the SCI birds. There is no viable hydrological connection from the proposed scheme. Hydrological connectivity is remote via the Three-Trout's stream and coastal waters. The nearest stream the Kilcoole Stream that does connect to this designated site is 1.2 km south of the scheme and 1.6 km west of the scheme via the road network. This stream is not considered to be within the zone of influence of the proposed works. There is a hydrogeological connection via the Wicklow ground waterbody, therefore a source-pathway-receptor was identified via groundwater.
000719	Glen of the Downs SAC c. 2.0km West	<ul style="list-style-type: none"> • Old sessile oak woods with Ilex and Blechnum in the British Isles [91A0] 	<p><i>NPWS (2022) Conservation objectives for Ballykenny-Fishertown</i></p>	Yes. The proposed scheme is not located within or adjacent to this SAC. Therefore, there will be no direct disturbance of the QI habitats. The habitats within and adjacent to the

Site Code	Site Name	Qualifying Interests	Conservation Objectives	Source-Pathway-Receptor
	Latitude: 53.136 Longitude: -6.11624		<i>Bog SPA [004101] First Order Site Specific Conservation Objectives Version 1.0. Department of Housing, Local Government and Heritage.</i>	proposed scheme do not correspond with the QI habitats of this SAC which is Old sessile oak woods with Ilex and Blechnum in the British Isles [91A0]. There is no downstream hydrological connection. The Three-Trout's stream provides an ecological corridor to this SAC upstream however this is not considered relevant with regard to the impact sources and the QI of the site. There is a hydrogeological connection via the Wicklow ground waterbody, a source-pathway-receptor was identified.
000714	Bray Head SAC c. 2.4 km North Latitude: 53.1819 Longitude: -6.08027	<ul style="list-style-type: none"> • Vegetated sea cliffs of the Atlantic and Baltic coasts [1230] • European dry heaths [4030] 	<p>NPWS (2017) Conservation Objectives: Bray Head SAC 000714. Version 1.</p> <p>National Parks and Wildlife Service, Department of Arts, Heritage, Regional, Rural and Gaeltacht Affairs.</p>	Yes. The proposed scheme is not located within or adjacent to this SAC. Therefore, there will be no direct disturbance of the QI habitats. The habitats within and adjacent to the proposed scheme do not correspond with the QI habitats of this SAC which is Vegetated Sea cliffs of the Atlantic and Baltic coasts [1230] and European dry heaths [4030]. There is no hydrological connection. There is a hydrogeological connection via the Wicklow ground waterbody, a source-pathway-receptor was identified.

4.3 Other Designated Sites

Other nationally designated sites located within the potential zone of influence of the proposed scheme are shown in Figure 4.2.

- Great Sugar Loaf pNHA (001769)
- Bray Head pNHA (000714)
- The Murrough pNHA (000730)
- Kilmacanoge Marsh pNHA (000724)
- Glen of the Downs pNHA (000719)

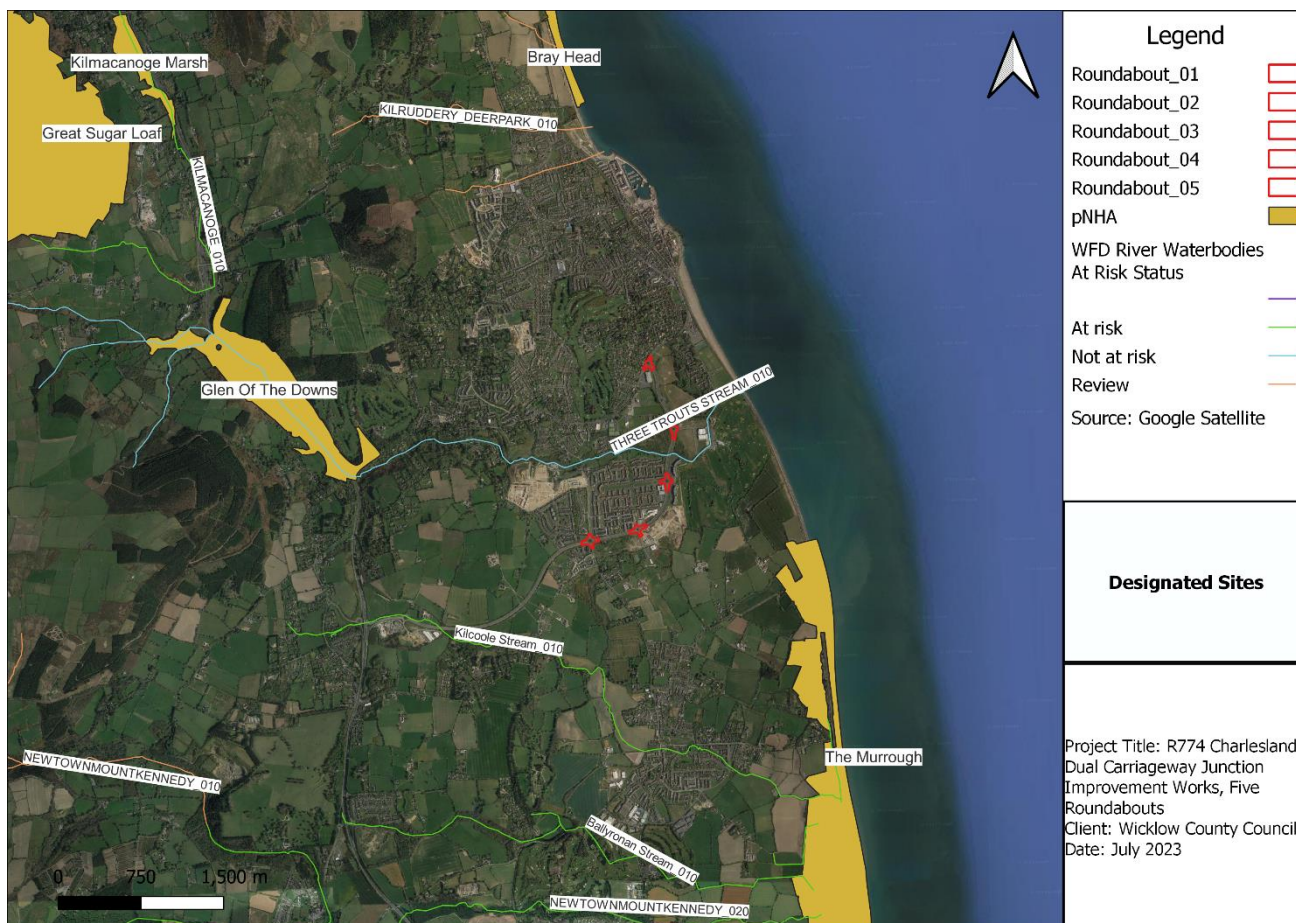


Figure 4.2 Designated Sites within the potential zone of influence

5 Assessment of potential likely significant effects

This section sets out the assessment of the likely significant direct and indirect effects on the conservation objectives of the site(s) in relation to the project alone; and in-combination with other plans and projects. This impact assessment has been undertaken without consideration of mitigation measures.

Four European sites have been considered in the potential zone of influence, namely:

- The Murrough Wetland SAC (002249)
- The Murrough SPA (004186)
- Bray Head SAC (000714)
- Glen of the Downs SAC (000719)

Potential impacts as a result of the construction and operation of the proposed scheme are considered:

- Habitat loss or fragmentation
- Changes in surface water quality
- Changes in groundwater or alteration in groundwater flow/yield
- Changes in air, noise, lighting, vibration or human presence
- Spread of invasive species

5.1 Direct impacts

Habitat loss or fragmentation

The proposed scheme does not lie within nor is it adjoining the boundaries of any European site; therefore there is no risk of habitat loss, or any other direct impacts. The proposed scheme is not under any wildlife or conservation designation. Furthermore, no rare, threatened or legally protected plant species are known to occur within the site. The habitats present are not of significance for such species. The proposed scheme site is not suitable ex situ habitat for any of the SCI bird species associated with the SPAs.

The proposed scheme comprises of a junction improvement scheme on the existing R774. The nearest European site(s) are located c. 1.7km southeast. There are no features of ecological significance on the site. The site has no key ecological receptors. Evidence of habitats or species with links to European sites were not recorded during the site survey or desk study. There will be no loss of any habitat or species listed as a Qualifying Interest or Special Conservation Interest (SCI) of any designated site as a consequence of the proposed scheme.

5.2 Indirect impacts

The most common pathway for impacts is surface water, for example pollutants washed into a river and carried downstream into a designated site. Other potential pathways are groundwater, air (e.g. airborne dust), or land (e.g. flow of liquids, vibration). Hydrological impacts can be several kilometres, but for air and land it is rarely more than a few hundred metres. The magnitude of impacts usually decreases as the distance between source and receptor increases.

Changes in surface water quality

Construction works typically generate fine sediments and may occasionally cause accidental spills of pollutants (hydrocarbons), which can be harmful to aquatic / marine habitats and species. The Three Trout's Stream_010 (IE_EA_10T030580) intersects the R774 carriageway approximately 150m south of Roundabout 2 and 170m from Roundabout 3 of the proposed scheme. The stream is culverted under the carriageway. No works are required within the vicinity of the Three-Trout's stream. Therefore it is considered unlikely that sediment or pollution will impact the stream.

There is existing drainage infrastructure within the road which may outfall to Three-Trout's stream and to eventually outfall to the coastal waters. However, it is considered that even in the unlikely event of an accidental spill of pollutants or release of sediments; the small scale, nature and location of the proposed scheme relative to the European sites, the dilution and dispersal capacity of intervening coastal waters, the proposed scheme will not give rise to surface water runoff with potential for likely significant effects on the

habitats of the Murrrough SAC or the SCI species or wetland habitat of the Murrrough SPA or any other European site.

Changes in groundwater quality or alteration in yield/flow

Construction can potentially release contaminants, such as chemicals or waste materials, into the surrounding soil and groundwater. These contaminants can then spread through the groundwater system, potentially affecting the quality and safety of groundwater and linked surface waters.

The proposed scheme is located c. 1.7km from the boundary of the Murrrough SAC. Calcareous fens (7210) and alkaline fens (7230) are groundwater dependent ecosystems. Hydrogeological pathways are remote. The proposed scheme involves little or no excavations or impacts to soils or subsoils. The existing hardstanding will remain in situ for the construction and operation of the proposed scheme. Abstraction of groundwater is not required. Alterations to groundwater quality and alteration of groundwater flow/yield is considered negligible. The risk from contamination of groundwater and hydrocarbons is considered very low. Therefore significant negative effects on the Murrrough SAC and other European sites within the same groundwater body are not considered likely.

Changes in air, noise, lighting, vibration and human disturbance

The proposed scheme will involve minimal excavations of a short-term duration. This has potential to generate some noise, dust, vibration and human disturbance although this will be controlled in order to avoid disturbance to residences and commercial premises in the area. There are no SPAs within 1km of the proposed scheme. The nearest SPA is c. 2.5km. At this distance the construction of the proposed scheme will not cause significant disturbance to birds and will not occur at levels that adversely affect the SCIs of any European site.

The site and adjacent areas are not suitable ex situ habitat for any of the SCI species and therefore disturbance to SCI species using ex situ habitat is not likely.

Spread of invasive species

No invasive species listed on the Third Schedule of the Birds and Habitats Regulations 2011 were recorded along the proposed scheme during the walkover survey. A single invasive species, Butterfly-bush (*Buddleja davidii*) was recorded during the site visit at Ballynerrin Roundabout (Roundabout 4). This is a medium impact invasive species. The species is common and widespread and due to the distance to the European sites from the works, no impact to European sites from the potential spread of this species is anticipated over and above that which may occur naturally.

6 In-combination Effects

The screening assessment has concluded that there is no real viable pathway for transmission of impacts to European sites due to the small scale of the development, the minor impact sources and the remote hydrological and hydrogeological distance to the sites. It is considered highly unlikely that the project would contribute to a significant in combination effect with other plans and projects.

7 Screening Conclusion

This Appropriate Assessment Screening Report was prepared to assess whether the proposed scheme individually or in combination with other plans or projects, and in view of best scientific knowledge, is likely to have significant effect on a European site(s).

The Source-Pathway-Receptor model was used for detailed assessment. The potential impact has been considered in the context of the qualifying interests and Special Conservation Interests and their conservation objectives of the following European sites.

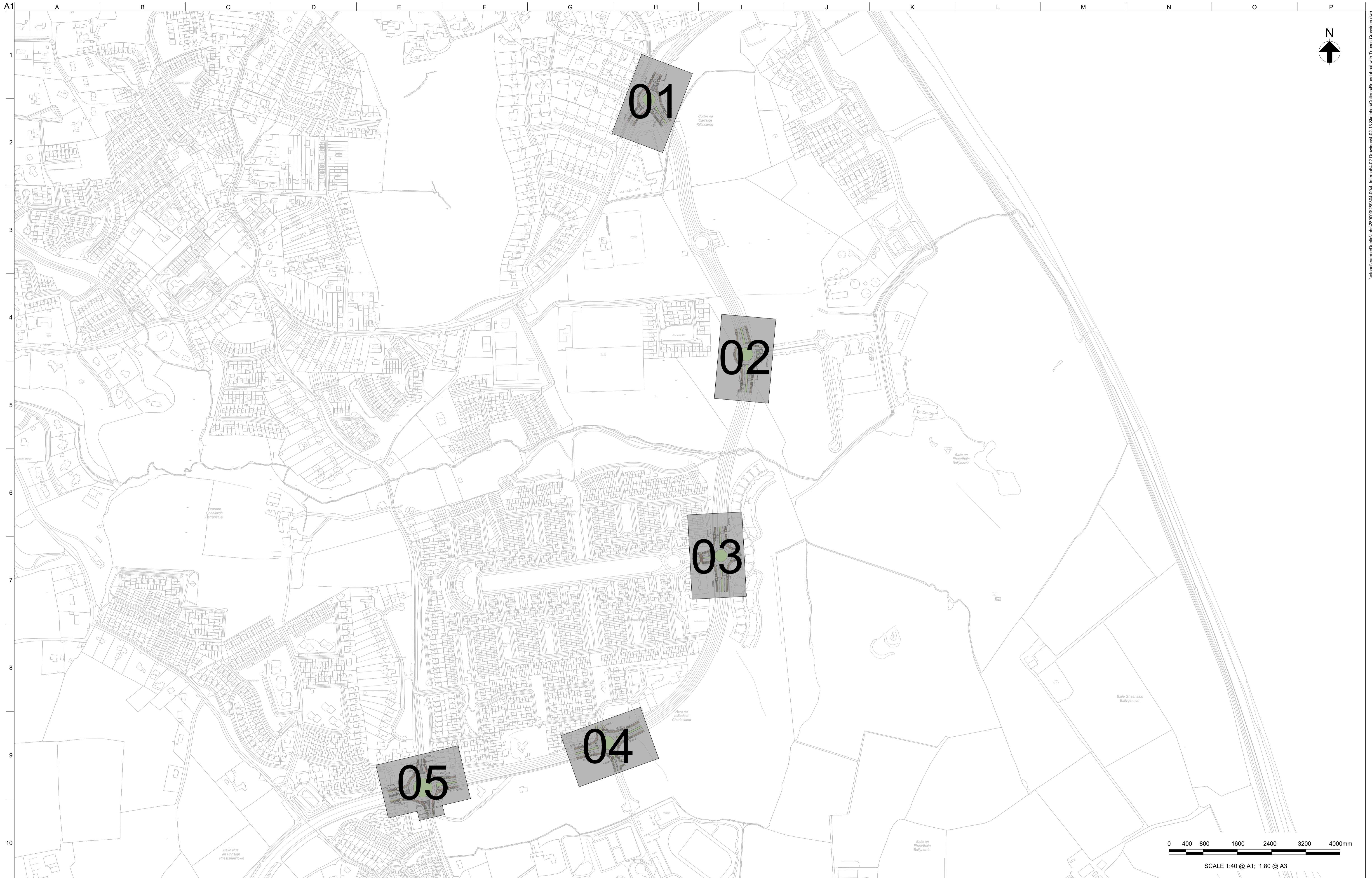
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- The Murrrough Wetland SPA (004186)
- Glen of the Downs SAC (000719)
- Bray Head SAC (000714)

In undertaking the construction phase, best practice construction methods will be used but these are not required to avoid or reduce any effects on a European site. These control measures have not been used to formulate a conclusion.

Due to the small scale and short-term nature of the proposed scheme and the potential low risk of minor pollution or sediment release, and the remote hydrological and hydrogeological distance to the European sites it is considered very unlikely that the project would result in significant negative effects on any European site alone or in combination with other plans and projects.

It is concluded that the proposed scheme, individually or in-combination with other plans or projects is not predicted to result in likely significant negative effects on the European sites identified to be within the potential zone of influence, or any other European sites, in view of their respective conservation objectives.

APPENDIX A – GENERAL ARRANGEMENT DRAWINGS



Y:\global\projects\Dublin\289304-004 - Internal\A2 Drawings\A2-05-13 Sheet\SheetOptions\Foundation with Toucan Crossing.dwg

Do not scale

Rev	Date	By	Chkd	Appd
I1	17/05/23	JD	SG	CMcG

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 Arup, 50 Ringsend Road
 Dublin, D04 T6X0
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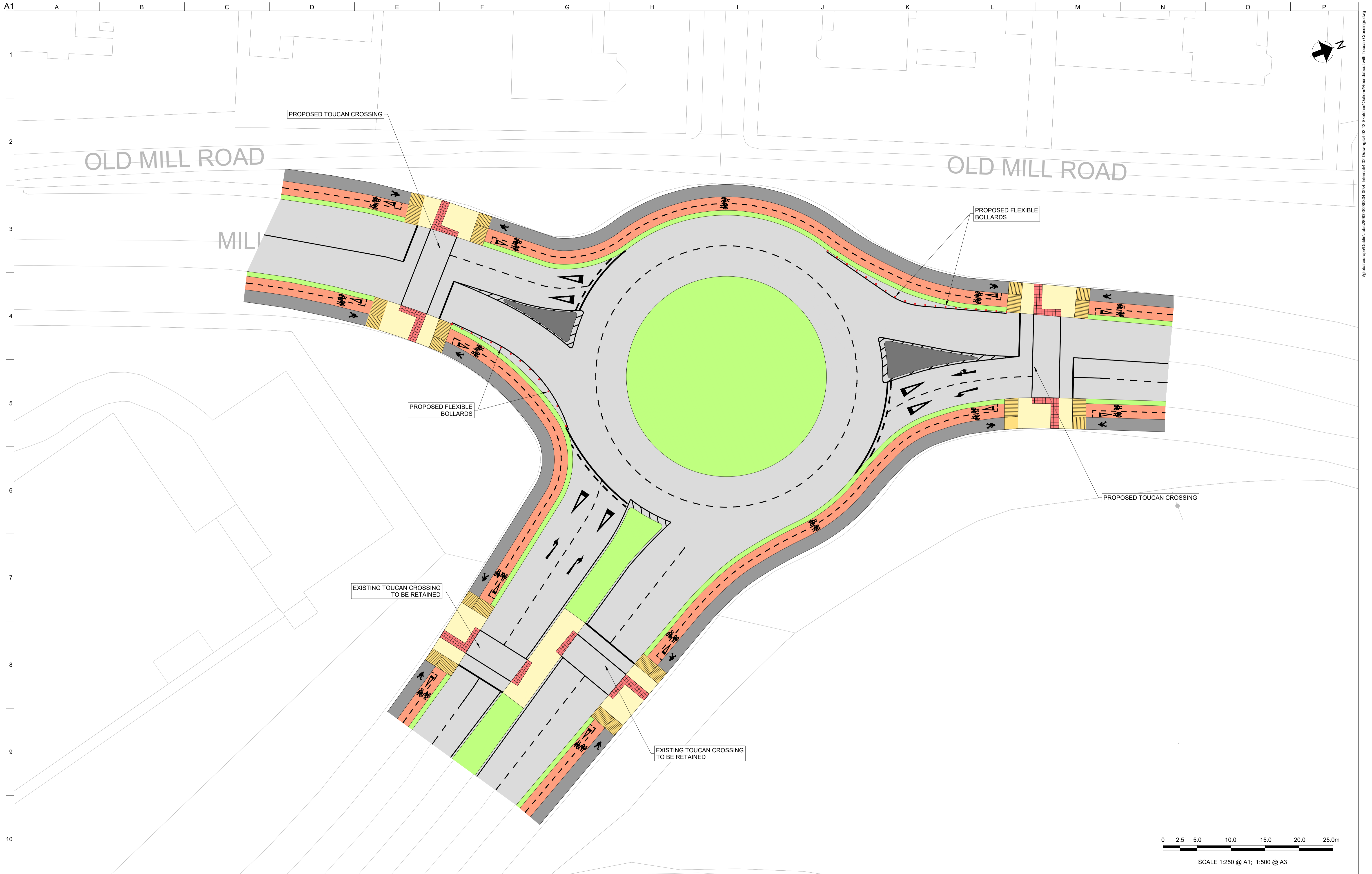
Client
 Wicklow County Council

Project Title
 Greystones to Kilcoole
 Pedestrian and Cycle
 Improvement Scheme

Drawing Title
 Key Plan
 Sheet 01 of 01

Scale at A1	1:40 (1:80 @ A3)
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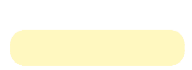






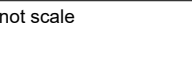
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A B C D E F G H I J K L M N O P

LEGEND:

	SHARED SURFACE		ISLAND
	CYCLE TRACK		RAISED TABLE
	FOOTPATH		PROPOSED FLEXIBLE BOLLARD
	CARRIAGEWAY		
	GRASS AREA / VERGE		

Rev	Date	By	Chkd	Appd
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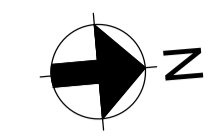
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Client
 Wicklow County Council

Project Title
 Greystones to Kilcoole
 Pedestrian and Cycle
 Improvement Scheme

Drawing Title
 L1221 Charlesland Dual Carriageway
 Junction Improvement Works
 Sheet 01 of 05

Scale at A1	1:250 (1:500 @ A3)
Role	Transport Infrastructure
Suitability	S2 - For Information
Arup Job No	Rev
289304-00	I1
Name	
289304-ARUP-ZZ-XX-SK-CH-00201	



HIGH FRICTION SURFACING TO BE APPLIED IN ADVANCE OF TOUCAN CROSSING

PROPOSED TOUCAN CROSSING

HIGH FRICTION SURFACING TO BE APPLIED IN ADVANCE OF TOUCAN CROSSING

PROPOSED TOUCAN CROSSING

PROPOSED WIDENED CENTRAL ISLAND

EXISTING UNCONTROLLED CROSSING TO BE RETAINED

ADDITIONAL ROAD MARKINGS TO BE AGREED WITH ADJACENT LANDOWNER AS REQUIRED



SCALE 1:250 @ A1; 1:500 @ A3

LEGEND:

	SHARED SURFACE		ISLAND
	CYCLE TRACK		RAISED TABLE
	FOOTPATH		PROPOSED FLEXIBLE BOLLARD
	CARRIAGEWAY		
	GRASS AREA / VERGE		

Rev	Date	By	Chkd	Appd
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ARUP

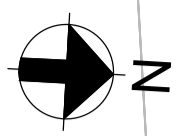
Arup, 50 Ringsend Road
Dublin, D04 T6X0
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Client
Wicklow County Council

Project Title
Greystones to Kilcoole
Pedestrian and Cycle
Improvement Scheme

Drawing Title
L1221 Charlesland Dual Carriageway
Junction Improvement Works
Sheet 02 of 05

Scale at A1	1:250 (1:500 @ A3)
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Name	
289304-ARUP-ZZ-XX-SK-CH-00202	



SCALE 1:250 @ A1; 1:500 @ A3

LEGEND:

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 FOOTPATH	 PROPOSED FLEXIBLE BOLLARD
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 GRASS AREA / VERGE	

Rev	Date	By	Chkd	Appd
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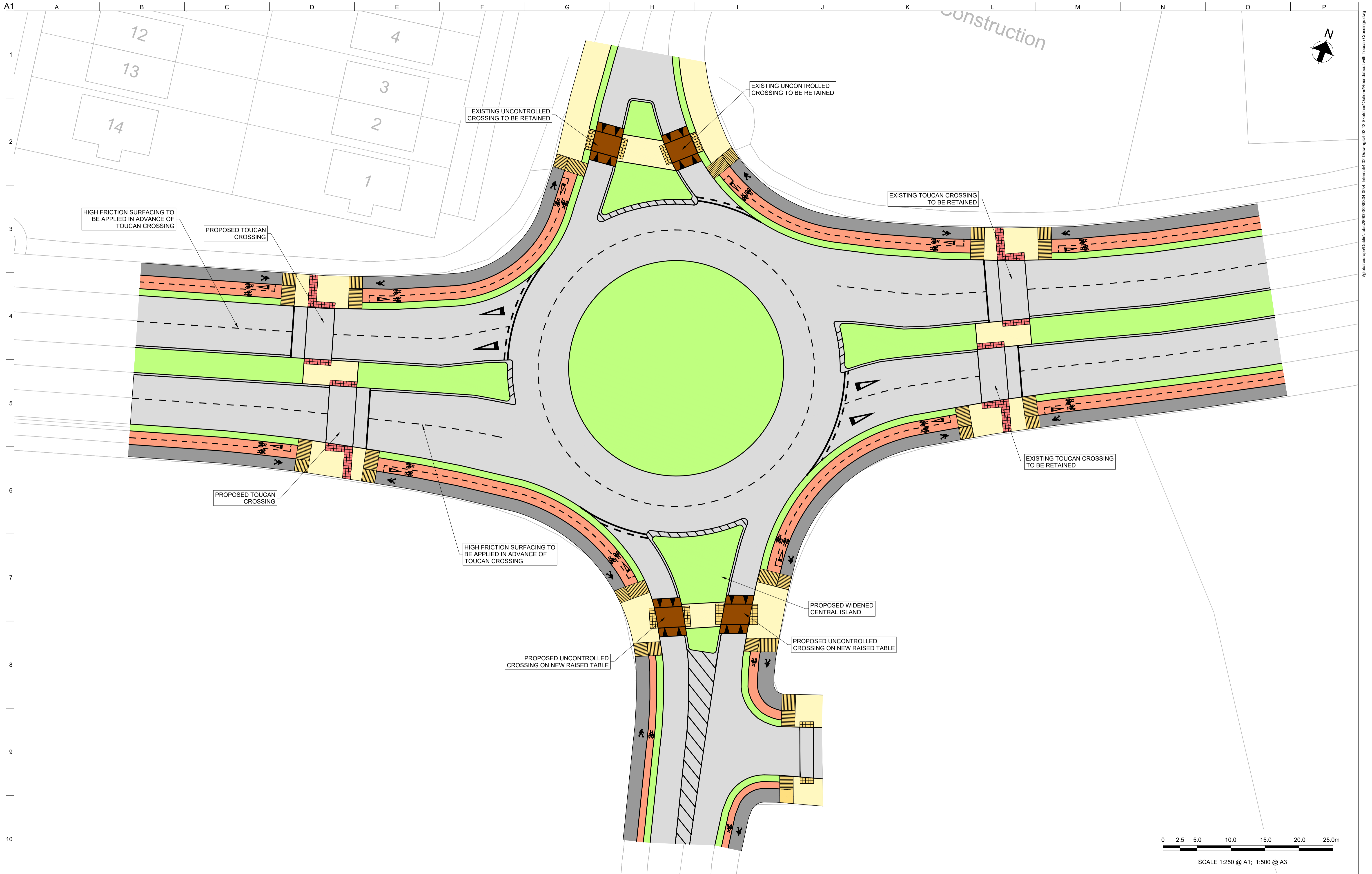
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 Arup, 50 Ringsend Road
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Client
 Wicklow County Council

Project Title
 Greystones to Kilcoole
 Pedestrian and Cycle
 Improvement Scheme

Drawing Title
 L1221 Charlesland Dual Carriageway
 Junction Improvement Works
 Sheet 03 of 05

Scale at A1	1:250 (1:500 @ A3)
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Suitability	S2 - For Information
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Rev	I1



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A B C D E F G H I J K L M N O P

LEGEND:

	SHARED SURFACE		ISLAND
	CYCLE TRACK		RAISED TABLE
	FOOTPATH		PROPOSED FLEXIBLE BOLLARD
	CARRIAGEWAY		
	GRASS AREA / VERGE		

Rev	Date	By	Chkd	Appd
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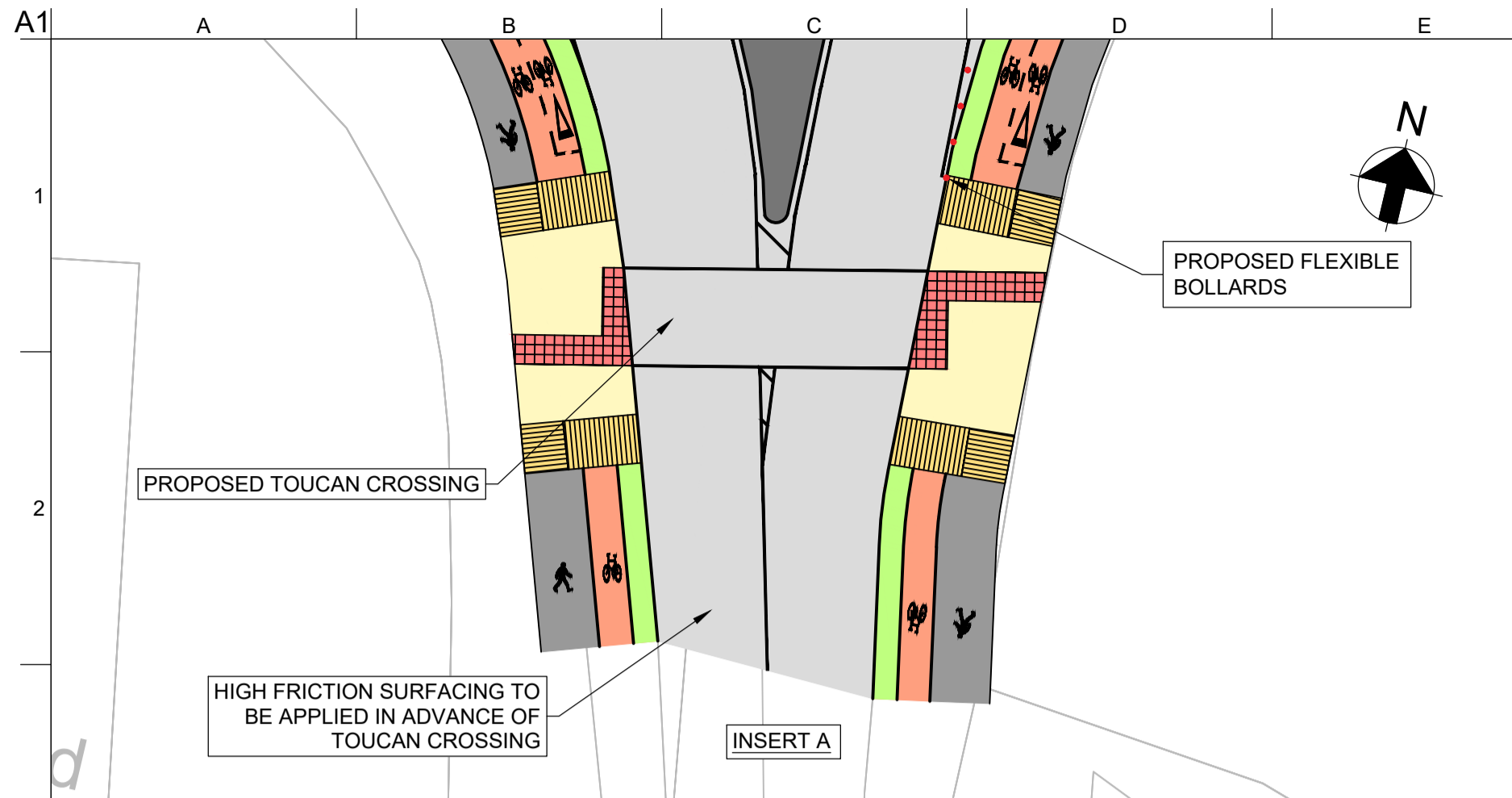
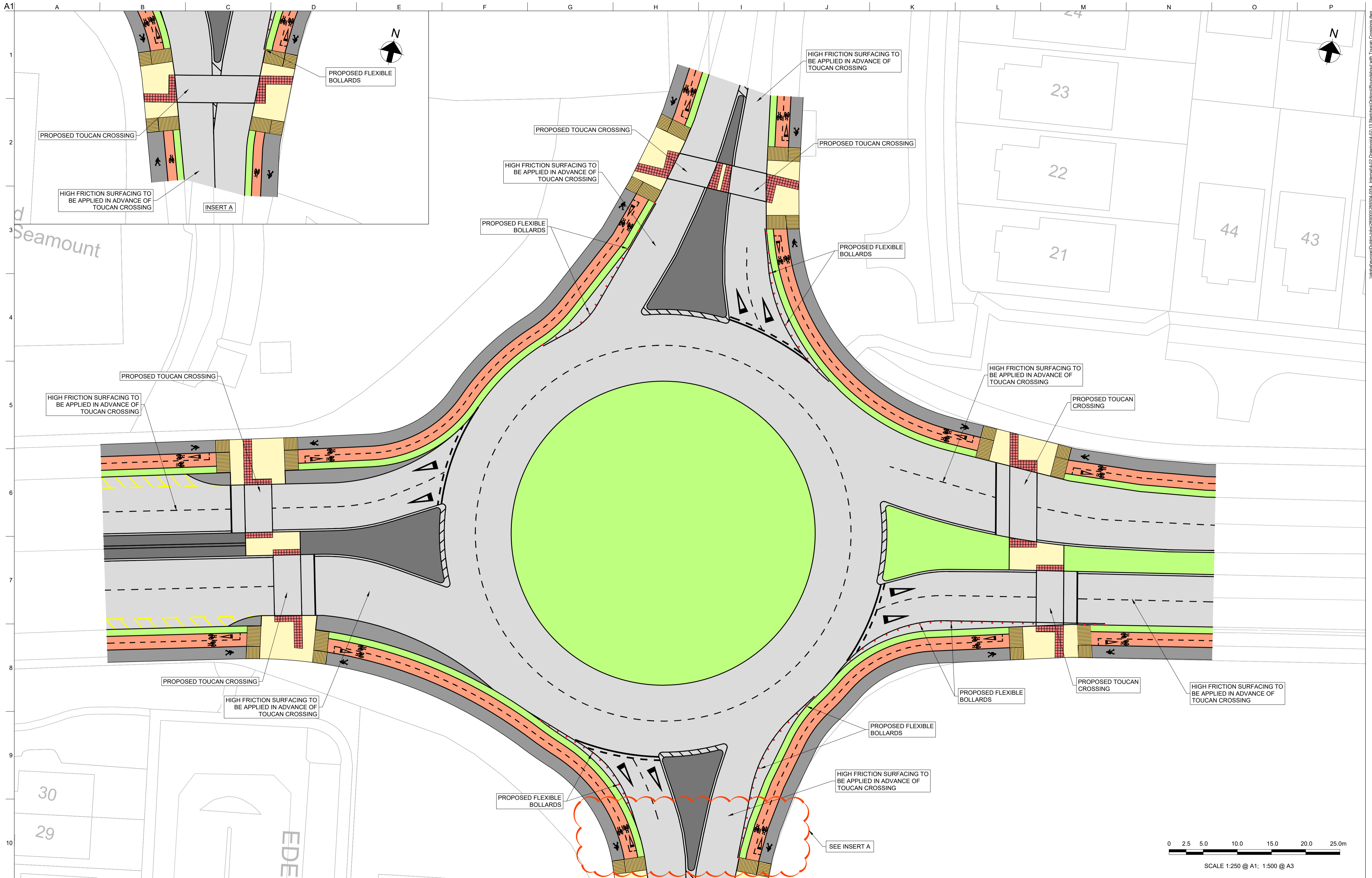
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Client
 Wicklow County Council

Project Title
 Greystones to Kilcoole
 Pedestrian and Cycle
 Improvement Scheme

Drawing Title
 L1221 Charlesland Dual Carriageway
 Junction Improvement Works
 Sheet 04 of 05

Scale at A1	1:250 (1:500 @ A3)
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Suitability	S2 - For Information
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Name	289304-ARUP-ZZ-XX-SK-CH-00204
Rev	11



Seamount



LEGEND:

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	FOOTPATH		PROPOSED FLEXIBLE BOLLARD
	CARRIAGEWAY		
	GRASS AREA / VERGE		

Rev	Date	By	Chkd	Appd
11	17/05/23	JD	SG	CMcG

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Project Title
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 Pedestrian and Cycle
 Improvement Scheme

Drawing Title
 L1221 Charlesland Dual Carriageway
 Junction Improvement Works
 Sheet 05 of 05

Scale at A1	1:250 (1:500 @ A3)
Role	Transport Infrastructure
Suitability	S2 - For Information
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Rev	11

