REPORT

Proposed New Naas to Kill Cycle Route and Associated Works

Screening for Appropriate Assessment

Submitted to:

Kildare County Council
Devoy Park
Naas
County Kildare

Submitted by:

WSP Ireland Consulting Ltd
Town Centre House, Dublin Road, Naas,
Co. Kildare, W91 TD0P Ireland

+353 45 810 200

40000089

June 2022

Distribution List

Kildare County Council - 1 copy

WSP Ireland Consulting Ltd (Golder) - 1 copy

Table of Contents

TABLES

FIGURES

APPENDICES

1.0 INTRODUCTION AND PROJECT DESCRIPTION

WSP Ireland Consulting Ltd, trading as Golder was requested by Kildare County Council to carry out a Screening for Appropriate Assessment (AA) for the proposed new cycle infrastructure and upgrades to cycle infrastructure from Naas to Kill, Co. Kildare (the Project). The Project is located from "The Ball" roundabout located off Junction 9, the N7 and ending at the Slí na Naomh Junction, Kill Village, a total length of 4.4 km. The design of new infrastructure and upgrades are proposed for existing kerbsides and the R445 which connects Naas with the townlands of Johnstown and Kill. The Project objective is to create a high-quality cycle route in accordance with the Cycle Network Plan (CNP) for the Greater Dublin Area (GDA) in partnership with the National Transport Authority. The Project description can be summarised as follows:

- Widening of an existing shared pedestrian and cycle path on the R445 between Naas and Johnstown; on the L2014 between Johnstown and Kill with any appropriate improvements to signage, surfacing and lighting incorporated;
- Modifications to bus lay-bys, bus shelters, parking spaces in the villages of Johnstown and Kill to allow for segregated cycle and pedestrian facilities where possible;
- New Ramps, Raised Crossings and Raised Table Crossings in the villages of Johnstown and Kill where appropriate; and
- Cycle provisions are designed within the National Cycle Policy Framework to ensure legibility, comfort and safety.

This screening is required in accordance with potential ecological impacts associated with the proposed Project.

The Screening for Appropriate Assessment comprises an appraisal of potential impacts on European designated conservation sites within a 15 km radius of the Site. This AA Screening has been prepared by Emma Gilmartin MSc., MCIEEM - Environmental Scientist and reviewed by Freddy Brookes MSc., MCIEEM – Senior Ecologist, WSP/ Golder.

The terms of reference of this report are set out below.

1.1 Terms of Reference

This screening has been undertaken in accordance with the requirements of the EU Habitats Directive (Directive 92/43/EEC). Directive 92/43/EEC on the Conservation of Natural Habitats and Wild Fauna and Flora – the 'Habitats Directive' - provides legal protection for habitats and species of European importance. Article 2 of the Directive requires the maintenance or restoration of habitats and species of European Community interest, at a favourable conservation status. Articles 3 - 9 provide the legislative means to protect habitats and species of Community interest through the establishment and conservation of an EU-wide network of sites known as *Natura 2000*. Natura 2000 sites are Special Areas of Conservation (SACs) designated under the Habitats Directive and Special Protection Areas (SPAs) designated under the Conservation of Wild Birds Directive (79/409/EEC).

Articles 6(3) and 6(4) of the Habitats Directive set out the decision-making tests for plans or projects affecting Natura 2000 sites. Article 6(3) establishes the requirement for Appropriate Assessment:

> *"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."*

Article 6(4) deals with the steps that should be taken when it is determined, as a result of Appropriate Assessment, that a plan/project will adversely affect a European site. Issues dealing with alternative solutions, imperative reasons of overriding public interest and compensatory measures need to be addressed in this case.

Article 6(4) states:

> *"If, in spite of a negative assessment of the implications for the site and in the absence of alternative solutions, a plan or project must nevertheless be carried out for imperative reasons of overriding public interest, including those of a social or economic nature, the Member States shall take all compensatory measures necessary to ensure that the overall coherence of Natura 2000 is protected. It shall inform the Commission of the compensatory measures adopted.*
>
> *Where the site concerned hosts a priority natural habitat type and/or a priority species, the only considerations which may be raised are those relating to human health or public safety, to beneficial consequences of primary importance for the environment or, further to an opinion from the Commission, to other imperative reasons of overriding public interest."*

The requirements of Articles 6(3) and 6(4) of the Habitats Directive have been transposed into Irish legislation by means of the Habitats Regulations, 1997 (S.I. No. 94 of 1997) and the European Communities (Birds and Natural Habitats) Regulations 2011 (S.I. No. 477/2011).

2.0 METHODS

2.1 Desktop Review and Data Collation

A desktop review was conducted of available published and unpublished information, together with a review of data available on the NPWS http://www.npws.ie/en/, National Biodiversity Data Centre http://maps.biodiversityireland.ie/, and Environment Protection Agency web-based databases.

2.2 Screening for Appropriate Assessment

This report has been prepared with reference to the following documents:

- 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 Communities, 2002);
- Managing Natura 2000 sites: the provisions of Article of the 'Habitats Directive' 92/43/EC; and
- Appropriate Assessment of Plans and Projects in Ireland. Guidance for Planning Authorities. (DOE, 2009, Revision Notes 2010).

Appropriate Assessment is carried out in stages, as recommended by the above-referenced Guidance Documents. There are four stages as follows:

2.2.1 Stage 1: Screening

This initial stage aims to identify the likely impacts of the project on a Natura 2000 site, either alone or in combination with other projects or plans. The impacts are examined to establish whether these impacts are likely to be significant. Assessment of the significance of effects is carried out in consultation with the relevant nature agencies.

2.2.2 Stage 2: Appropriate Assessment

The aim of this stage is to identify the conservation objectives of the site and to assess whether or not the project, either alone or in combination with other projects or plans will result in adverse effects on the integrity of the site, as defined by the conservation objectives and status of the site. Stage 2 is carried out in consultation with the relevant nature agencies. Where it cannot be demonstrated that there will be no adverse effects on the site, it is necessary to devise mitigation measures to avoid, where possible, any adverse effects.

2.2.3 Stage 3: Assessment of Alternative Solutions

This stage examines alternative ways of implementing the project that, where possible, avoid any adverse impacts on the integrity of the Natura 2000 site. If alternative solutions have been identified that will either avoid any adverse impacts or result in less severe impacts on the site, it will be necessary to assess their potential impact by recommencing the assessment at Stage One or Stage Two as appropriate. However, if it can be reasonably and objectively concluded that there is an absence of alternatives, it will be necessary to proceed to Stage Four of this assessment methodology.

2.2.4 Stage 4: Assessment where Adverse Impacts Remain

For sites that host priority habitats and species, it is necessary to consider whether or not there are human health or safety considerations or environmental benefits flowing from the project. If such considerations do exist, then it will be necessary to carry out the Stage Four assessments of compensatory measures. If no such considerations exist, then establish whether there are other imperative reasons of overriding public interest (IROPI) before carrying out the Stage Four assessments. Where IROPI exist, an assessment to consider whether compensatory measures will or will not effectively offset the damage to the site will be necessary before the project or plan can proceed.

This report is for Screening (Stage 1) for Appropriate Assessment only.

3.0 PROJECT LOCATION

The Project is located in County Kildare, approximately 2.1 km north-east of Naas town centre, running generally parallel to the N7 from Junction 9, Naas North/Sallins exit to Kill (Figure 1).

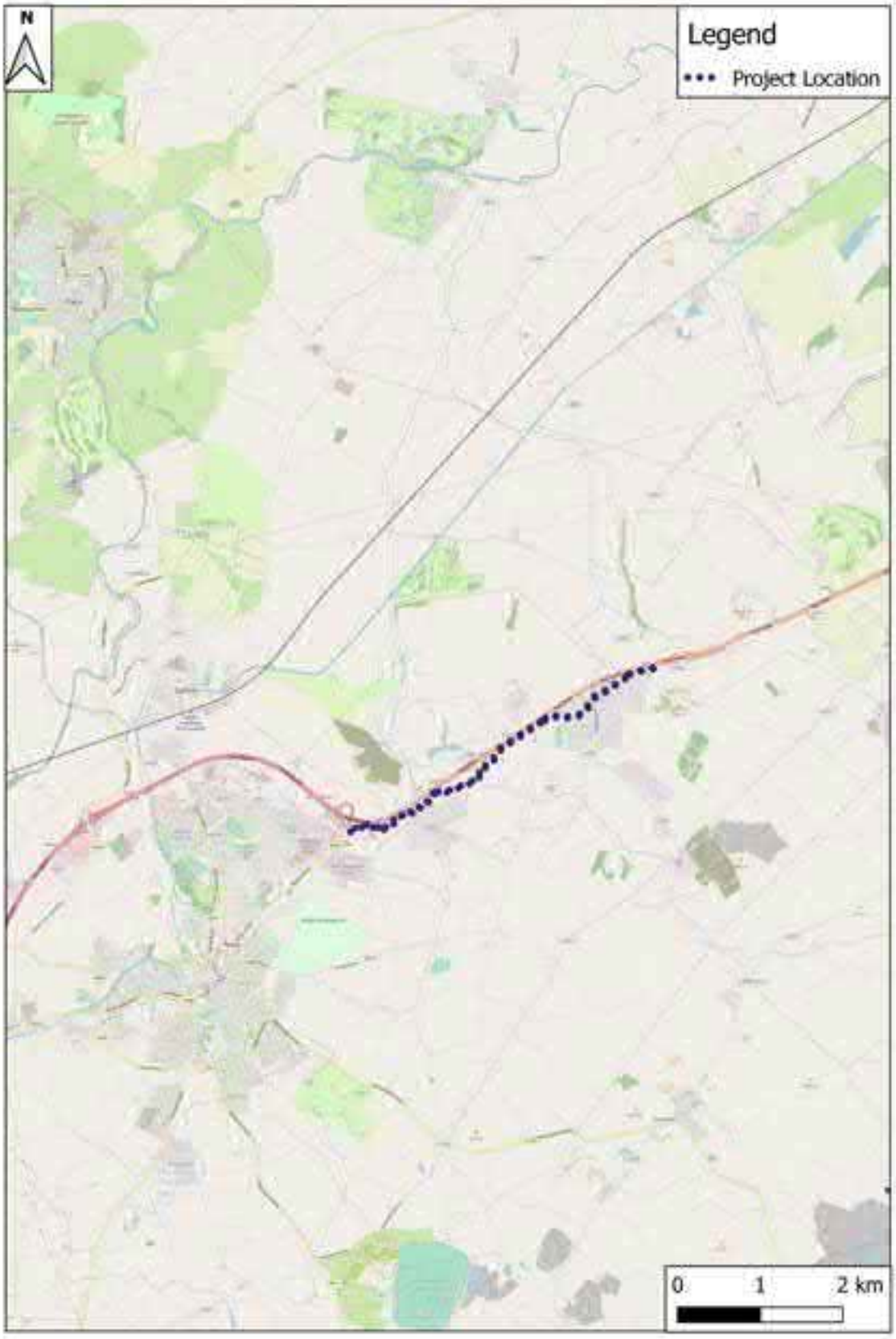


Figure 1: Site Location Plan

Specifically, the Project is along the R445 heading northeast from Naas, to Johnstown village and the L2014 finishing at the Slí na Naomh Junction, Kill. The Project consists of roadway, pedestrian kerbs and grassy verges. As the surrounding environs encompasses two lengths of roadway and Johnstown and Kill villages, for ease of reference, the project has been grouped under the following four sections (Figure 2):

- Section 1: 'The Ball' Naas to Johnstown Village. It consists of c.850m in length, with a 4.0m wide shared use pedestrian-cycle path and grassy verge. The 1m grassy verge will be removed to widen cycle path.
- Section 2: Johnstown Village. It consists of c.530m in length, with modifications to car parking spaces, bus stops and bus lay-bys.
- Section 3: Exiting Johnstown to Kill. It consists of c.1.6km in length, with a 4.0m wide shared use pedestrian-cycle path and grassy verge. The 1m grassy verge will be removed to widen cycle path.
- Section 4: Kill Village. It consists of c.1.53km in length, with modifications to car parking spaces, roundabout and bus stops. Project design has been carefully considered to ensure retention of Class A trees.

A full set of design drawings accompany this Screening, please refer to Appendix A.

Figure 2: Section Map of Project Description

3.1 Description of the Site, Baseline Conditions

A walkover survey of the Site was conducted on the 23rd of February 2022 to record the habitats currently present on, and adjacent to, the Site. Habitats are named and described following Fossitt (2000). Habitat Assessment follows the Joint Nature Conservation Committee (JNCC) Phase One Habitat Survey methodology (JNCC, 1990, revised 2010). Additionally, aerial photographs (satellite imagery) and Site mapping (including surface water where applicable) assisted the habitat survey.

The Project footprint is comprised of one dominant habitat, artificial surfaces with discrete areas of grassy verges, hedgerows and trees. No protected habitats or flora species were recorded during the survey work. The phase 1 habitat survey was undertaken outside the optimum survey period for botanical and habitat surveys (April to September). However, due to the nature of the habitats recorded within the proposed development Site and the absence of any vegetation of note, the timing of the survey is not deemed to be a significant limitation in this instance.

The habitats recorded during the survey are described as follows.

3.1.1 Artificial Surfaces

Main use of land has been for pedestrians, walking and cycling – **Fossit Code BL3** (Figure 3).

Figure 3: Pedestrian Pathway in Project Design

3.1.2 Semi-natural Treeline

The Project will not modify the bordering hedgerows and trees within Section 1 and 3 (please see Figure 3). In the villages of Johnstown and Kill, trees have been established along the roadside in the grassy verges (Figure 4) – **Fossit Code WL2** and an Arboricultural Assessment Report (Appendix B) was undertaken to evaluate and survey trees. This report (Tree-space, 2022) indicates that: *17 trees or 7% of the total surveyed population will be lost to facilitate the construction of the cycle scheme. 12 category A trees (10% of total CAT A) will be removed, 3 category B (3% of total CAT B) and 1 category C tree (3% of total CAT C).* Additional ash tree loss is recommended to allow for lime trees to develop more freely at the eastern region of Johnstown (Tree-space, 2022). Protective fencing has been recommended to protect neighbouring trees during construction works, especially for two mature beech trees at Johnstown graveyard and Kill churchyard. In summary; *the tree loss to facilitate the construction of the proposed scheme was not considered significant. Ninety three percent of the surveyed population will be retained* (Tree-space, 2022).

Figure 4: Semi-Natural Treeline, Kill Village

3.2 Aquatic Receptors (on and off Site)

Aquatic receptors are a key focus for the AA screening process as there are no habitat or species synergies between Natura sites and the Proposed Project.

The Proposed Project is located in proximity to the Morrell and Rathmore stream in Johnstown and the Painestown stream in Kill. All are referenced as poor in the Water Framework Directive status (2013-2018). However, there is no aquatic connectivity from the Project to the streams, which underpass the roads (Figure 5 & 6) or danger of groundwater infiltration due to hardstanding environment.

Figure 5: Bridge infrastructure in place at Johnstown

Figure 6: Morrell Stream below Road Infrastructure

Connectivity from the aforementioned streams to the Rye Water Valley/Carton SAC [001398] are shown in Figure 8 below.

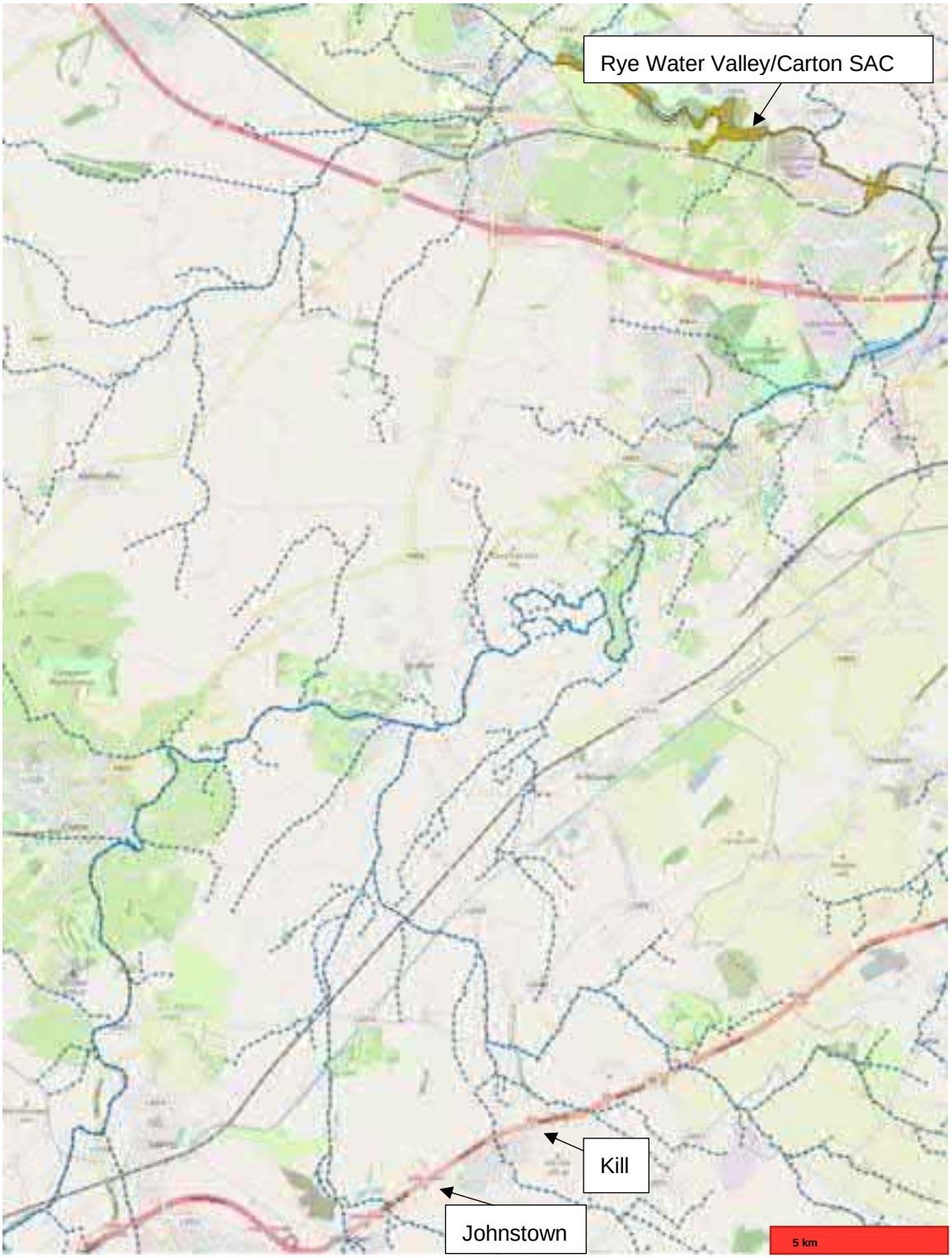


Figure 7: Water connectivity in relation to SACs (abstracted from EPA maps)

3.3 Natura 2000 Sites

Sites of international importance including Special Areas of Conservation (SACs) and Special Protection Areas (SPAs) are collectively known as Natura 2000 sites. These sites contain examples of some of the most important natural and semi-natural ecosystems in Europe. The designated search area was 15 km from the Project for Natura 2000 sites and presented in Figure 8.

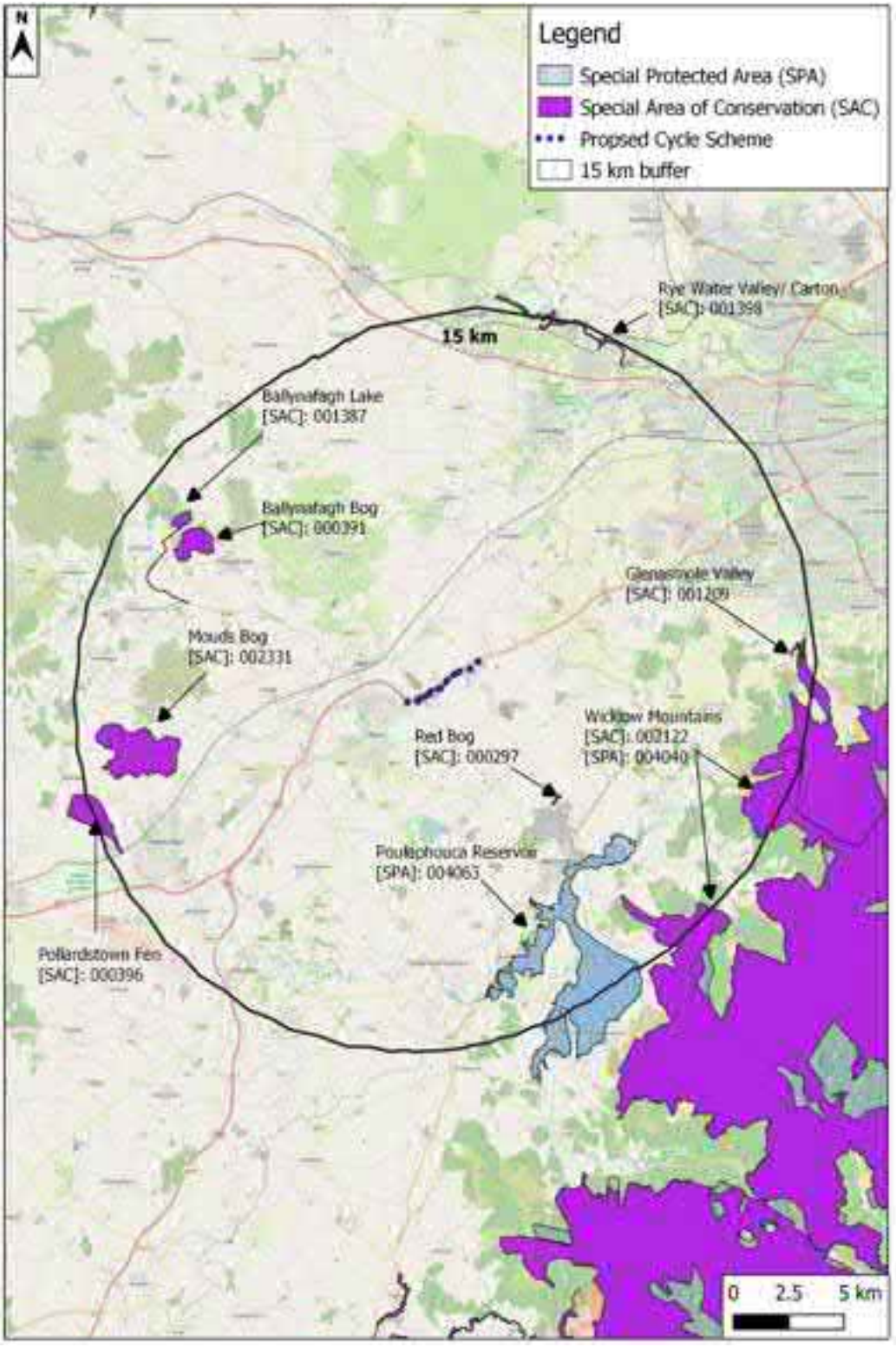


Figure 8: Natura 2000 sites within 15km of Project Proposal

10 Natura 2000 site (sites of international importance) have been identified as occurring within 15 km of the project (Table 1).

- Red Bog SAC (ca. 7 km south-east);
- Poulaphouca Reservoir SPA (ca. 10 km south-east);
- Mouds Bog SAC (ca. 10.6 km west);
- Ballynafagh Bog SAC (ca. 10.9 km north-west);
- Ballynafagh Lake SAC (ca.12.7 km north-west);
- Pollardstown Fen SAC (ca. 14.3 km south-west);
- Glenasmole Valley SAC (ca. 14.4 km east);
- Wicklow Mountains SAC (ca. 14.6 km south-east);
- Wicklow Mountains SAC (ca. 14.6 km south-east);
- Rye Water Valley/Carton SAC (ca, 14.7 km north)

Table 1 Natura 2000 Site(s) within 15 km of Applicant Project

Natura 2000 Sites1	Distance to Applicant Site (km) By land & by water	Is this site relevant to your assessment – give reasons to justify your decision (Refer to Note below)
Red Bog SAC	By land: ca. 7 km By water: N/A	No. The project site is north-west of the Natura site. The Site and this SAC is not connected by a waterway as per the EPA mapping 2022. There are no habitat or species synergies between the Site and SAC.
Poulaphouca Reservoir SPA	By land: ca. 10 km By water: N/A	No. The project site is north-west of the Natura site. The Site and this SPA is not connected by a waterway as per the EPA mapping 2022. There are no habitat or species synergies between the Site and SPA.
Mouds Bog SAC	By land: ca. 10.6 km By water: N/A	No. The project site is east of the Natura site. There are no habitat or species synergies between the Site and SAC. There is no water connectivity between the Site and SAC.

[1] Natura 2000 Site details are available on http://webgis.npws.ie/npwsviewer/ or maybe obtained from internal mapping systems.

Natura 2000 Sites1	Distance to Applicant Site (km) By land & by water	Is this site relevant to your assessment – give reasons to justify your decision (Refer to Note below)
Ballynafagh Bog SAC	By land: ca. 10.9 km By water: N/A	No. The project site is south-east of the Natura site. There are no habitat or species synergies between the Site and SPA. There is no water connectivity between the Site and SPA.
Ballynafagh Lake SAC	By land: ca. 12.7 km By water: N/A	No The project site is south-east of the Natura site. There are no habitat or species synergies between the Site and SAC. There is no water connectivity between the Site and SAC.
Pollardstown Fen SAC	By land: ca. 14.3 km By water: N/A	No. The project site is north-east of the Natura site. There are no habitat or species synergies between the Site and SPA. There is no water connectivity between the Site and SPA.
Glenasmole Valley SAC	By land: ca. 14.4 km By water: N/A	No. The project site is west of the Natura site. there are no habitat or species synergies between the Site and SAC. There is no water connectivity between the Site and SAC.
Wicklow Mountains SAC	By land: ca. 14.6 km By water: N/A	No. The project site is north-west of the Natura site. There are no habitat or species synergies between the Site and SAC. There is no water connectivity between the Site and SAC. Furthermore, due to scale of project, scale of industrialisation between site and Wicklow Mountains SAC and relative lack of proximity, Wicklow Mountains SAC is not relevant.
Wicklow Mountains SPA	By land: ca. 14.6 km By water: N/A	No. The project site is north-west of the Natura site. There are no habitat or species synergies between the Site and SPA. There is no water connectivity between the Site and SPA. Furthermore, due to scale of project, scale of industrialisation between site and Wicklow Mountains SPA and relative lack of proximity, Wicklow Mountains SPA is not relevant.
Rye Water Valley/Carton SAC	By land: ca. 14.7 km	No. The project site is south of the Natura site. There are no habitat or

Natura 2000 Sites1	Distance to Applicant Site (km) By land & by water	Is this site relevant to your assessment – give reasons to justify your decision (Refer to Note below)
	By water: ca. 19 km	species synergies between the Site and SAC. There is no water connectivity between the Site and SAC as stream courses are under road infrastructure. Furthermore, due to scale of project, scale of industrialisation between site and Rye Water Valley/ Carton SAC and relative lack of proximity, Rye Water Valley/ Carton SAC is not relevant.

A list of the conservation objectives can be found as follows - http://www.npws.ie/protected-sites/conservation-management-planning/conservation-objectives - select the relevant SAC/SPA and the "features of interest".

When a Natura 2000 site is proposed, a statement of its Conservation Objectives is produced by the National Parks & Wildlife Service (NPWS). This statement aims to define favourable conservation objectives to maintain at or restore to favourable conservation status those qualifying interests (SAC) or special conservation interests (SPA) for which a site is selected.

For some sites, the Conservation Objectives have been defined for the features of interests. For others that remain to be finalised, generic objectives are described. The Conservation Objectives are available via the above link.

4.0 STAGE 1 SCREENING ASSESSMENT CRITERIA

4.1 Describe any likely direct, indirect or secondary impacts of the Project (either alone or in combination with other plans or projects) on the Natura 2000 sites by virtue of:

Size and Scale	The proposed area for the Project is ca. 5.4 hectares in total on artificial surfaces. It will be similar in design to the pre-existing conditions.
Land-take	None from Natura 2000 sites. The closest Natura 2000 site is ca. 7 km in distance.
Distance from Natura 2000 site or key features of the site	The closest Natura site is 7 km south- east and is known as the Red Bog SAC. The next closest Natura 2000 site is the Poulaphouca Reservoir ca. 10 km in a south-easterly direction. Further Natura 2000 sites are listed above.
Resource requirements (water abstraction etc.)	No resources from a Natura site are required.

Emissions (disposal to land, water or air)	**Air Emissions** Air emissions from the project Site are unlikely to cause impacts on the Natura 2000 sites due to the nature of Project proposals and relative lack of proximity. Furthermore, Project proposal is to encourage more cyclists to utilise path route, reducing carbon emissions from vehicular movements. **Surface and Groundwater** Surface and groundwater conditions will remain unchanged. Project design will not remove existing drainage infrastructure.
Excavation requirements	There are no excavation requirements within the Natura 2000 sites.
Transportation requirements	No traffic movements will affect Natura 2000 sites.
Duration of construction, operation, decommissioning etc.	The development of the Site is likely to extend over the short-term e.g. c. 1-2 years. As such, this will not cause any likely effect on the Natura 2000 site.
Other	None.

4.2 Describe any likely changes to the Site arising as a result of:

Reduction of habitat area	None to Natura 2000 sites.
Disturbance to key species	Disturbance to Natura qualifying species is considered to be improbable. Disturbance to transient species will be negligible as objective will encourage cyclists and minimise noise impacts from cars and other vehicles.
Habitat or species fragmentation	There will be no habitat or species fragmentation. The Site is not part of the Natura 2000 sites in question and no resources are required from it. Designated habitats and species of the SAC will not be impacted given their distance from the existing Site.
Reduction in species density	No reduction in species density is anticipated.
Changes in key indicators of conservation value (water quality etc.	None.
Climate change	Anticipated results of cycle infrastructure will reduce carbon emissions.

4.3 Describe any likely impacts on the Natura 2000 sites as a whole in terms of:

Interference with the key relationships that define the structure of the site:	No impacts are likely.
Interference with key relationships that define the function of the site	No impacts are likely.

4.4 Provide indicators of significance as a result of the identification of effects set out above in terms of:

Loss (Estimated percentage of lost area of habitat)	There will be no habitat loss.
Fragmentation	There will be no habitat fragmentation.
Disruption and disturbance	Disturbance and disruption to species is considered highly unlikely. Species for which the Natura 2000 sites have been designated for are highly unlikely to utilise the Site or be influenced by the Site in terms of water quality due to distance and a lack of environmental connectivity between sites.
Change to key elements of the site (e.g. water quality etc.)	None.

4.5 Cumulative Impact

Cumulative impacts are defined as impacts that result from incremental changes caused by other past, present or reasonably foreseeable actions together with the project (European Communities, 1999). A review of the Kildare County Council planning website was undertaken for details of other developments in the area which may lead for the potential for cumulative impacts to arise. At this point in time, it is considered unlikely that cumulative impacts will contribute to an adverse effect to the nearest Natura 2000 site.

4.6 Describe from the above those elements of the project or plan, or combination of elements, where the above impacts are likely to be significant or where the scale or magnitude of impacts is unknown

The proposed Project is not located within, or directly adjacent to, any European site. The Appropriate Assessment screening process considered potential impacts which may arise during the construction and operation of the Project.

Through an assessment of the pathways for effects and an evaluation of the Project, taking account of the processes involved and the significant distance of separation between European sites in the wider study area, it has been evaluated that there are no likely significant adverse effects on the qualifying interests or the conservation objectives of any designated European site.

In conclusion, it has been evaluated that there are no likely significant adverse effects arising from the proposed Project to any European site, whether direct, indirect, or in-combination, to the conservation objectives of the habitats or species for which it was designated, either alone or in combination with other plans or projects. Consequently, this proposed development does not need to advance in the Appropriate Assessment process or require a Natura Impact Statement.

5.0 DATA COLLECTED TO CARRY OUT THE ASSESSMENT

The assessment was carried out by:

Emma Gilmartin- Environmental Scientist- Golder Associates.

Reviewed by:

Freddy Brookes (MSc., MCIEEM)– Senior Ecologist-Golder Associates.

Sources of Data:

Existing information from project description and records, NPWS, GSI, EPA and kildare.ie/countycouncil

Level of assessment completed:

Field Survey, Desktop study and Screening report.

Signature Page

Golder Associates Ireland Ltd

Emma Gilmartin
Environmental Scientist

Freddy Brookes
Senior Ecologist

Registered in Ireland

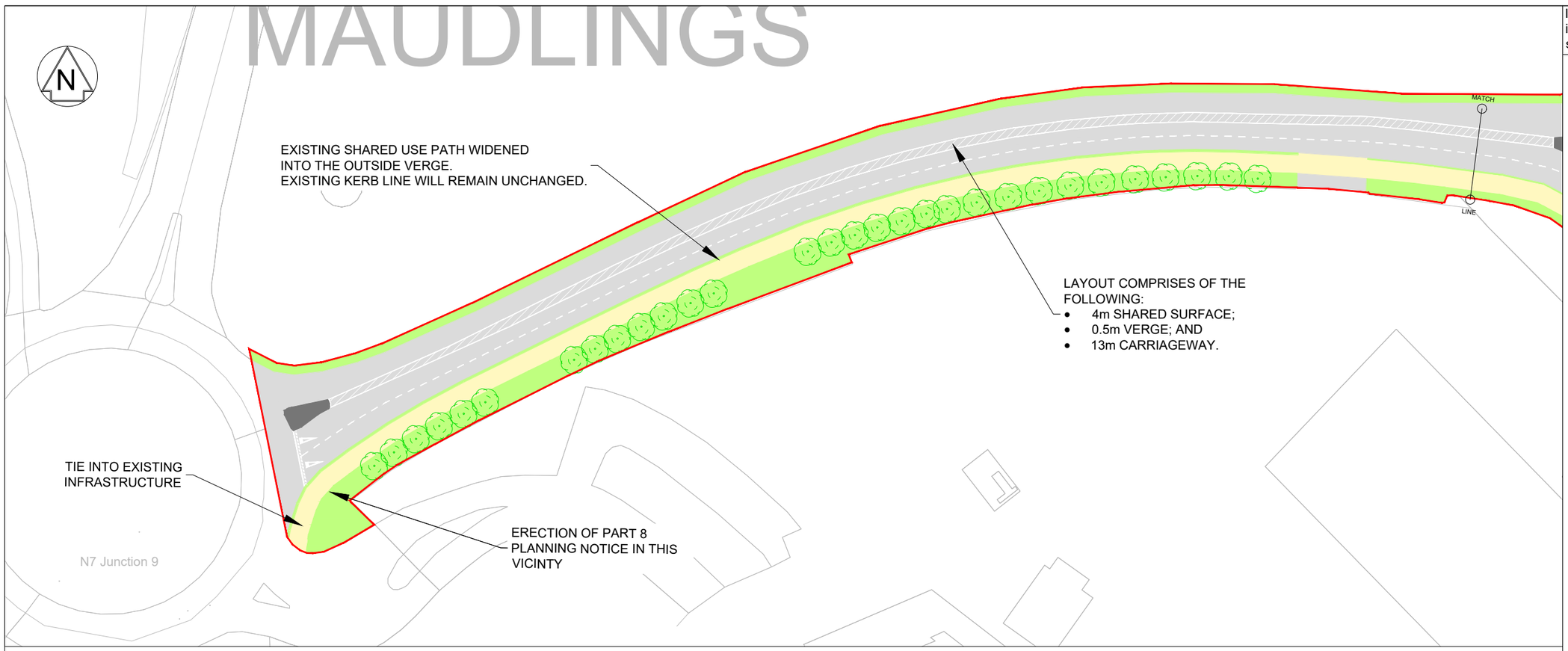
Registration No.302231

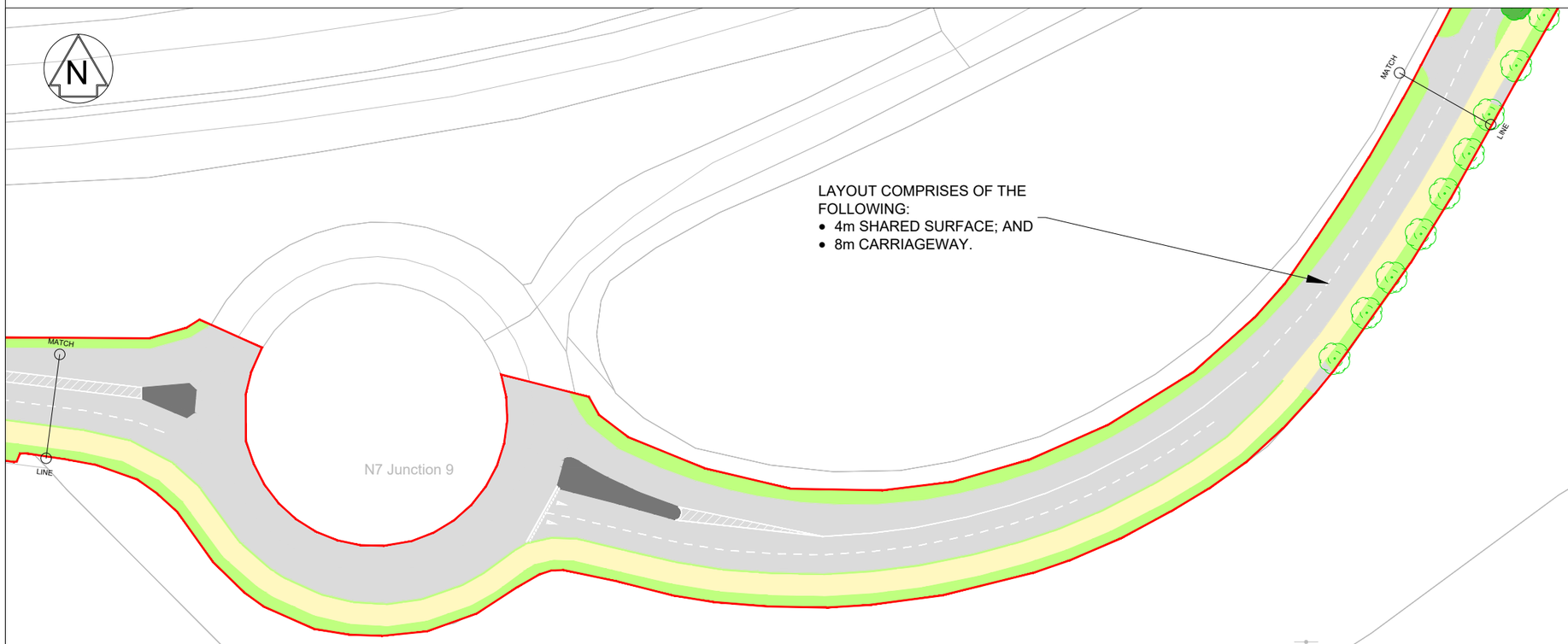
At Town Centre House, Dublin Road, Naas, Co. Kildare, W91 TD0P,Ireland

VAT No. 6322231R

APPENDIX A

Drawings





Information contained in this drawing is indicative only. Details to be confirmed during site survey.

LEGEND:

- PART 8 PLANNING BOUNDARY
- CARRIAGEWAY
- FOOTPATH
- CYCLE TRACK
- SHARED CYCLE AND PEDESTRIAN AREA
- BUFF CARRIAGEWAY - SCHOOL ZONE
- GRASSED AREA
- TACTILE PAVING FOR UNCONTROLLED CROSSING
- TACTILE PAVING FOR CONTROLLED CROSSING
- CORDUROY TACTILE PAVING
- RAISED SURFACE
- EXISTING TREE TO BE RETAINED
- EXISTING TREE TO BE REMOVED
- PROPOSED TREE
- PENCIL BOLLARDS
- PUBLIC REALM ENHANCEMENT

Rev	Drawn / Des	Checked	Approved	Date
C	J.FERGUSON	D.KEANE	D.KEANE	17/08/2022
B	J. SCOTT	D.KEANE	D. KEANE	21/07/2022

Description

Drawing Status: PART 8 PLANNING ISSUE | Suitability: S0

Client: Kildare County Council

Údarás Náisiúnta Iompair
National Transport Authority

wsp

Drawing Title
P82022.17 PROPOSED NAAS TO KILL CYCLE SCHEME
PART 8 PLANNING
SHEET 1 OF 8

Scale	Designed / Drawn	Checked	Approved	Authorised
1 : 500	M. MC ELRONE	D. KEANE	D. KEANE	C. BELL
Original Size	**Date**	**Date**	**Date**	**Date**
A1	14/07/2022	20/07/2022	20/07/2022	20/07/2022

Drawing Number: Project | Originator | Volume
40000089-WSP-DG-HW-0106-01
Location | Type | Role | Number

Revision: C

Millimetres 100 0 10 DO NOT SCALE

Plotted: Aug 22, 2022 - 1:53pm by: UKJRF004

Millimetres 100 0 10

DO NOT SCALE

CARRIAGEWAY WIDTH REDUCED TO 6m ON APPROACH TO JOHNSTOWN VILLAGE

MATCH LINE

LAYOUT COMPRISES OF THE FOLLOWING:
- 4m SHARED SURFACE;
- 1-2m VERGE; AND
- 6m CARRIAGEWAY.

ERECTION OF PART 8 PLANNING NOTICE IN THIS VICINITY

1 1

18 PARKING SPACES TO BE REMOVED ON NORTH SIDE OF THE ROAD

ERECTION OF PART 8 PLANNING NOTICE IN THIS VICINITY

PROVISION OF 5 NO. SHEFFIELD BICYCLE PARKING STANDS

RIVER MORELL

TRANSITION FROM SHARED USE PATH INTO BIDIRECTIONAL CYCLE TRACK

6 PARKIING SPACES TO BE REMOVED ON THE SOUTH SIDE OF THE ROAD

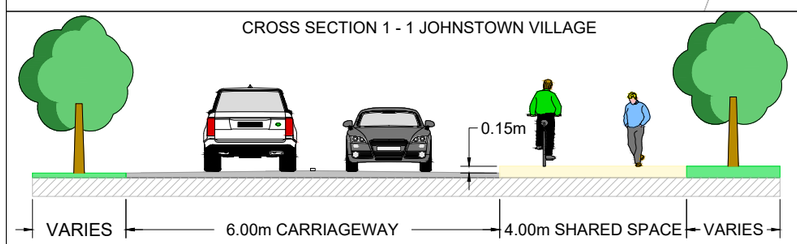
3m BIDIRECTIONAL CYCLE TRACK

BUS STOP LOCATION. EXACT DETAIL TO BE PROVIDED AT DETAILED DESIGN

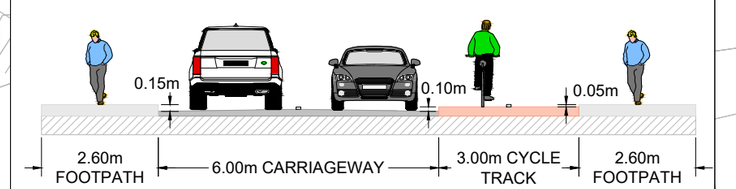
JUNCTION REALIGNED TO ACCOMMODATE NEW LAYOUT

JOHNSTOWN

CROSS SECTION 1 - 1 JOHNSTOWN VILLAGE



CROSS SECTION 2 - 2 JOHNSTOWN VILLAGE



EXISTING FOOTPATH, PARKING AND DRAINAGE CHANNEL ON THE NORTHERN SIDE OF THE ROAD WILL REMAIN UNCHANGED

CARRIAGEWAY WIDTH REDUCED TO 6m ON APPROACH TO JOHNSTOWN VILLAGE

MATCH LINE

BUS STOP LOCATION. EXACT DETAIL TO BE PROVIDED AT DETAILED DESIGN. SECTION OF EXISTING STONE WALL TO BE REMOVED AND EXISTING BUS SHELTER RELOCATED

LIGHTING COLUMN TO BE RELOCATED TO BACK OF FOOTPATH

JUNCTION REALIGNED TO ACCOMMODATE NEW LAYOUT

2 2

ERECTION OF PART 8 PLANNING NOTICE IN THIS VICINITY

VERGE SPACE REALLOCATED. FLOWERBEDS TO BE REMOVED

PROVISION OF 5 NO. SHEFFIELD BICYCLE PARKING STANDS

WATER PUMP RETAINED

PROPOSED PUBLIC SEATING LOCATION

TRANSITION FROM SHARED USE PATH INTO BIDIRECTIONAL CYCLE TRACK

JUNCTION REALIGNED TO ACCOMMODATE NEW LAYOUT

LAYOUT COMPRISES OF THE FOLLOWING:
- 2 X 2.6m FOOTPATH;
- 3m BIDIRECTIONAL CYCLE TRACK; AND
- 6m CARRIAGEWAY.

Information contained in this drawing is indicative only. Details to be confirmed during site survey.

LEGEND:

- PART 8 PLANNING BOUNDARY
- CARRIAGEWAY
- FOOTPATH
- CYCLE TRACK
- SHARED CYCLE AND PEDESTRIAN AREA
- BUFF CARRIAGEWAY - SCHOOL ZONE
- GRASSED AREA
- TACTILE PAVING FOR UNCONTROLLED CROSSING
- TACTILE PAVING FOR CONTROLLED CROSSING
- CORDUROY TACTILE PAVING
- RAISED SURFACE
- EXISTING TREE TO BE RETAINED
- EXISTING TREE TO BE REMOVED
- PROPOSED TREE
- PENCIL BOLLARDS
- PUBLIC REALM ENHANCEMENT

Rev	Drawn / Des	Checked	Approved	Date
C	J.FERGUSON	D.KEANE	D.KEANE	17/08/2022
B	J. SCOTT	D.KEANE	D. KEANE	21/07/2022

Description

Drawing Status: PART 8 PLANNING ISSUE — Suitability: S0

Client: Kildare County Council

Údarás Náisiúnta Iompair National Transport Authority

wsp

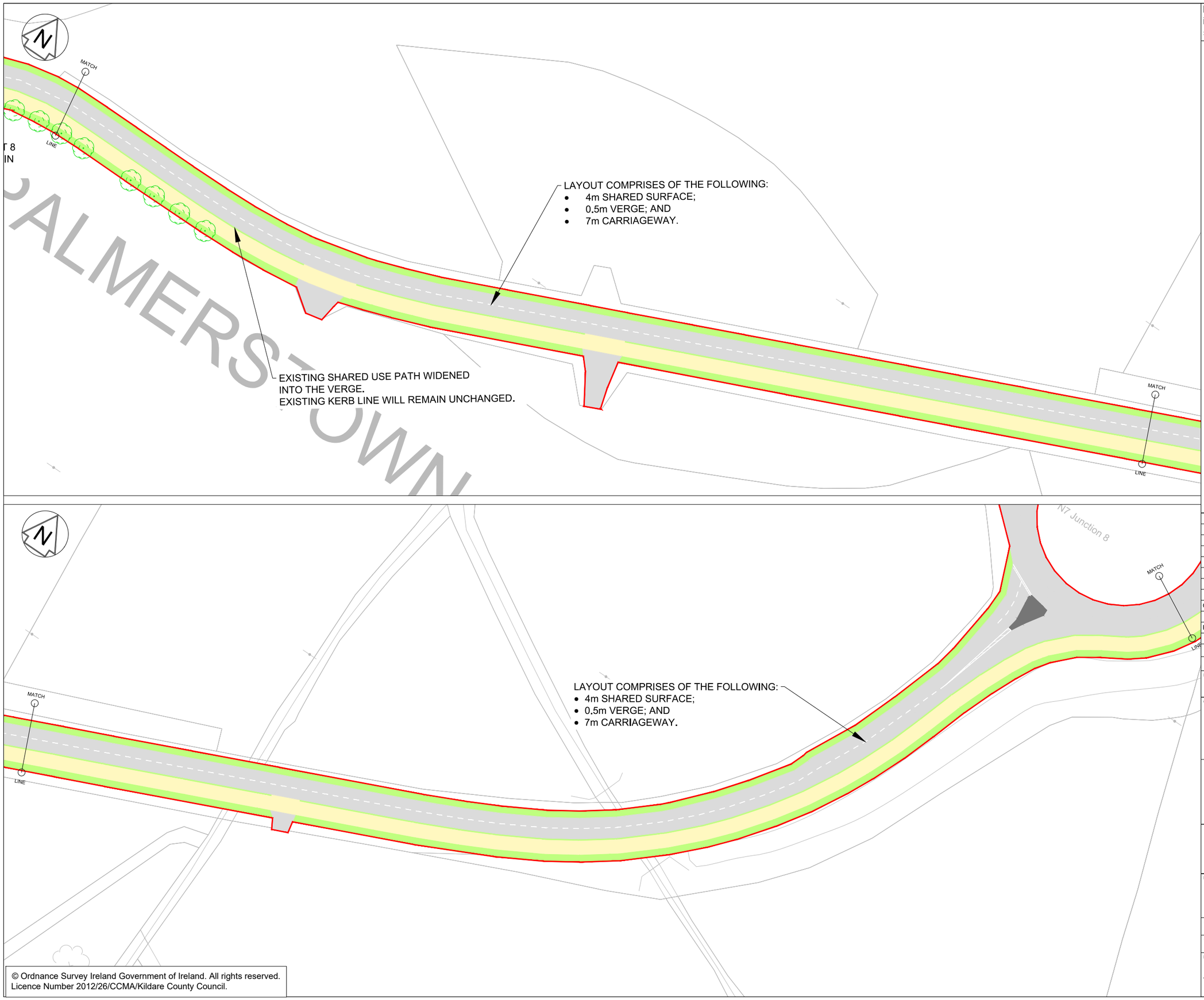
Drawing Title: P82022.17 PROPOSED NAAS TO KILL CYCLE SCHEME PART 8 PLANNING SHEET 2 OF 8

Scale	Designed / Drawn	Checked	Approved	Authorised
1 : 500	M. MC ELRONE	D. KEANE	D. KEANE	C. BELL
Original Size: A1	Date: 14/07/2022	Date: 20/07/2022	Date: 20/07/2022	Date: 20/07/2022

Drawing Number: Project | Originator | Volume | Location | Type | Role | Number
40000089-WSP-DG-HW-0106-02

Revision: C

Plotted: Aug 22, 2022 - 1:55pm by: UKJRF004



Information contained in this drawing is indicative only. Details to be confirmed during site survey.

LEGEND:

- PART 8 PLANNING BOUNDARY
- CARRIAGEWAY
- FOOTPATH
- CYCLE TRACK
- SHARED CYCLE AND PEDESTRIAN AREA
- BUFF CARRIAGEWAY - SCHOOL ZONE
- GRASSED AREA
- TACTILE PAVING FOR UNCONTROLLED CROSSING
- TACTILE PAVING FOR CONTROLLED CROSSING
- CORDUROY TACTILE PAVING
- RAISED SURFACE
- EXISTING TREE TO BE RETAINED
- EXISTING TREE TO BE REMOVED
- PROPOSED TREE
- PENCIL BOLLARDS
- PUBLIC REALM ENHANCEMENT

Rev	Drawn / Des	Checked	Approved	Date
C	J.FERGUSON	D.KEANE	D.KEANE	17/08/2022
B	J. SCOTT	D.KEANE	D. KEANE	21/07/2022

Description

Drawing Status: PART 8 PLANNING ISSUE
Suitability: S0

Client: Kildare County Council

Údarás Náisiúnta Iompair
National Transport Authority

wsp

Drawing Title:
P82022.17 PROPOSED NAAS TO KILL CYCLE SCHEME
PART 8 PLANNING
SHEET 3 OF 8

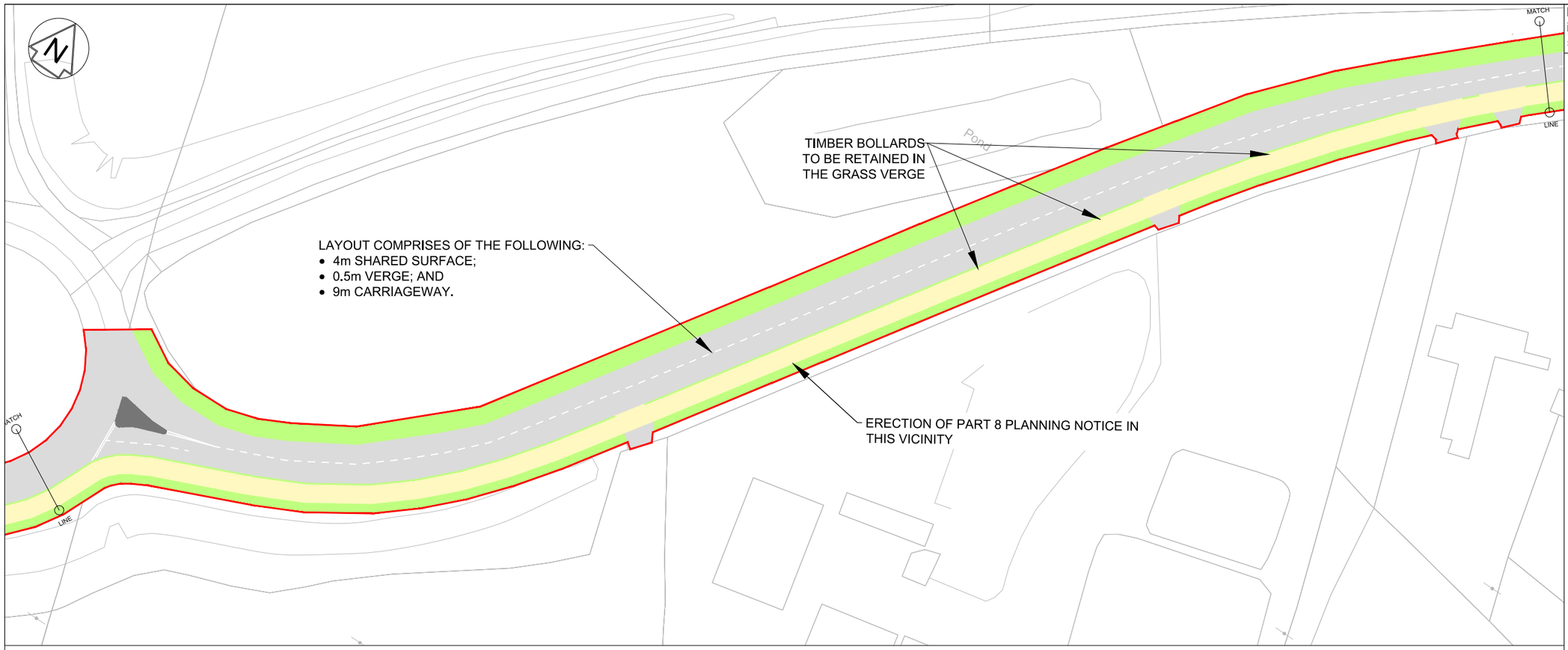
Scale	Designed / Drawn	Checked	Approved	Authorised
1 : 500	M. MC ELRONE	D. KEANE	D. KEANE	C. BELL
Original Size: A1	Date: 14/07/2022	Date: 20/07/2022	Date: 20/07/2022	Date: 20/07/2022

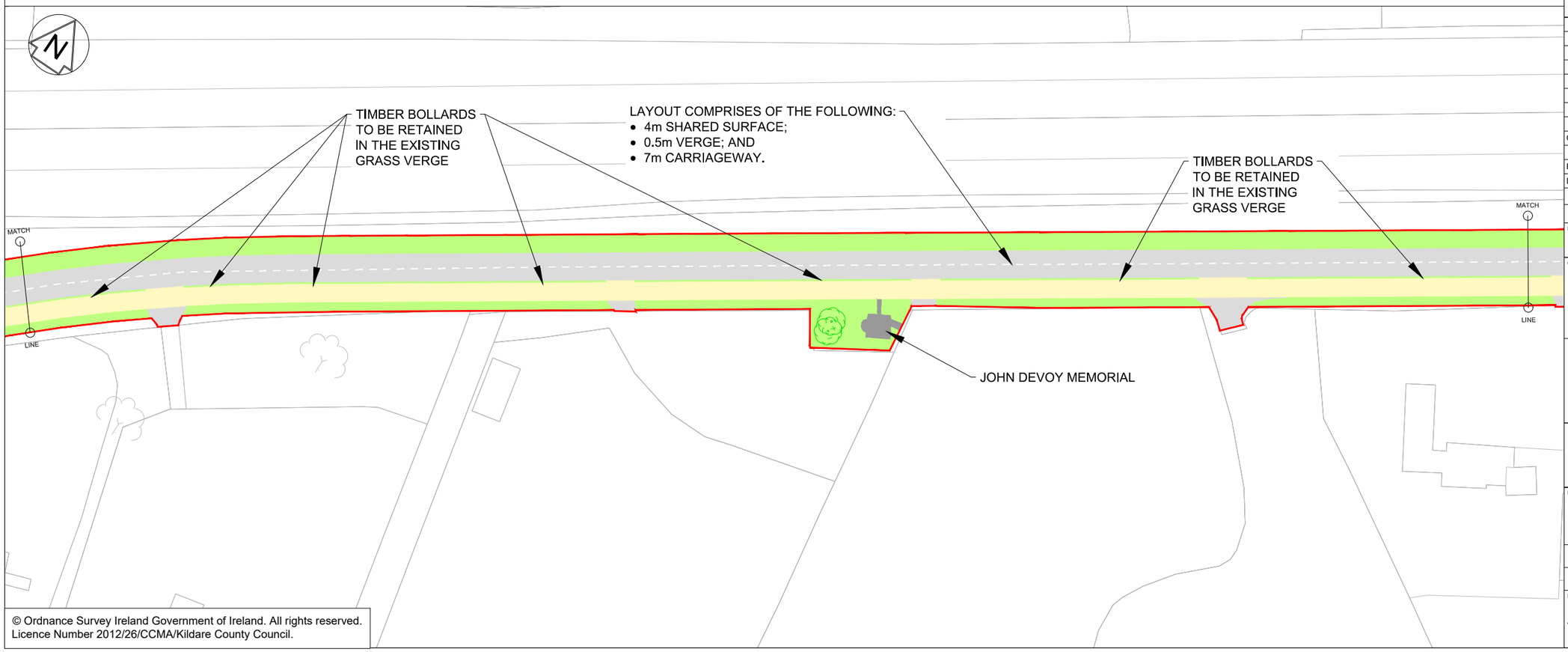
Drawing Number: 40000089-WSP-DG-HW-0106-03
(Project | Originator | Volume | Location | Type | Role | Number)

Revision: C

Millimetres 0 10 100
DO NOT SCALE

Plotted: Aug 22, 2022 - 1:56pm by: UKJRF004





Information contained in this drawing is indicative only. Details to be confirmed during site survey.

LEGEND:

- PART 8 PLANNING BOUNDARY
- CARRIAGEWAY
- FOOTPATH
- CYCLE TRACK
- SHARED CYCLE AND PEDESTRIAN AREA
- BUFF CARRIAGEWAY - SCHOOL ZONE
- GRASSED AREA
- TACTILE PAVING FOR UNCONTROLLED CROSSING
- TACTILE PAVING FOR CONTROLLED CROSSING
- CORDUROY TACTILE PAVING
- RAISED SURFACE
- EXISTING TREE TO BE RETAINED
- EXISTING TREE TO BE REMOVED
- PROPOSED TREE
- PENCIL BOLLARDS
- PUBLIC REALM ENHANCEMENT

Rev	Drawn / Des	Checked	Approved	Date
C	J.FERGUSON	D.KEANE	D.KEANE	17/08/2022
B	J. SCOTT	D.KEANE	D. KEANE	21/07/2022
Draft				

Description

Drawing Status: PART 8 PLANNING ISSUE | Suitability: S0

Client: Kildare County Council

Údarás Náisiúnta Iompair
National Transport Authority

wsp

Drawing Title
P82022.17 PROPOSED NAAS TO KILL CYCLE SCHEME
PART 8 PLANNING
SHEET 4 OF 8

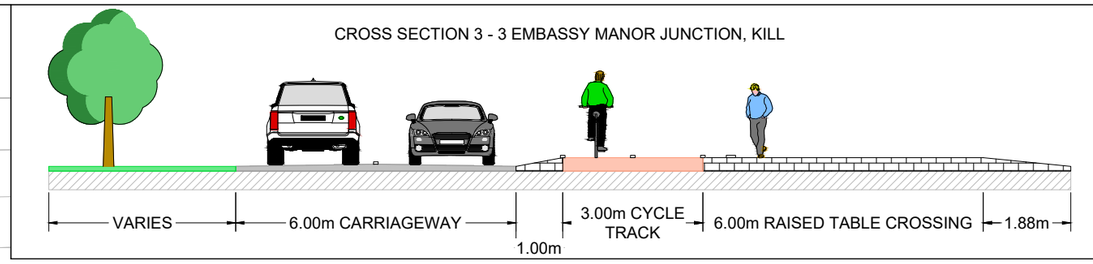
Scale	Designed / Drawn	Checked	Approved	Authorised
1 : 500	M. MC ELRONE	D. KEANE	D. KEANE	C. BELL
Original Size	**Date**	**Date**	**Date**	**Date**
A1	14/07/2022	20/07/2022	20/07/2022	20/07/2022

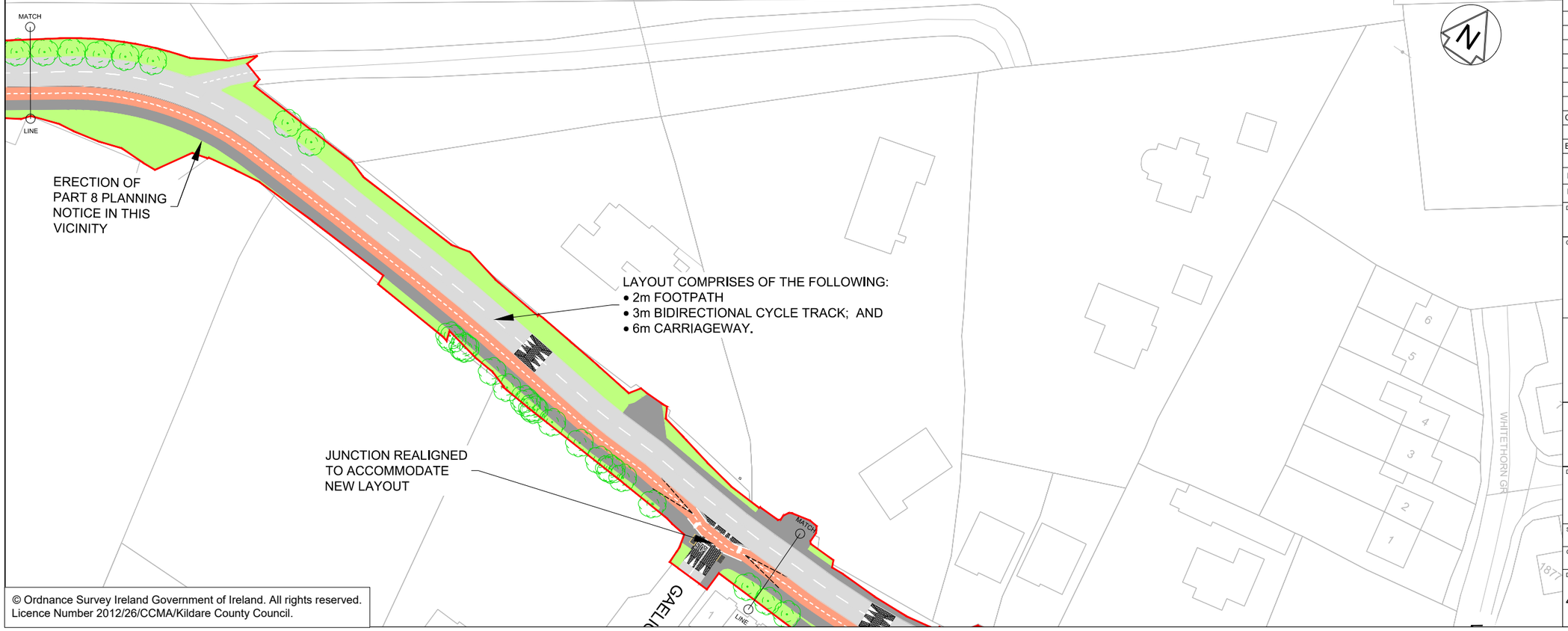
Drawing Number: Project | Originator | Volume
40000089-WSP-DG-HW-0106-04
Location | Type | Role | Number

Revision: C

Millimetres 100 0 10
DO NOT SCALE

Plotted: Aug 22, 2022 - 1:57pm by: UKJRF004





Information contained in this drawing is indicative only. Details to be confirmed during site survey.

LEGEND:

- PART 8 PLANNING BOUNDARY
- CARRIAGEWAY
- FOOTPATH
- CYCLE TRACK
- SHARED CYCLE AND PEDESTRIAN AREA
- BUFF CARRIAGEWAY - SCHOOL ZONE
- GRASSED AREA
- TACTILE PAVING FOR UNCONTROLLED CROSSING
- TACTILE PAVING FOR CONTROLLED CROSSING
- CORDUROY TACTILE PAVING
- RAISED SURFACE
- EXISTING TREE TO BE RETAINED
- EXISTING TREE TO BE REMOVED
- PROPOSED TREE
- PENCIL BOLLARDS
- PUBLIC REALM ENHANCEMENT

Rev	Drawn / Des	Checked	Approved	Date
C	J.FERGUSON	D.KEANE	D.KEANE	17/08/2022
B	J. SCOTT	D.KEANE	D. KEANE	21/07/2022

Description

Drawing Status: PART 8 PLANNING ISSUE | Suitability: S0

Client: Kildare County Council

Údarás Náisiúnta Iompair
National Transport Authority

wsp

Drawing Title
P82022.17 PROPOSED NAAS TO KILL CYCLE SCHEME
PART 8 PLANNING
SHEET 5 OF 8

Scale	Designed / Drawn	Checked	Approved	Authorised
1 : 500	M. MC ELRONE	D. KEANE	D. KEANE	C. BELL
Original Size	**Date**	**Date**	**Date**	**Date**
A1	14/07/2022	20/07/2022	20/07/2022	20/07/2022

Drawing Number: Project | Originator | Volume
40000089-WSP-DG-HW-0106-05
Location | Type | Role | Number

Revision: C

Millimetres 0 10 100 DO NOT SCALE

Plotted: Aug 22, 2022 - 1:59pm by: UKJRF004

Millimetres 100 0 10

DO NOT SCALE

JUNCTION REALIGNED TO ACCOMMODATE NEW LAYOUT

EXISTING RAISED TABLE ON THE MAIN CARRIAGEWAY TO BE REMOVED

WHITETHORN GROVE

1 PARKING SPACE TO BE REMOVED

BUS STOP LOCATION. EXACT DETAIL TO BE PROVIDED AT DETAILED DESIGN

CYCLE TRACK NARROWED TO 2m LOCALLY TO AVOID REMOVAL OF TREES

JUNCTION REALIGNED TO ACCOMMODATE NEW LAYOUT

THE GABLES

PROPOSED PUBLIC SEATING LOCATIONS

ERECTION OF PART 8 PLANNING NOTICE IN THIS VICINITY

CYCLE TRACK NARROWED TO 2m LOCALLY TO AVOID FACILITATE CAR PARKING SPACES

MATCH

LINE

LAYOUT COMPRISES OF THE FOLLOWING:
- 2 X 2m (MIN.) FOOTPATH
- 3m BIDIRECTIONAL CYCLE TRACK; AND
- 6m CARRIAGEWAY.

ACCESS REALIGNED TO ACCOMMODATE NEW LAYOUT

PROVISION OF 9 NO. SHEFFIELD BICYCLE PARKING STANDS

ACCESS REALIGNED TO ACCOMMODATE NEW LAYOUT

BUS STOP LOCATION. EXACT DETAIL TO BE PROVIDED AT DETAILED DESIGN

ERECTION OF PART 8 PLANNING NOTICE IN THIS VICINITY

2 PARKING SPACES TO BE REMOVED

2 PARKING SPACES TO BE REMOVED

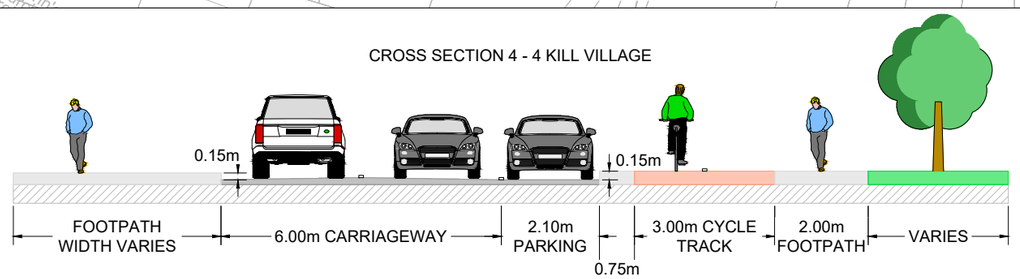
ACCESS REALIGNED TO ACCOMMODATE NEW LAYOUT

RAISED SIGNALISED TOUCAN CROSSING

JUNCTION REALIGNED TO ACCOMMODATE NEW LAYOUT

3 PARKING SPACES TO BE REMOVED

CROSS SECTION 4 - 4 KILL VILLAGE



Information contained in this drawing is indicative only. Details to be confirmed during site survey.

LEGEND:

- PART 8 PLANNING BOUNDARY
- CARRIAGEWAY
- FOOTPATH
- CYCLE TRACK
- SHARED CYCLE AND PEDESTRIAN AREA
- BUFF CARRIAGEWAY - SCHOOL ZONE
- GRASSED AREA
- TACTILE PAVING FOR UNCONTROLLED CROSSING
- TACTILE PAVING FOR CONTROLLED CROSSING
- CORDUROY TACTILE PAVING
- RAISED SURFACE
- EXISTING TREE TO BE RETAINED
- EXISTING TREE TO BE REMOVED
- PROPOSED TREE
- PENCIL BOLLARDS
- PUBLIC REALM ENHANCEMENT

Rev	Drawn / Des	Checked	Approved	Date
C	J.FERGUSON	D.KEANE	D.KEANE	17/08/2022
B	J. SCOTT	D.KEANE	D. KEANE	21/07/2022

Description

Drawing Status: PART 8 PLANNING ISSUE — Suitability: S0

Client: Kildare County Council

Údarás Náisiúnta Iompair National Transport Authority

wsp

Drawing Title: P82022.17 PROPOSED NAAS TO KILL CYCLE SCHEME PART 8 PLANNING SHEET 6 OF 8

Scale	Designed / Drawn	Checked	Approved	Authorised
1 : 500	M. MC ELRONE	D. KEANE	D. KEANE	C. BELL
Original Size: A1	Date: 14/07/2022	Date: 20/07/2022	Date: 20/07/2022	Date: 20/07/2022

Drawing Number: Project | Originator | Volume: 40000089-WSP-DG-HW-0106-06 — Location | Type | Role | Number

Revision: C

Plotted: Aug 22, 2022 - 2:00pm by: UKJRF004

Millimetres 100 0 10

DO NOT SCALE

ACCESS REALIGNED TO ACCOMMODATE NEW LAYOUT

BUS STOP LOCATION. EXACT DETAIL TO BE PROVIDED AT DETAILED DESIGN

3 PARKING SPACES TO BE REMOVED

SCHOOL ZONE ROAD MARKINGS

PROPOSED RAISED TABLE TOUCAN CROSSING

EXISTING GUARD RAILS ON NORTHERN AND SOUTHERN SIDE OF THE ROAD ARE TO BE REPLACED WITH PENCIL BOLLARDS, WHERE REQUIRED

EXISTING MINI ROUNDABOUT TO BE REMOVED AS PART OF THE JUNCTION UPGRADE

MATCH

LINE

RIVER LAWNS

5

5

PROPOSED PUBLIC SEATING LOCATION

JUNCTION REALIGNED TO ACCOMMODATE NEW LAYOUT

EXISTING RAISED TABLE ON THE MAIN CARRIAGEWAY TO BE REMOVED

TRANSITION FROM SHARED PATH INTO BIDIRECTIONAL CYCLE TRACK

ERECTION OF PART 8 PLANNING NOTICE IN THIS VICINITY

JUNCTION REALIGNED TO ACCOMMODATE NEW LAYOUT

ROCHFORD AVENUE

EARL'S COURT

THE PARK

THE AVENUE

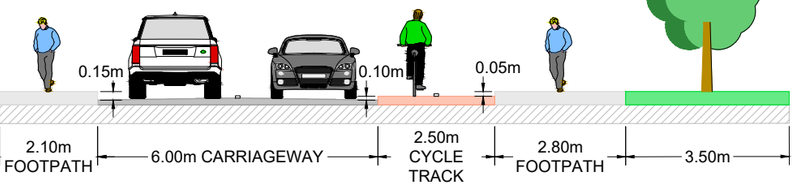
Saint Brigid's Catholic Church

Saplings Special School

Scoil Naisiunta Bhride

An Chill

CROSS SECTION 5 - 5 KILL VILLAGE



SCHOOL ZONE ROAD MARKINGS

ERECTION OF PART 8 PLANNING NOTICE IN THIS VICINITY

LAYOUT COMPRISES OF THE FOLLOWING:
- 2m FOOTPATH
- 3m BIDIRECTIONAL CYCLE TRACK; AND
- 6m CARRIAGEWAY.

PENCIL BOLLARDS

JUNCTION REALIGNED TO ACCOMMODATE NEW LAYOUT

Car Park

School

Scoil Bhride

THE GREEN

EARL'S COU

Information contained in this drawing is indicative only. Details to be confirmed during site survey.

LEGEND:

- PART 8 PLANNING BOUNDARY
- CARRIAGEWAY
- FOOTPATH
- CYCLE TRACK
- SHARED CYCLE AND PEDESTRIAN AREA
- BUFF CARRIAGEWAY - SCHOOL ZONE
- GRASSED AREA
- TACTILE PAVING FOR UNCONTROLLED CROSSING
- TACTILE PAVING FOR CONTROLLED CROSSING
- CORDUROY TACTILE PAVING
- RAISED SURFACE
- EXISTING TREE TO BE RETAINED
- EXISTING TREE TO BE REMOVED
- PROPOSED TREE
- PENCIL BOLLARDS
- PUBLIC REALM ENHANCEMENT

Rev	Drawn / Des	Checked	Approved	Date
C	J.FERGUSON	D.KEANE	D.KEANE	17/08/2022
B	J. SCOTT	D.KEANE	D. KEANE	21/07/2022

Description

Drawing Status: PART 8 PLANNING ISSUE

Suitability: S0

Client: Kildare County Council

Údarás Náisiúnta Iompair
National Transport Authority

wsp

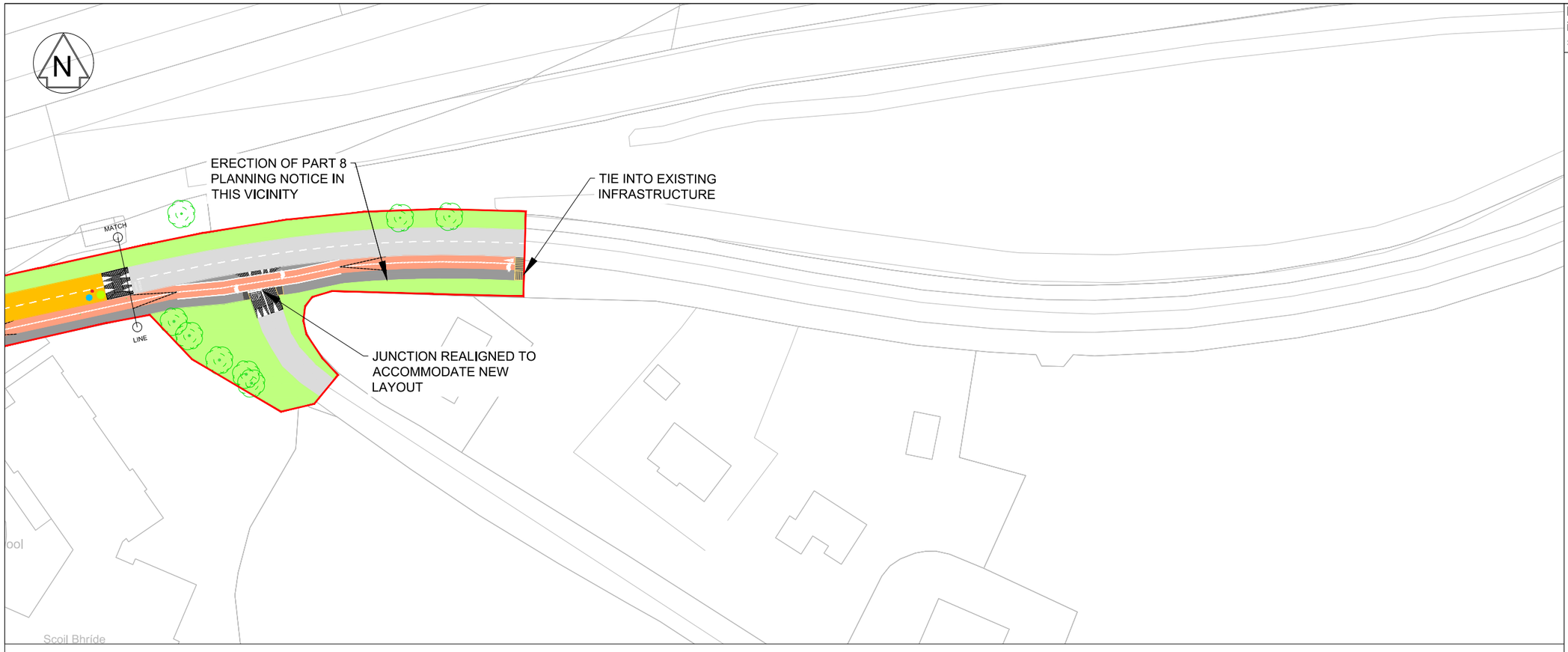
Drawing Title
P82022.17 PROPOSED NAAS TO KILL CYCLE SCHEME
PART 8 PLANNING
SHEET 7 OF 8

Scale	Designed / Drawn	Checked	Approved	Authorised
1 : 500	M. MC ELRONE	D. KEANE	D. KEANE	C. BELL
Original Size	**Date**	**Date**	**Date**	**Date**
A1	14/07/2022	20/07/2022	20/07/2022	20/07/2022

Drawing Number
Project | Originator | Volume
40000089-WSP-DG-HW-0106-07
Location | Type | Role | Number

Revision: C

Plotted: Aug 22, 2022 - 2:01pm by: UKJRF004



Millimetres 100 0 10 DO NOT SCALE

Information contained in this drawing is indicative only. Details to be confirmed during site survey.

LEGEND:

- PART 8 PLANNING BOUNDARY
- CARRIAGEWAY
- FOOTPATH
- CYCLE TRACK
- SHARED CYCLE AND PEDESTRIAN AREA
- BUFF CARRIAGEWAY - SCHOOL ZONE
- GRASSED AREA
- TACTILE PAVING FOR UNCONTROLLED CROSSING
- TACTILE PAVING FOR CONTROLLED CROSSING
- CORDUROY TACTILE PAVING
- RAISED SURFACE
- EXISTING TREE TO BE RETAINED
- EXISTING TREE TO BE REMOVED
- PROPOSED TREE
- PENCIL BOLLARDS
- PUBLIC REALM ENHANCEMENT

Rev	Drawn / Des	Checked	Approved	Date
C	J.FERGUSON	D.KEANE	D.KEANE	17/08/2022
B	J. SCOTT	D.KEANE	D. KEANE	21/07/2022

Description

Drawing Status: PART 8 PLANNING ISSUE

Suitability: S0

Client: Kildare County Council

Údarás Náisiúnta Iompair
National Transport Authority

wsp

Drawing Title
P82022.17 PROPOSED NAAS TO KILL CYCLE SCHEME
PART 8 PLANNING
SHEET 8 OF 8

Scale	Designed / Drawn	Checked	Approved	Authorised
1 : 500	M. MC ELRONE	D. KEANE	D. KEANE	C. BELL
Original Size	**Date**	**Date**	**Date**	**Date**
A1	14/07/2022	20/07/2022	20/07/2022	20/07/2022

Drawing Number
Project | Originator | Volume
40000089-WSP-DG-HW-0106-08
Location | Type | Role | Number

Revision: C

Plotted: Aug 22, 2022 - 2:02pm by: UKJRF004

APPENDIX B

Arboricultural Assessment Report

Arboricultural Assessment Report

Naas to Kill Cycle Scheme

Co. Kildare

February 2022

TREESPACE

Trees • Woodland • Urban Forestry

DOCUMENT CONTROL SHEET

PROJECT NAME: Arboricultural Assessment – *an assessment of trees in relation to development.*

PROJECT REFERENCE: Naas to Kill Cycle Scheme

PROJECT LOCATION: Johnstown – Kill, Co Kildare

PREPARED FOR: Kildare County Council

PREPARED BY: Conor O Callaghan

POSITION HELD: Arborist

WORK DESCRIPTION: Field Assessor/Author

QUALIFICATIONS: MSc Arboriculture & Urban Forestry, BSc Forestry Management

CONTACT: info@treespace.ie

Contents

LIST OF TABLES

LIST OF FIGURES

1. INTRODUCTION

1.1. Instructions and Brief

1.1.1. Tree-space has been instructed to undertake a tree survey and arboricultural impact assessment for a proposed new cycle route between the villages of Kill and Johnstown in Co Kildare. The proposed cycle route is to provide new segregated cycle infrastructure and upgrade the existing infrastructure along the L2014 between Kill and Johnstown.

1.1.2. The report addresses the scope of works set out in the tree survey brief (Document Ref: 40000089-WSP-HW-0002) provided to Tree-space by WSP Ireland Consulting Limited. The field assessment was completed between the 13th and 16th of December 2021. The following documents were provided to Tree-space to inform the tree survey and report:

Table 1: List of drawings to inform the tree survey and report

Document Title	Document/Drawing Number	Originator
Extent of the tree survey	40000089-WSP-DG-HW-0001 (Rev-L02)	WSP
Topographical Survey	MSL12557_3DM1-ING (1,2 & 3)	MS
Proposed Route Layout	Not known	WSP

1.1.3. The report should be read in conjunction with the following Tree-space plans:

- Tree Constraints Plans: TS_TCP_20_12_21 (sheets 1 – 5).
- Tree Assessment Plans: TS_TAP_31_12_21 (sheets 1 – 5).
- Tree Removal & Protection Plans: TS_TPP_16_02_22 (sheets 1 – 5).

1.2. Aims and Approach

1.2.1. The purpose of this assessment is to quantify and categorise the arboricultural features on the site and assess the potential constraints to development. Trees are a material consideration for local authorities and tree owners. Whether they have statutory protection or not the potential impacts of construction must be considered. Construction activities often exert pressures on pre-existing trees and in some cases trees that have taken decades to mature can be damaged irreparably. The assessment and implementation of protection measures is therefore critical to mitigate against any potential negative impacts.

1.2.2. The arboricultural impact assessment was carried out in accordance with the British Standard *BS 5837:2012 Trees in relation to design, demolition, and construction – Recommendations*[1]. The British Standard sets out the principles and procedures to be applied to achieve a harmonious and sustainable relationship between trees and structures. The assessment process undertaken for this report is described in table two below.

Table 2: Arboricultural Impact Assessment Process

TASK	DESCRIPTION
Topographical survey	Record the position of all trees within the site with a stem diameter of 75mm or more, measured at 1.5m above highest adjacent ground level.
Tree survey	Collect relevant information on all trees included in the topographical survey, as well as any that might have been missed. The parameters of the tree survey are set out in BS5837:2012 section 4.4 and are described in more detail in appendix 2 of this report.
Tree categorization	Identify the quality and value of the existing tree population. The categorization method set out in table 1, BS5837:2012 allows informed decisions to be made concerning which trees should be removed or retained in the event of a development occurring. The tree quality assessment table is included in appendix 2 of this report.
Impact assessment	Identify the requirements for the successful retention of the retained trees and detail the measures necessary for protection during the development process. Root protection areas (RPA's) are calculated in accordance with section 4.6, BS5837:2012. The RPA is the minimum area around a tree that needs to remain undisturbed to maintain the tree's viability. The RPAs of each categorised tree will be plotted on relevant scaled drawings.
Tree protection plan	The tree protection plan indicates the precise location of the protective barriers to be erected to form a construction exclusion zone around the retained trees. The plan will be superimposed on the layout plan, based on the topographical survey.
Arboricultural method statement	Address some or all of the following: Pre-development tree works, site supervision, protective fencing, ground protection, boundary treatments, services and drainage, and monitoring.

[1] The British Standards Institution (2012) *Trees in relation to design, demolition, and construction – Recommendations.* BSI Standards Limited.

1.3. The Limitations of the Report

1.3.1. Only those trees specified in the scope of work were assessed. The observations that were made are limited to the requirements of planning and development. The survey is not a tree risk assessment.

1.3.2. The trees were visually assessed from ground level only. No climbing inspections were carried out. No invasive or other detailed internal decay detection devices were used.

1.3.3. Where trees were not recorded on the topographical survey, their positions have been plotted manually on the drawings and cross referenced using aerial imagery. The positions of these trees should be treated as approximate only.

1.3.4. The conclusions relate to the conditions found at the time of survey. Trees are living organisms that are subject to the stresses of climatic extremes, decay fungi and injurious diseases. There is no warranty or guarantee, expressed or implied, that problems or deficiencies of the trees in question may not arise in the future.

2. THE SCHEME

2.1. Description of the Scheme

2.1.1. The cycle scheme comprises of new bidirectional cycle track and shared paths along an approximately 4.4 km route between Kill and Johnstown villages. The bidirectional cycle path will run along the southern edge of the existing road carriageway. The path will transition into shared use areas on the existing footpaths along the route.

2.2. Spatial Scope

2.2.1. The tree survey targeted the trees within the red line area defined on the Tree Survey Boundary drawing (drawing ref: 40000089-WSP-DG-HW-0001). Where trees were established on adjacent lands outside the red line boundary but had the potential to be impacted upon, these trees were included in the survey.

2.2.2. The areas that were assessed are divided into two sections in Johnstown village and Kill village. The Johnstown section begins in the west of the village close to the roundabout on the R445. The section continues for approximately 800m to the east of the village where the land use changes to agricultural grazing.

Figure 1: *Aerial image of Johnstown village with the approximate boundary of the tree survey area outlined in red. The survey for this section began at the edge of the red line in the far left of the image. The tree numbering begins at this point on T615 and finishes in the east of the village on T681.*

2.2.3. The Kill section of the survey begins west of the village at the entrance to Embassy Manor. The survey area continues to the east through the Main Street in Kill for approximately 1200m. The survey area finishes in the eastern end of the village close to the entrance to Earls Court.

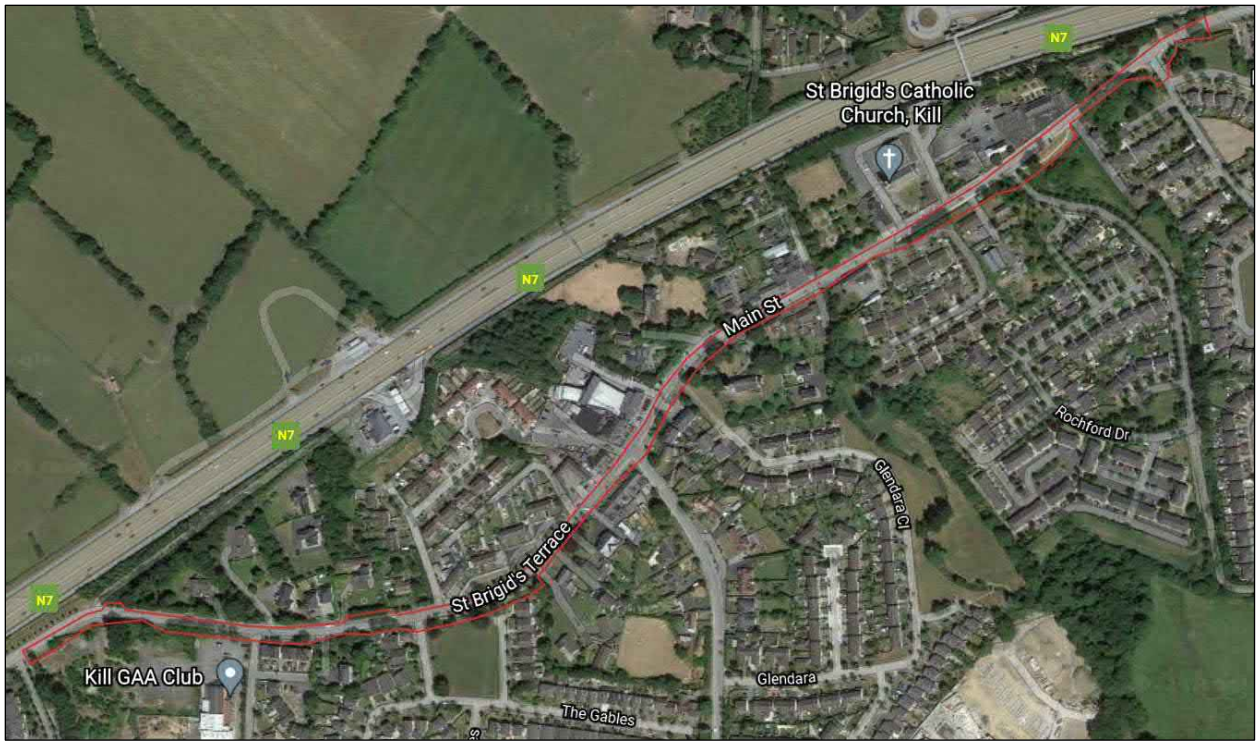


Figure 2: *Aerial image of Kill village with the approximate boundary of the tree survey area outlined in red. The tree survey for this section began at the edge of the redline in the far left of the image. The tree numbering begins on TG682 at this point and finishes in the east of the village on T803.*

3. THE TREES

3.1. General Description of the Trees

3.1.1. In total 188 individual trees and 5 tree groups were assessed for the project. The total number of trees including all the individuals in the tree groups is 238. The trees are established in narrow grass verges alongside the pavements and road edges. The canopies of the trees often extend over the pavement and road well above head height.

3.1.2. Twenty-six different tree species were identified along the route. The two most common species are ash and hornbeam, together accounting for 38% of the surveyed population. Eighty percent of the surveyed trees were in the young to early mature life stage. There is a very high proportion of the trees (91%) with good physiological condition. This is directly related to the high number of trees in the early stages of their life cycle.

3.1.3. Four trees were classified as being in the late mature stages of their life cycle. Two of these trees are old beech trees. One is established in the graveyard in Johnstown

village and the other in the churchyard on the Main Street in Kill. Using the method of White[2] the estimated age of the beech tree in Johnstown graveyard (tree number T640) is 160 years old and approximately 280 years old for the beech tree in the churchyard in Kill (tree number T761). Both trees are very prominent in the landscape, they have high amenity value and historic cultural significance. An image of each tree is included in the photographic summary in appendix 5 of this report.

3.1.4. Fifty percent of the surveyed population were classified as category A (see tree categorization table, appendix 2). The other fifty percent were classified as category B or category C with the highest proportion in B. The structural condition of the trees was good to fair with only four percent being in poor condition.

3.2. Tree Population Analysis Tables

3.2.1. The following tables present an analysis of the surveyed tree population. The analysis includes all the individual trees and the individual trees within the tree groups.

Species	Count	Percentage
Ash	46	19%
Hornbeam	45	19%
Silver Birch	36	15%
Large-leaved Lime	23	10%
Common Beech	20	8%
Leyland cypress	11	5%
Norway maple	10	4%
Rowan	7	3%
Sycamore	7	3%
Himalayan Birch	5	2%
Lawson cypress	4	2%
Whitebeam	4	2%
Cherry	3	1%
Copper plum	2	1%
Tree Cotoneaster	2	1%
Chusan Palm	2	1%
Cedar	2	1%
London Plane	2	1%
Hawthorn	1	0%
Grey willow	1	0%
Wych Elm	1	0%
Plum	1	0%
Monterey Cypress	1	0%
Apple	1	0%
Horse chestnut	1	0%
Grand Total	**238**	**100.00%**

Table 3: *Tree species list with count of individual trees per species and percentage of the total.*

[2] White, John (1998). *Estimating the age of large and veteran trees in Britain.* Forestry commission.

Life-Stage	Count	Percentage
Young	36	15%
Semi-mature	98	41%
Early mature	57	24%
Mature	43	18%
Late mature	4	2%
Total	**238**	**100%**

Table 4: *Count of life stage with percentage of the total.*

Remaining contribution (in years)	Count	Percentage
<10	0	0%
10-20	35	15%
20-40	75	32%
40+	128	54%
Total	**238**	**100%**

Table 5: *Count of remaining contribution in years with percentage of the total.*

Retention category (BS 5837)	Count	Percentage
A	119	50%
B	84	35%
C	35	15%
Total	**238**	**100%**

Table 6: *Count of the number of trees in each retention category with the percentage of the total.*

4. ARBORICULTURAL IMPACT ASSESSMENT

4.1. Tree Loss to Facilitate Development

4.1.1. The table below describes the trees that will be directly affected by the proposed cycle scheme. The impact for each individual tree is described in the Johnstown section and Kill section of the cycle route.

Table 7: Direct Loss of Trees and Tree Groups.

Tree No	Tree Species	CAT *BS5837*	Description of Impact
Johnstown Section			
T629	*Fagus sylvatica* Common Beech	C2	Direct conflict with carriageway widening for new raised crossing.
T630	*Fagus sylvatica* Common Beech	B2	Direct conflict with carriageway widening for new raised crossing.
T631	*Fagus sylvatica* Common Beech	A2	Direct conflict with carriageway widening and new raised crossing.
T641	*Sorbus aucuparia* Rowan	A2	Direct conflict with new alignment of the shared path and reallocated grass verge.
T642	*Sorbus aucuparia* Rowan	A2	Direct conflict with new alignment of the shared path and reallocated grass verge.
T643	*Sorbus aucuparia* Rowan	C2	Direct conflict with new alignment of the shared path and reallocated grass verge.
Kill Section			
T753	*Carpinus betulus* Hornbeam	A2	Direct conflict with alignment of new bidirectional cycle path.
T755 – T757	*Carpinus betulus* Hornbeam (x 3)	A2	Three trees in direct conflict with alignment of new bidirectional cycle path.
T767 – T769	*Carpinus betulus* Hornbeam (x 3)	A2	Three trees in direct conflict with alignment of new bidirectional cycle path.
T770	*Carpinus betulus* Hornbeam	A2	Direct conflict with alignment of new bidirectional cycle path.
T771	*Carpinus betulus* Hornbeam	A2	Direct conflict with alignment of new carriageway.
T772	*Carpinus betulus* Hornbeam	A2	Direct conflict with alignment of new bidirectional cycle path.
T785	*Acer pseudoplatanus* Sycamore	B2	Direct conflict with new shared path alignment.
Summary of Direct Loss of Trees			
• **In total 17 trees or 7% of the total surveyed tree population will be lost to facilitate the construction of the proposed cycle scheme.**			

- **9 category A trees (8% of the total CAT A) will be removed, 2 category B (2% of the total CAT B) and 2 category C tree (6% of the total CAT C).**

4.2. Additional Tree Loss

4.2.1. In the eastern end of Johnstown village there is a line of lime and ash trees. The trees are established in a narrow grass verge alongside where the land use changes to improved agricultural grazing. The lime trees are good quality and have the potential to mature and enhance the landscape. The ash trees are generally of a lower quality and their crowns are competing with the lime trees, suppressing their canopy development. It is recommended that ten of the ash trees are removed to allow the lime trees to develop freely. Out of the ten ash trees suggested for removal eight are category C and two are category B. Their tree numbers are specified in the tree works schedule in appendix 4 of this report.

4.3. Tree Pruning to Facilitate Development

4.3.1. Preconstruction phase tree pruning is not essential, however prior to the opening of the cycle scheme for public usage some tree safety issues will need to be addressed. Outside of the Kill GAA Club there are seven mature trees which have over extended limbs and deadwood accumulating in their crowns. It is recommended that the overextended limbs are shortened to reduce end weight and reduce the risk of failure. The crowns will also need to be cleaned of deadwood to prevent any potential conflicts with the new cycle path.

4.3.2. The cycle path will be constructed in close proximity to established trees along the route. It is recommended that a pre public usage tree inspection is carried out to assess headroom along the route and any post construction damage that may have introduced new defects to the retained trees.

4.4. Construction Activities & The Retained Trees

4.4.1. In total two hundred and twenty-two trees will be retained along the cycle route. The majority of these trees have the potential to be negatively impacted upon during the construction phase. To mitigate against any potential negative impacts the retained trees will be protected by barrier fencing during the construction phase. It is acknowledged that the fencing specification detailed in BS 5837 will not be practical to install along the route. The restricted space between the existing pavements and grass verges will limit the use of 2 m weld mesh fencing panels. An alternative fencing specification has been suggested in the arboricultural method statement in appendix 1 of this report.

4.4.2. There are twelve mature/late mature trees established in the grass verge outside of the Kill GAA club. The new proposed footpath alignment will encroach on the RPAs of the retained trees. It is suggested that a no-dig cellular confinement system with

porous asphalt is installed along this section to mitigate against any potential root severance from digging operations. The specific area is detailed with hatch on the tree removal and protection plan (TS_TPP_16_2_22, sheet 3). Some ground preparations are expected in the area. The ground preparations should ideally be carried out with an air spade/lance to prevent damage to the tree root systems.

4.5. Replacement Tree Planting

4.5.1. Seventeen trees will be lost to facilitate the development of the cycle scheme. It is suggested that seventeen new trees are established in suitable locations along the route post construction.

4.5.2. If the ten ash trees described in paragraph 4.2.1 of this report are removed the recommendation is that they are not replaced.

5. CONCLUSIONS

- The tree loss to facilitate the construction of the proposed scheme is not considered significant. Ninety three percent of the surveyed population will be retained.
- Significant effort has been made by the scheme designers to design a route that will retain as many trees as possible.
- The retained trees will be protected by barrier fencing during the construction phase.
- There is adequate space to compensate for the tree loss and establish new trees post construction.
- The arboricultural method statement in appendix 1 of this report addresses the following: preconstruction tree works, tree protective fencing, root management and construction phase monitoring and compliance.

Appendix 1

Arboricultural Method Statement

The following arboricultural method statement outlines the order of works and tree protection measures for the Naas to Kill Cycle Scheme. The method statement should be read in conjunction with the Tree Removal & Protection Plans (TS_TPP_16_2_22, sheets 1-5).

Pre-Construction Site Briefing

- Prior to the construction phase of the development a briefing should be arranged between the principal contractor and the retained consulting arborist. The objectives of the briefing will be to clarify the following:
    - Confirm the tree works to be undertaken.
    - Confirm the location of the tree protection fencing.
    - Review and raise awareness of sensitive areas on the site where mature trees and hedges are being retained.
    - Confirm the requirements for arboricultural monitoring for the duration of the construction phase.

Pre-Construction Tree Works

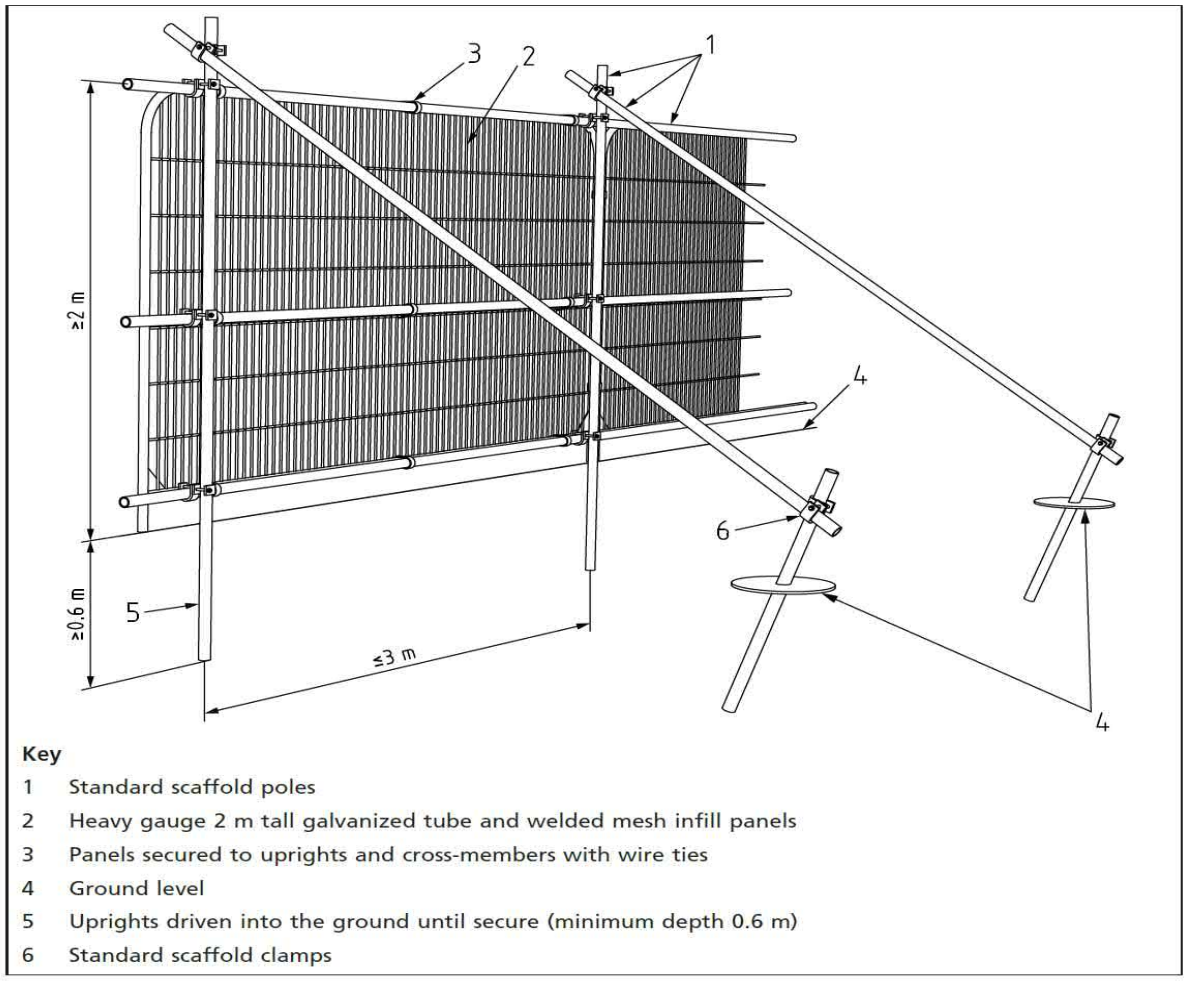
- The necessary tree works to facilitate the proposed development are described in the tree works schedule (appendix 4 of this report).
- The tree works schedule should be presented to the tree owner prior to any work being carried out. The tree owner must agree to the proposed works.
- All tree works will be carried out in accordance with the recommendations given in BS 3998 (2010).
- Prior to the commencement of any tree works, the trees and their surroundings should be assessed for the presence of any seasonal nesting sites, potential roost features or protected species.

Protective Fencing

- The tree protection fencing is designed to create a construction exclusion zone around the retained trees to protect the critical root mass from negative impacts.
- The alignment of the tree protection fencing largely follows the perimeter of the existing grass verges in sections along the route. The layout of the fencing should resemble what is detailed in the tree protection plans (TS_TPP_16_2_22, sheets 1-5)
- The tree protection fencing should be fit for purpose and well braced to resist impacts. It is acknowledged that the fencing configuration detailed in the British Standard (see image on the following page) would be impractical to install along the route. Two alternative fencing types have been provided.
- Signs will be erected on the fences stating ‘CONSTRUCTION EXCLUSION ZONE – NO ACCESS’.

- The main contractor will inform the client that the tree protection fencing, and signage is in place before construction activities commence.

BS 5837 British Standard Tree Protection Fencing:



Key

1 Standard scaffold poles
2 Heavy gauge 2 m tall galvanized tube and welded mesh infill panels
3 Panels secured to uprights and cross-members with wire ties
4 Ground level
5 Uprights driven into the ground until secure (minimum depth 0.6 m)
6 Standard scaffold clamps

ALTERNATIVE FENCING

Roots & Root Pruning

- It is possible that tree roots may be encountered when ground works begin along the route. It is recommended that rolls of hessian/jute are stored on site so that any exposed roots can be protected from drying out and desiccation occurring.
- Where tree roots are encountered in the working areas and cannot be moved out of the construction profile root pruning may be required. If root pruning is necessary, it should be carried out by a qualified arborist. The roots should be target pruned with a sharp secateurs or handsaw. Once pruning is complete the cut ends should be recovered with topsoil or hessian.

Monitoring & Compliance

- It is recommended that a qualified consulting arborist is assigned to the project for the duration of the construction phase.
- The responsibilities of the assigned arborist will include:
    - Bi-weekly checks on the tree protective fencing.
    - Monitoring the health and vitality of the retained trees.
    - Monitoring soil disturbance and root disturbance in the working areas.
    - Carry out any potential root pruning operations if necessary.

Appendix 2

Tree Schedule Key

Tree/Group number	Reference number for individual trees or groups of trees, prefixed by T (Tree), TG (Tree Group), W (Woodland), H (Hedge) or S (Shrub) to indicate the type of feature
Tree Count	Number of trees of a particular species recorded within a group feature, with the default value of 1 for single trees.
Species	Scientific name followed by common name
Height (m)	Tree height to the nearest metre, measured with a Haglofs Clinometer or estimated.
Stem Count	Number of stems. Stem count indicates whether the tree is single-stemmed or multi-stemmed and informs the RPA calculation.
Stem Diameter	Stem diameter measured at 1.5m above ground level in accordance with Annex C of BS5837:2012.
Crown Spread	Distance from the stem position to the crown periphery in the four cardinal directions.
First Significant Branch Height (m) – Direction of growth	Distance between the ground and lowest significant branch and the direction of growth.
Canopy Clearance Height (m)	Distance between the ground and the lowest point of the crown periphery, estimated to the nearest half metre.
Life-stage	Young, Semi-mature, Early-mature, Mature, Late Mature, Ancient or Veteran
Physiological Condition	Good, Normal, Fair, Poor, Dead
Observations	General description of the tree or tree group, including basic features and morphology, structural and physiological condition, growing conditions and surroundings.
Recommendations	Management recommendations for tree works to address immediate unacceptable risks, or to facilitate development proposals.
Estimated Remaining Contribution (years)	Estimated number of years for which the tree will continue to make a positive contribution to the site, banded as <10yrs, 10-20yrs, 20-40yrs, 40+.
Retention Category	Quality and value category as defined in table 1 of BS5837:2012 (see following page for full description)
Retention Sub-category	One or more sub-categories as defined in table 1 of BS5837:2012 (see following page for full description)

RPR (m)	Radius of the RPA, in metres, when this is plotted as a circle around the tree stem
RPA (m^3)	Root protection area calculated from the stem diameter according to the formula in BS5837:2012. The RPA is the minimum area required to maintain tree viability.

Table 1 Cascade chart for tree quality assessment

Category and definition	Criteria (including subcategories where appropriate)			Identification on plan
Trees unsuitable for retention (see Note)				
Category U Those in such a condition that they cannot realistically be retained as living trees in the context of the current land use for longer than 10 years	• Trees that have a serious, irremediable, structural defect, such that their early loss is expected due to collapse, including those that will become unviable after removal of other category U trees (e.g. where, for whatever reason, the loss of companion shelter cannot be mitigated by pruning) • Trees that are dead or are showing signs of significant, immediate, and irreversible overall decline • Trees infected with pathogens of significance to the health and/or safety of other trees nearby, or very low quality trees suppressing adjacent trees of better quality *NOTE Category U trees can have existing or potential conservation value which it might be desirable to preserve; see 4.5.7.*			See Table 2
	1 Mainly arboricultural qualities	**2 Mainly landscape qualities**	**3 Mainly cultural values, including conservation**	
Trees to be considered for retention				
Category A **Trees of high quality** with an estimated remaining life expectancy of at least 40 years	Trees that are particularly good examples of their species, especially if rare or unusual; or those that are essential components of groups or formal or semi-formal arboricultural features (e.g. the dominant and/or principal trees within an avenue)	Trees, groups or woodlands of particular visual importance as arboricultural and/or landscape features	Trees, groups or woodlands of significant conservation, historical, commemorative or other value (e.g. veteran trees or wood-pasture)	See Table 2
Category B **Trees of moderate quality** with an estimated remaining life expectancy of at least 20 years	Trees that might be included in category A, but are downgraded because of impaired condition (e.g. presence of significant though remediable defects, including unsympathetic past management and storm damage), such that they are unlikely to be suitable for retention for beyond 40 years; or trees lacking the special quality necessary to merit the category A designation	Trees present in numbers, usually growing as groups or woodlands, such that they attract a higher collective rating than they might as individuals; or trees occurring as collectives but situated so as to make little visual contribution to the wider locality	Trees with material conservation or other cultural value	See Table 2
Category C **Trees of low quality** with an estimated remaining life expectancy of at least 10 years, or young trees with a stem diameter below 150 mm	Unremarkable trees of very limited merit or such impaired condition that they do not qualify in higher categories	Trees present in groups or woodlands, but without this conferring on them significantly greater collective landscape value; and/or trees offering low or only temporary/transient landscape benefits	Trees with no material conservation or other cultural value	See Table 2

Appendix 3

Tree/Tree group number	No. of trees	Species	Height (m)	Stem count	Stem diameter (mm)	Crown spread (m)								Crown clearance Ht (m)	Life stage: Y-SM-EM-M-LM	Physiological Condition: G-F-P-D	Structural Condition G-F-P-D	Observations	RPR (M)	RPA(M²)	Remaining contribution in years: <10, 10-20, 20-40, 40+	Retention category	Retention Sub-category
						N	NE	E	SE	S	SW	W	NW										
T615	1	*Fagus sylvatica* Common Beech	4.5	1	120	1		1		1		1		2	Young	Poor	Poor	Large wounds on the trunk, large volume of deadwood in the crown for the life stage. The wounds are occludding, but there appears to be a bark necrosis.	1.4	7	10-20	C	2
T616	1	*Fagus sylvatica* Common Beech	4.5	1	100	1		1		1		1		1.5	Young	Good	Fair	Large wound @ base of the trunk, possibly from grass cutting operations. Wound is occluding, minor deadwood in the crown.	1.2	5	20-40	B	2
T617	1	*Fagus sylvatica* Common Beech	4	1	80	1		1		1		1		1.5	Young	Poor	Poor	Large wound @ base of the trunk, possibly from grass cutting operations. Wound is occluding, minor deadwood in the crown.	1	3	10-20	C	2
T618	1	*Fagus sylvatica* Common Beech	6	1	120	1		1		1		1		1.5	Young	Good	Good	Minor codominance in the crown, minor bark inclusion.	1.4	7	40+	A	2
T619	1	*Fagus sylvatica* Common Beech	4	1	90	1		1		1		1		1.5	Young	Good	Good	None required	1.1	4	40+	A	2
T620	1	*Fagus sylvatica* Common Beech	4.5	1	75	1		1		1		1		1.5	Young	Good	Good	Large wound @ base of the trunk, possibly from grass cutting operations. Wound is occluding, but decay is progressing into the central portion of the stem.	0.9	3	10-20	C	2
T621	1	*Fagus sylvatica* Common Beech	3	1	85	1		1		1		1		1.5	Young	Fair	Fair	Minor deadwood in the crown, leader appears to have died. The tree is established underneath an MV electricity network. Conflict is likely throughout the life cycle of the tree.	1	3	10-20	C	2
T622	1	*Fagus sylvatica* Common Beech	4.5	1	90	1		1		1		1		1.5	Young	Fair	Fair	Large wound @ base of the trunk, possibly from grass cutting operations. Wound is partially occluding, minor deadwood in the crown.	1.1	4	10-20	C	2
T623	1	*Fagus sylvatica* Common Beech	6	1	100	1.7		1		1		1.7		1.5	Young	Good	Good	None required	1.2	5	40+	A	2

Tree/Tree group number	No. of trees	Species	Height (m)	Stem count	Stem diameter (mm)	Crown spread (m) N	NE	E	SE	S	SW	W	NW	Crown clearance Ht (m)	Life stage: Y-SM-EM-M-LM	Physiological Condition: G-F-P-D	Structural Condition G-F-P-D	Observations	RPR (M)	RPA(M²)	Remaining contribution in years: <10, 10-20, 20-40, 40+	Retention category	Retention Sub-category
T624	1	*Fagus sylvatica* Common Beech	6	1	120	1.2		1		1		1.2		1.5	Young	Good	Good	None required	1.4	7	40+	A	2
T625	1	*Fagus sylvatica* Common Beech	6	1	120	2.4		2		2		2		1.5	Semi-mature	Good	Fair	Minor codominance in the crown, minor bark inclusion.	1.4	7	40+	A	2
T626	1	*Fagus sylvatica* Common Beech	4	1	150	2.4		2		2		2.4		0.5	Semi-mature	Good	Fair	Codominant stems with minor bark inclusion.	1.8	10	40+	B	2
T627	1	*Fagus sylvatica* Common Beech	6	1	120	2		2		1.5		1.5		1.5	Semi-mature	Good	Good	None required	1.4	7	40+	A	2
TG628	31	*Betula pendula* Silver Birch(x22) *Fraxinus excelsior* Ash(x9)	10	33	130									0.5	Early-mature	Good	Good	Tree group with some multi-stem trees. Some of the trees are being suppressed by their neighbours causing over extension over the pavement. Visible heaving of the pavement by the trees root systems, approx 50-60mm from surface level. 5 of the ash are established under HV electricity network.	1.6	8	40+	A	2
T629	1	*Fagus sylvatica* Common Beech	4	1	100	1		1		1		1		1.5	Young	Good	Good	Recently been topped for electricity network clearance. Downgraded because of its position under the electricity line.	1.2	5	10-20	C	2
T630	1	*Fagus sylvatica* Common Beech	4	1	60	0.5		0.5		0.5		0.5		1.5	Young	Fair	Fair	Wound @ base of the trunk, possibly from grass cutting operations. Wound is occluding.	0.7	2	20-40	B	2
T631	1	*Fagus sylvatica* Common Beech	4.5	1	110	1.7		1.5		1.5		1.5		1	Young	Good	Good	None required	1.3	5	40+	A	2
TG632	5	*Cupressocyparis leylandii* Leyland cypress	6	5	180									0	Semi-mature	Good	Good	Distinct tree group with some aesthetic value.	2.2	15	20-40	B	2
T633	1	*Trachycarpus fortunei* Chusan Palm	3.5	1	240	0.5		0.5		0.5		0.5		3	Early-mature	Good	Good	None required	2.9	26	20-40	B	2
T634	1	*Cotoneaster frigidus* Tree Cotoneaster	3	1	100	0.5		0.5		0.5		0.5		0	Semi-mature	Good	Good	None required	1.2	5	20-40	B	2
T635	1	*Cotoneaster frigidus* Tree Cotoneaster	3	5	90	0.5		0.5		0.5		0.5		0	Semi-mature	Good	Good	None required	1.1	4	20-40	B	2

Tree/Tree group number	No. of trees	Species	Height (m)	Stem count	Stem diameter (mm)	Crown spread (m)								Crown clearance Ht (m)	Life stage: Y-SM-EM-M-LM	Physiological Condition: G-F-P-D	Structural Condition G-F-P-D	Observations	RPR (M)	RPA(M²)	Remaining contribution in years: <10, 10-20, 20-40, 40+	Retention category	Retention Sub-category
						N	NE	E	SE	S	SW	W	NW										
T636	1	*Trachycarpus fortunei* Chusan Palm	3.5	1	200	0.5		0.5		0.5		0.5		3	Early-mature	Good	Good	None required	2.4	18	20-40	B	2
T637	1	*Betula pendula* Silver Birch	12	1	340	4		3		4.5		4		1.5	Mature	Good	Good	Tree has been topped in the past.	4.1	52	20-40	B	2
TG638	3	*Prunus cerasifera* Copper plum (x1), *Cedrus atlantica* Cedar (x2)	5	3	160									1.5	Early-mature	Good	Fair	Copper plum has been topped, one of the cedars is being suppressed by the plum.	1.9	12	20-40	B	2
T639	1	*Betula pendula* Silver Birch	10	1	330	3.6		3		3.6		4.5		3	Mature	Good	Fair	Tree has been heavily topped in the past, new crown has developed.	4	49	20-40	B	2
T640	1	*Fagus sylvatica* Common Beech	22	2	1000	13		9		9		12		3	Late-mature	Good	Fair	Very large tree, co-dominant approximately 1m from ground level. Trunk is partially obscured by ivy. Some over extension of the limbs to the north and east. 18-24 month inspections recommended.	12	452	40+	A	3
T641	1	*Sorbus aucuparia* Rowan	4	1	90	1.2		1.2		1.2		1.2		1.5	Young	Good	Good	None required	1.1	4	40+	A	2
T642	1	*Sorbus aucuparia* Rowan	4	1	90	1.2		1.2		1.2		1.2		1.5	Young	Good	Good	None required	1.1	4	40+	A	2
T643	1	*Sorbus aucuparia* Rowan	4	1	75	1		1		1		1		1	Young	Fair	Poor	The tree has a heavy lean to the north. Needs to be straightened and restaked.	0.9	3	10-20	C	2
T644	1	*Tilia platyphyllos* Large-leaved Lime	5	1	160	2		2		2		2.4		0	Semi-mature	Good	Good	Epicormic growth around the base of the trunk. There will be an ongoing conflict with the low voltage electricity line.	1.9	12	40+	A	2
T645	1	*Fraxinus excelsior* Ash	3.5	1	85	1		1		1		1		1	Young	Good	Fair	None required	1	3	20-40	B	2
T646	1	*Tilia platyphyllos* Large-leaved Lime	6	1	160	2.3		2.3		2.3		2.3		2	Semi-mature	Good	Good	None required	1.9	12	40+	A	2
T647	1	*Tilia platyphyllos* Large-leaved Lime	8	1	170	2.5		2.5		2.5		2.5		2	Semi-mature	Good	Good	None required	2	13	40+	A	2
T648	1	*Tilia platyphyllos* Large-leaved Lime	6	1	150	2.2		2.2		2.2		2.2		0	Semi-mature	Good	Fair	Codominant stems in the crown. Multi-stem approximately 50cm from ground level.	1.8	10	20-40	B	2

Tree/Tree group number	No. of trees	Species	Height (m)	Stem count	Stem diameter (mm)	Crown spread (m)								Crown clearance Ht (m)	Life stage: Y-SM-EM-M-LM	Physiological Condition: G-F-P-D	Structural Condition G-F-P-D	Observations	RPR (M)	RPA(M²)	Remaining contribution in years: <10, 10-20, 20-40, 40+	Retention category	Retention Sub-category
						N	NE	E	SE	S	SW	W	NW										
T649	1	*Tilia platyphyllos* Large-leaved Lime	9	1	190	3.5		3.5		3.5		3.5		2	Semi-mature	Good	Good	Remove climber	2.3	16	40+	A	2
T650	1	*Tilia platyphyllos* Large-leaved Lime	9	1	210	3		3		3		4		2	Semi-mature	Good	Good	Remove climber	2.5	20	40+	A	2
T651	1	*Tilia platyphyllos* Large-leaved Lime	9	1	200	2		3		3		3.2		2	Semi-mature	Good	Good	Remove climber	2.4	18	40+	A	2
T652	1	*Fraxinus excelsior* Ash	8	1	170	2		2		0		2		2	Semi-mature	Good	Fair	Codominant stems in the crown. Tree is suppressed by neighbouring lime.	2	13	20-40	B	2
T653	1	*Tilia platyphyllos* Large-leaved Lime	6	1	140	1		2		2		2.5		1.5	Semi-mature	Good	Fair	Minor codominance in the crown, epicormic growth at base of the trunk.	1.7	9	40+	B	2
T654	1	*Fraxinus excelsior* Ash	6	1	110	0.5		0.5		0.5		0.5		1.5	Young	Good	Fair	Codominant stems	1.3	5	20-40	B	2
T655	1	*Fraxinus excelsior* Ash	6	1	140	0.5		1.5		0.5		1.5		1.5	Young	Good	Fair	Codominant stems	1.7	9	10-20	C	2
T656	1	*Fraxinus excelsior* Ash	6	1	90	0		1		0.5		0.5		1	Young	Good	Fair	Suppressed by neighbouring tree	1.1	4	10-20	C	2
T657	1	*Tilia platyphyllos* Large-leaved Lime	6	1	170	3		3		1		3		1.5	Semi-mature	Good	Fair	Codominant stems in the crown. Tree is suppressed by neighbouring ash, consider removing the ash.	2	13	40+	B	2
T658	1	*Fraxinus excelsior* Ash	6	1	90	0.5		1.5		0.5		1.5		1.5	Young	Good	Fair	Codominant stems	1.1	4	10-20	C	2
T659	1	*Tilia platyphyllos* Large-leaved Lime	8	1	210	2.5		2.5		2.5		3		1.5	Semi-mature	Good	Good	Crown is partially suppressed by neighbouring ash	2.5	20	40+	A	2
T660	1	*Fraxinus excelsior* Ash	5	1	110	2		1.5		1		2		1.5	Young	Good	Fair	Codominant stems	1.3	5	10-20	C	2
T661	1	*Tilia platyphyllos* Large-leaved Lime	7	1	100	0.5		0.5		1		1.5		0	Young	Good	Fair	Codominant stems, epicormic @ base of the trunk. Crown is suppressed by neighbouring ash.	1.2	5	10-20	C	2
T662	1	*Fraxinus excelsior* Ash	7	1	100	0.5		1.5		1		0.5		1.5	Young	Good	Fair	Codominant stems, crown is suppressed by neighbouring trees.	1.2	5	10-20	C	2
T663	1	*Fraxinus excelsior* Ash	8	2	170	1.5		1.5		1.5		2		1.5	Semi-mature	Good	Fair	Codominant stems	2	13	10-20	C	2
T664	1	*Tilia platyphyllos* Large-leaved Lime	7	1	170	2.7		2.3		2.7		2.7		1.5	Semi-mature	Good	Good	Crown is partially suppressed by neighbouring ash	2	13	40+	A	2

Tree/Tree group number	No. of trees	Species	Height (m)	Stem count	Stem diameter (mm)	Crown spread (m) N	NE	E	SE	S	SW	W	NW	Crown clearance Ht (m)	Life stage: Y-SM-EM-M-LM	Physiological Condition: G-F-P-D	Structural Condition G-F-P-D	Observations	RPR (M)	RPA(M²)	Remaining contribution in years: <10, 10-20, 20-40, 40+	Retention category	Retention Sub-category
T665	1	*Fraxinus excelsior* Ash	7	1	120	1		1		0		1		1.5	Young	Good	Fair	Crown is partially suppressed by neighbouring lime	1.4	7	10-20	C	2
T666	1	*Fraxinus excelsior* Ash	7	1	120	0.5		1.5		0.5		1.5		1.5	Young	Good	Good	Crown is partially suppressed by neighbouring lime	1.4	7	20-40	B	2
T667	1	*Tilia platyphyllos* Large-leaved Lime	8	1	200	3		3		3		3		1.5	Semi-mature	Good	Good	Crown is partially suppressed by neighbouring ash	2.4	18	40+	A	2
T668	1	*Fraxinus excelsior* Ash	7	1	120	1		1.7		0.5		2		1.5	Young	Good	Fair	Codominant stems. Crown is partially suppressed by neighbouring lime	1.4	7	10-20	C	2
T669	1	*Tilia platyphyllos* Large-leaved Lime	9	1	190	3		3		2.5		3		1.5	Semi-mature	Good	Good	None required	2.3	16	40+	A	2
T670	1	*Tilia platyphyllos* Large-leaved Lime	9	1	180	3		3		3		3		1.5	Semi-mature	Good	Good	Crown is partially suppressed by neighbouring ash	2.2	15	40+	A	2
T671	1	*Fraxinus excelsior* Ash	6	1	100	1		1		0.5		1		1.5	Young	Good	Fair	Codominant stems	1.2	5	10-20	C	2
T672	1	*Fraxinus excelsior* Ash	6	1	90	1		1		1		1		1.5	Young	Good	Fair	None required	1.1	4	20-40	B	2
T673	1	*Fraxinus excelsior* Ash	6	1	100	1		1		1		1		1.5	Young	Good	Fair	Codominant stems	1.2	5	10-20	C	2
T674	1	*Fraxinus excelsior* Ash	5	1	100	1.5		1.5		1		2		1.5	Young	Good	Fair	Codominant stems	1.2	5	10-20	C	2
T675	1	*Fraxinus excelsior* Ash	6	1	100	1		1		1		1		1.5	Young	Good	Good	None required	1.2	5	20-40	B	2
T676	1	*Fraxinus excelsior* Ash	6	1	100	1		1.5		1		1.5		1.5	Young	Good	Good	None required	1.2	5	20-40	B	2
T677	1	*Fraxinus excelsior* Ash	7	1	100	0.5		1		0.5		1		1.5	Young	Good	Good	Crown is partially suppressed by neighbouring ash	1.2	5	20-40	B	2
T678	1	*Fraxinus excelsior* Ash	7	1	150	2.5		1.5		2		2.5		1.5	Semi-mature	Good	Fair	Codominant stems	1.8	10	20-40	B	2
T679	1	*Fraxinus excelsior* Ash	7	1	110	2		1		1.5		1		1.5	Semi-mature	Good	Good	None required	1.3	5	20-40	B	2
T680	1	*Fraxinus excelsior* Ash	5	1	90	1.5		0.5		1		0.5		1.5	Young	Good	Fair	Codominant stems	1.1	4	10-20	C	2
T681	1	*Fraxinus excelsior* Ash	6	1	140	1.5		1.5		1.5		1.5		1.5	Young	Good	Fair	Codominant stems	1.7	9	10-20	C	2

Tree/Tree group number	No. of trees	Species	Height (m)	Stem count	Stem diameter (mm)	Crown spread (m)								Crown clearance Ht (m)	Life stage: Y-SM-EM-M-LM	Physiological Condition: G-F-P-D	Structural Condition G-F-P-D	Observations	RPR (M)	RPA(M²)	Remaining contribution in years: <10, 10-20, 20-40, 40+	Retention category	Retention Sub-category
						N	NE	E	SE	S	SW	W	NW										
TG682	6	*Betula pendula* Silver Birch (x2) *Chamaecyparis lawsoniana* Lawson cypress (x4)	13	6	233									2	Mature	Good	Good	Trunks obscured by ivy.	2.8	25	20-40	B	2
TG683	5	*Fraxinus excelsior* Ash (x4) *Acer pseudoplatanus* Sycamore (x1)	6	6	200									1	Semi-mature	Good	Fair	Codominant stems	2.4	18	20-40	B	2
T684	1	*Crataegus monogyna* Hawthorn	10	3	291	2.3		0		2.5		2.5		1	Mature	Fair	Fair	Trunks obscured by ivy. Crown is suppressed by neighbouring tree.	3.5	38	10-20	C	2
T685	1	*Fraxinus excelsior* Ash	13	3	381	4.1		2		4		3		5	Mature	Fair	Fair	Trunks obscured by ivy. Crown is suppressed by neighbouring tree.	4.6	66	10-20	C	2
T686	1	*Fraxinus excelsior* Ash	13	5	385	3		3		4		2		5	Mature	Fair	Fair	Trunks obscured by ivy. Crown is suppressed by neighbouring tree.	4.6	67	10-20	C	2
T687	1	*Fraxinus excelsior* Ash	14	3	354	2.5		2		5		2		5	Mature	Fair	Fair	Irregular shaped trunk, obscured by ivy.	4.2	57	10-20	C	2
T688	1	*Fagus sylvatica* Common Beech	22	1	700	6.3		4.4		5		5.6		3	Late-mature	Good	Good	Trunk is partially obscured by ivy. Very large crown size.	8.4	222	40+	A	3
T689	1	*Fraxinus excelsior* Ash	21	2	484	4.5		2		4.5		0.5		8	Mature	Poor	Poor	The eastern stem is hollow, fungal fruit body @ the base of the trunk. The stem has a strong lean towards the carpark spaces (remove eastern stem). Western stem is Ok (stem with the tag).	5.8	106	10-20	C	2
T690	1	*Fraxinus excelsior* Ash	21	2	446	3.3		3		4		0.5		4	Mature	Poor	Fair	Eastern stem has been topped. Deadwood accumulating in the crown of the western stem. Crown will need to be cleaned of deadwood.	5.4	90	10-20	C	2
T691	1	*Fraxinus excelsior* Ash	21	1	440	4		3		6		2		4	Mature	Fair	Fair	Limbs are beginning to overextend over carpark. Deadwood in the crown, fungal bracket on the trunk approximately 5m from ground level.	5.3	88	20-40	B	2

Tree/Tree group number	No. of trees	Species	Height (m)	Stem count	Stem diameter (mm)	Crown spread (m) N	NE	E	SE	S	SW	W	NW	Crown clearance Ht (m)	Life stage: Y-SM-EM-M-LM	Physiological Condition: G-F-P-D	Structural Condition G-F-P-D	Observations	RPR (M)	RPA(M²)	Remaining contribution in years: <10, 10-20, 20-40, 40+	Retention category	Retention Sub-category
T692	1	*Fraxinus excelsior* Ash	23	1	510	6.5		4.2		4.5		3.8		6	Mature	Fair	Fair	Limbs are beginning to overextend over road & carpark. Trunk is partially obscured by ivy. Light deadwood accumulating in the crown.	6.1	118	20-40	B	2
T693	1	*Fraxinus excelsior* Ash	20	2	400	4		2		4		1		4	Mature	Fair	Fair	Limbs are beginning to overextend over carpark. Light deadwood in the crown.	4.8	72	20-40	B	2
T694	1	*Fraxinus excelsior* Ash	20	1	380	3		2		3		1		6	Mature	Fair	Fair	Trunk is obscured by ivy. Crown is suppressed by neighbouring tree. Light deadwood accumulating in the crown.	4.6	65	20-40	B	2
T695	1	*Fraxinus excelsior* Ash	20	1	520	3		3		6		2		3	Mature	Fair	Fair	Trunk is partially obscured by ivy. Light deadwood accumulating in the crown.	6.2	122	20-40	B	2
T696	1	*Sorbus aria* Whitebeam	6	1	150	2		2		2		2		1.5	Semi-mature	Good	Good	None required	1.8	10	40+	A	2
T697	1	*Sorbus aria* Whitebeam	6	1	170	2		2		2		2		1.5	Semi-mature	Good	Good	None required	2	13	40+	A	2
T698	1	*Sorbus aria* Whitebeam	6	1	180	2		2		2		2		1.5	Semi-mature	Good	Good	None required	2.2	15	40+	A	2
T699	1	*Tilia platyphyllos* Large-leaved Lime	4	1	160	2		2		2		2		0	Semi-mature	Good	Fair	Codominant stems	1.9	12	40+	B	2
T700	1	*Tilia platyphyllos* Large-leaved Lime	7	1	180	1.5		2.3		2.3		2.2		2	Semi-mature	Good	Fair	Codominant stems with bark inclusion.	2.2	15	40+	B	2
T701	1	*Prunus cerasifera* Copper plum	7	1	240	2.3		2.3		2.5		2.5		1.2	Early-mature	Fair	Poor	Historic topping for electricity line clearance. Codominant stems with partial bark inclusion. Minor deadwood in the crown, fungal brackets on one stem.	2.9	26	10-20	C	2
T702	1	*Sorbus aucuparia* Rowan	8	1	230	2.1		1.5		1.5		1		1.5	Mature	Fair	Poor	Historic topping for electricity line clearance. Codominant stems with poor crown form.	2.8	24	10-20	C	2

Tree/Tree group number	No. of trees	Species	Height (m)	Stem count	Stem diameter (mm)	Crown spread (m)								Crown clearance Ht (m)	Life stage: Y-SM-EM-M-LM	Physiological Condition: G-F-P-D	Structural Condition G-F-P-D	Observations	RPR (M)	RPA(M²)	Remaining contribution in years: <10, 10-20, 20-40, 40+	Retention category	Retention Sub-category
						N	NE	E	SE	S	SW	W	NW										
T703	1	*Tilia platyphyllos* Large-leaved Lime	12	1	490	3.7		4		3		3		3	Early-mature	Good	Poor	Codominant stems with partial bark inclusion. Historic topping for electricity line clearance. Good regrowth since last cutting cycle.	5.9	109	20-40	B	2
T704	1	*Prunus* Cherry	6	1	320	2.5		2.1		2.1		2.3		2	Mature	Good	Fair	Codominant stems with minor bark inclusion. Historic topping for the electricity network.	3.8	46	10-20	C	2
T705	1	*Prunus* Cherry	7	1	260	2.5		2		2		2		2	Mature	Good	Fair	Crown suppressed by neighbouring trees. Historic topping for the electricity network.	3.1	31	10-20	C	2
T706	1	*Sorbus aria* Whitebeam	8	1	360	2.5		2.8		2		2		2	Mature	Good	Fair	Crown suppressed by neighbouring trees. Historic topping for the electricity network.	4.3	59	10-20	C	2
T707	1	*Carpinus betulus* Hornbeam	10	1	270	2		2		2		2		2	Semi-mature	Good	Good	None required	3.2	33	40+	A	2
T708	1	*Carpinus betulus* Hornbeam	10	1	220	2		2		2		2		2	Semi-mature	Good	Good	None required	2.6	22	40+	A	2
T709	1	*Carpinus betulus* Hornbeam	10	1	240	2		2		2		2		2	Semi-mature	Good	Good	None required	2.9	26	40+	A	2
T710	1	*Carpinus betulus* Hornbeam	10	1	290	2		2		2		2		2	Semi-mature	Good	Fair	Codominant stems with partial bark inclusion.	3.5	38	40+	B	2
T711	1	*Carpinus betulus* Hornbeam	10	1	250	2		2		2		2		2	Semi-mature	Good	Good	None required	3	28	40+	A	2
T712	1	*Carpinus betulus* Hornbeam	10	1	290	2		2		2		2		2	Semi-mature	Good	Good	None required	3.5	38	40+	A	2
T713	1	*Carpinus betulus* Hornbeam	10	1	280	2		2		2		2		2	Semi-mature	Good	Good	None required	3.4	35	40+	A	2
T714	1	*Carpinus betulus* Hornbeam	10	1	330	2		2		2		2		2	Early-mature	Good	Good	None required	4	49	40+	A	2
T715	1	*Platanus x hispanica* London Plane	18	1	500	3.6		3.2		2		3		5	Mature	Good	Fair	Codominant stems. Historic pollarding.	6	113	40+	B	2
T716	1	*Platanus x hispanica* London Plane	18	1	470	3.2		3.7		2		3		5	Mature	Good	Good	None required	5.6	100	40+	A	2
T717	1	*Tilia platyphyllos* Large-leaved Lime	15	1	410	3.5		4		3		2.2		4	Mature	Good	Fair	Codominant stems with partial bark inclusion.	4.9	76	40+	A	2

Tree/Tree group number	No. of trees	Species	Height (m)	Stem count	Stem diameter (mm)	Crown spread (m)								Crown clearance Ht (m)	Life stage: Y-SM-EM-M-LM	Physiological Condition: G-F-P-D	Structural Condition G-F-P-D	Observations	RPR (M)	RPA(M²)	Remaining contribution in years: <10, 10-20, 20-40, 40+	Retention category	Retention Sub-category
						N	NE	E	SE	S	SW	W	NW										
T718	1	*Acer platanoides* Norway maple	11	1	340	3.2		2.8		1.5		2.7		3	Early-mature	Good	Fair	Codominant stems	4.1	52	40+	A	2
T719	1	*Carpinus betulus* Hornbeam	9	1	190	2		4		2		2		1	Semi-mature	Good	Good	Crown is partially suppressed by neighbouring trees	2.3	16	40+	A	2
T720	1	*Carpinus betulus* Hornbeam	9	1	200	2.3		2.1		1.5		2.2		1.5	Semi-mature	Good	Good	None required	2.4	18	40+	A	2
T721	1	*Acer platanoides* Norway maple	11	1	290	2.6		2.6		2.6		2.6		2	Early-mature	Good	Fair	Codominant stems	3.5	38	40+	A	2
T722	1	*Carpinus betulus* Hornbeam	8.5	1	210	2		2		2		2		1.5	Semi-mature	Good	Good	None required	2.5	20	40+	A	2
T723	1	*Carpinus betulus* Hornbeam	8.5	1	180	2		2		2		2		1	Semi-mature	Good	Good	None required	2.2	15	40+	A	2
T724	1	*Sorbus aucuparia* Rowan	6.5	8	190	2.4		2.4		2.4		2.4		1	Semi-mature	Good	Fair	Multi-stem at the base of the trunk. Historic coppice regrowth.	2.3	16	20-40	B	2
T725	1	*Carpinus betulus* Hornbeam	8.5	1	200	2		2		2		2		1	Semi-mature	Good	Good	None required	2.4	18	40+	A	2
T726	1	*Carpinus betulus* Hornbeam	8.5	1	230	2		2		2		2		1.5	Semi-mature	Good	Good	None required	2.8	24	40+	A	2
T727	1	*Acer platanoides* Norway maple	11	1	380	3.3		3.2		2.7		2.8		2	Early-mature	Good	Fair	Codominant stems	4.6	65	40+	B	2
T728	1	*Malus* Apple	5	1	200	2.7		2.7		2.2		2.7		1.5	Mature	Good	Good	None required	2.4	18	20-40	B	2
T729	1	*Carpinus betulus* Hornbeam	8.5	1	180	2		2		2		2		1.5	Semi-mature	Good	Good	None required	2.2	15	40+	A	2
T730	1	*Acer platanoides* Norway maple	11	1	410	3.7		3.6		3.5		3.7		2	Early-mature	Good	Fair	Codominant stems	4.9	76	40+	A	2
T731	1	*Carpinus betulus* Hornbeam	8.5	1	220	2		2		2		2		1.5	Semi-mature	Good	Good	None required	2.6	22	40+	A	2
T732	1	*Carpinus betulus* Hornbeam	7.5	1	220	2		2		2		2		1.5	Semi-mature	Good	Good	None required	2.6	22	40+	A	2
T733	1	*Carpinus betulus* Hornbeam	8	1	240	2		2		2		2		1	Semi-mature	Good	Good	None required	2.9	26	40+	A	2
T734	1	*Betula pendula* Silver Birch	6	1	350	3.1		3.6		2.3		2.3		1.5	Mature	Fair	Poor	Historic topping	4.2	55	10-20	C	2
T735	1	*Carpinus betulus* Hornbeam	8	1	190	2		2		2		2		1.5	Semi-mature	Good	Good	None required	2.3	16	40+	A	2

Tree/Tree group number	No. of trees	Species	Height (m)	Stem count	Stem diameter (mm)	Crown spread (m)								Crown clearance Ht (m)	Life stage: Y-SM-EM-M-LM	Physiological Condition: G-F-P-D	Structural Condition G-F-P-D	Observations	RPR (M)	RPA(M²)	Remaining contribution in years: <10, 10-20, 20-40, 40+	Retention category	Retention Sub-category
						N	NE	E	SE	S	SW	W	NW										
T736	1	*Carpinus betulus* Hornbeam	8	1	230	2.2		2.2		2.2		2.2		1	Semi-mature	Good	Good	None required	2.8	24	40+	A	2
T737	1	*Betula pendula* Silver Birch	11	1	210	2.5		2.5		2.5		2.5		2	Early-mature	Good	Good	Minor conflict with electricity network.	2.5	20	20-40	B	2
T738	1	*Carpinus betulus* Hornbeam	8	1	170	2		2		2		2		1.5	Semi-mature	Good	Good	None required	2	13	40+	A	2
T739	1	*Carpinus betulus* Hornbeam	8	1	200	2		2		2		2		1.5	Semi-mature	Good	Good	Minor conflict with electricity network.	2.4	18	40+	A	2
T740	1	*Carpinus betulus* Hornbeam	8	1	190	2		2		2		2		1.5	Semi-mature	Good	Good	None required	2.3	16	40+	A	2
T741	1	*Carpinus betulus* Hornbeam	8	1	240	2		2		2		2		1.5	Semi-mature	Good	Good	None required	2.9	26	40+	A	2
T742	1	*Carpinus betulus* Hornbeam	8	1	240	2		2		2		2		1.5	Semi-mature	Good	Good	Direct conflict with the electricity network.	2.9	26	40+	A	2
T743	1	*Carpinus betulus* Hornbeam	8	1	230	2		2		2		2		1.5	Semi-mature	Good	Good	None required	2.8	24	40+	A	2
T744	1	*Carpinus betulus* Hornbeam	8	1	190	2		2		2		2		1.5	Semi-mature	Good	Good	None required	2.3	16	40+	A	2
T745	1	*Carpinus betulus* Hornbeam	6	1	140	0.5		0.5		0.5		0.5		1.5	Semi-mature	Good	Good	None required	1.7	9	40+	A	2
T746	1	*Carpinus betulus* Hornbeam	6	1	130	1		1		1		1		1	Semi-mature	Good	Good	None required	1.6	8	40+	A	2
T747	1	*Sorbus aucuparia* Rowan	7	1	150	2.3		0.5		2.3		2		2	Early-mature	Fair	Fair	Codominant stems, stub cuts, minor deadwood in the crown.	1.8	10	20-40	B	2
T748	1	*Sorbus aucuparia* Rowan	7	1	190	2.6		2.6		2.8		0.5		2	Early-mature	Fair	Fair	Codominant stems, stub cuts, minor deadwood in the crown. Crown is partially suppressed by neighbouring tree.	2.3	16	20-40	B	2
T749	1	*Prunus* Cherry	8	1	340	3.6		3		3.9		3.6		1.5	Mature	Good	Fair	Codominant stems, stub cuts, minor deadwood in the crown.	4.1	52	20-40	B	2
T750	1	*Betula pendula* Silver Birch	12	1	330	1.4		3		2.5		3		2	Mature	Good	Good	High amenity value	4	49	40+	A	2
T751	1	*Betula pendula* Silver Birch	12	1	280	3.5		1.9		0.5		2.2		2	Mature	Good	Good	Natural lean towards road. High amenity value.	3.4	35	40+	A	2
T752	1	*Betula pendula* Silver Birch	12	1	180	0.5		3.2		0.5		0.5		3	Mature	Good	Good	Natural lean towards road. High amenity value.	2.2	15	40+	A	2

Tree/Tree group number	No. of trees	Species	Height (m)	Stem count	Stem diameter (mm)	Crown spread (m)								Crown clearance Ht (m)	Life stage: Y-SM-EM-M-LM	Physiological Condition: G-F-P-D	Structural Condition G-F-P-D	Observations	RPR (M)	RPA(M²)	Remaining contribution in years: <10, 10-20, 20-40, 40+	Retention category	Retention Sub-category
						N	NE	E	SE	S	SW	W	NW										
T753	1	*Carpinus betulus* Hornbeam	6	2	125	0.5		0.5		0.5		0.5		1.5	Semi-mature	Good	Good	Raised planter around the base of the trunk.	1.5	7	40+	A	2
T754	1	*Carpinus betulus* Hornbeam	7	1	150	1.5		1.5		1.5		1.5		1.5	Semi-mature	Good	Good	Raised planter around the base of the trunk.	1.8	10	40+	A	2
T755	1	*Carpinus betulus* Hornbeam	6	1	160	1.5		1.5		1.5		1.5		2	Semi-mature	Good	Good	Raised planter around the base of the trunk.	1.9	12	40+	A	2
T756	1	*Carpinus betulus* Hornbeam	6	1	100	0.7		0.7		0.7		0.7		1.5	Semi-mature	Good	Good	Raised planter around the base of the trunk.	1.2	5	40+	A	2
T757	1	*Carpinus betulus* Hornbeam	6	1	110	0.7		0.7		0.7		0.7		1.5	Semi-mature	Good	Good	Raised planter around the base of the trunk.	1.3	5	40+	A	2
T758	1	*Carpinus betulus* Hornbeam	7	1	140	0.9		0.9		0.9		0.9		1	Semi-mature	Good	Good	Raised planter around the base of the trunk.	1.7	9	40+	A	2
T759	1	*Aesculus hippocastanum* Horse chestnut	14	1	800	9		9		7		9		2	Mature	Good	Good	Trunk is partially obscured by ivy. Large crown size, three by leaders	9.6	289	40+	A	3
T760	1	*Fagus sylvatica* Common Beech	12	1	330	4		4		4		4		2	Early-mature	Good	Fair	Codominant stems with partial bark inclusion.	4	49	40+	B	2
T761	1	*Fagus sylvatica* Common Beech	22	1	1400	7.6		6.5		7.9		8.9		3	Late-mature	Good	Good	Trunk is partially obscured by ivy. Very large crown size. Historic and amenity value.	17	887	40+	A	2
T762	1	*Betula pendula* Silver Birch	15	1	500	5		4		4.5		4		3	Mature	Good	Good	Established in a raised planter. Good amenity value.	6	113	40+	A	2
T763	1	*Betula pendula* Silver Birch	11	1	350	4		4		4		3.5		3	Mature	Good	Fair	Established in a raised planter. Codominant stems	4.2	55	40+	A	2
T764	1	*Betula pendula* Silver Birch	10	1	220	1		2.2		2.2		2.5		4	Early-mature	Good	Fair	Established in a raised planter. Wounds on the trunk.	2.6	22	20-40	B	2
T765	1	*Betula pendula* Silver Birch	10	1	350	2.8		4		2.3		4		4	Mature	Good	Good	Established in a raised planter. Good amenity value.	4.2	55	40+	A	2
T766	1	*Ulmus glabra* Wych Elm	3	1	220	1.5		1.5		1.5		1.5		0.5	Semi-mature	Good	Poor	Severly topped in the past. New crown is sprouting.	2.6	22	20-40	B	2
T767	1	*Carpinus betulus* Hornbeam	7	1	170	1		1		1		1		1.5	Semi-mature	Good	Good	Raised planter around the base of the trunk.	2	13	40+	A	2
T768	1	*Carpinus betulus* Hornbeam	6	1	90	0.5		0.5		0.5		0.5		1.5	Semi-mature	Good	Good	Raised planter around the base of the trunk.	1.1	4	40+	A	2
T769	1	*Carpinus betulus* Hornbeam	6	1	90	0.5		0.5		0.5		0.5		1.5	Semi-mature	Good	Good	Raised planter around the base of the trunk.	1.1	4	40+	A	2

Tree/Tree group number	No. of trees	Species	Height (m)	Stem count	Stem diameter (mm)	Crown spread (m)								Crown clearance Ht (m)	Life stage: Y-SM-EM-M-LM	Physiological Condition: G-F-P-D	Structural Condition G-F-P-D	Observations	RPR (M)	RPA(M²)	Remaining contribution in years: <10, 10-20, 20-40, 40+	Retention category	Retention Sub-category
						N	NE	E	SE	S	SW	W	NW										
T770	1	*Carpinus betulus* Hornbeam	6	1	100	0.7		0.7		0.7		0.7		1.5	Semi-mature	Good	Good	Raised planter around the base of the trunk.	1.2	5	40+	A	2
T771	1	*Carpinus betulus* Hornbeam	6	1	110	0.7		0.7		0.7		0.7		1.5	Semi-mature	Good	Good	Raised planter around the base of the trunk.	1.3	5	40+	A	2
T772	1	*Carpinus betulus* Hornbeam	6	1	80	0.5		0.5		0.5		0.5		1.5	Semi-mature	Good	Good	Raised planter around the base of the trunk.	1	3	40+	A	2
T773	1	*Acer platanoides* Norway maple	12	1	340	2.8		2		2.8		2.8		3	Early-mature	Good	Fair	Codominant stems. Crown is suppressed by neighbouring trees. Conflict with the electricity network.	4.1	52	20-40	B	2
T774	1	*Prunus domestica* Plum	6	2	374	4.3		3		3.5		2.5		2	Late-mature	Good	Good	Crown is being suppressed by neighbour.	4.5	63	20-40	B	2
T775	1	*Cupressocyparis leylandii* Leyland cypress	14	1	510	3.5		5.8		3.5		3.5		3	Mature	Good	Good	Conflict with the electricity network.	6.1	118	20-40	B	2
T776	1	*Cupressocyparis leylandii* Leyland cypress	14	5	735	5		5.8		5		5		3	Mature	Good	Fair	Codominant stems. Conflict with the electricity network.	8.8	244	20-40	B	2
T777	1	*Cupressocyparis leylandii* Leyland cypress	14	2	630	5		5.8		4		4		3	Mature	Good	Fair	Codominant stems. Conflict with the electricity network.	7.6	180	20-40	B	2
T778	1	*Cupressocyparis leylandii* Leyland cypress	14	5	684	3.7		5.8		4		3.5		3	Mature	Good	Fair	Codominant stems. Conflict with the electricity network.	8.2	212	20-40	B	2
T779	1	*Cupressocyparis leylandii* Leyland cypress	14	2	615	4.5		5.8		3.2		4		3	Mature	Good	Fair	Codominant stems. Conflict with the electricity network.	7.4	171	20-40	B	2
T780	1	*Acer platanoides* Norway maple	8	1	340	3		3		3		3		3	Early-mature	Good	Fair	Codominant stems. Historic topping for the electricity network.	4.1	52	10-20	C	2
T781	1	*Acer platanoides* Norway maple	8	1	460	3.5		3.5		3.5		3.5		3	Early-mature	Good	Fair	Historic topping for the electricity network.	5.5	96	10-20	C	2
T782	1	*Betula utilis* Himalayan Birch	11	1	190	2.1		2.5		2.5		3		2	Early-mature	Good	Fair	Codominant stems. Conflict with the electricity network.	2.3	16	20-40	B	2
T783	1	*Betula utilis* Himalayan Birch	11	1	160	1.5		1.5		1.5		1.5		3	Early-mature	Good	Good	Conflict with the electricity network.	1.9	12	20-40	B	2
T784	1	*Betula utilis* Himalayan Birch	11	1	150	3		1.5		0.5		3		3	Early-mature	Good	Good	Conflict with the electricity network.	1.8	10	20-40	B	2

Tree/Tree group number	No. of trees	Species	Height (m)	Stem count	Stem diameter (mm)	Crown spread (m) N	NE	E	SE	S	SW	W	NW	Crown clearance Ht (m)	Life stage: Y-SM-EM-M-LM	Physiological Condition: G-F-P-D	Structural Condition G-F-P-D	Observations	RPR (M)	RPA(M²)	Remaining contribution in years: <10, 10-20, 20-40, 40+	Retention category	Retention Sub-category
T785	1	*Acer pseudoplatanus* Sycamore	8	1	220	2		2		2		3		3	Early-mature	Good	Fair	Historic topping for the electricity network.	2.6	22	20-40	B	2
T786	1	*Tilia platyphyllos* Large-leaved Lime	8	1	220	3.3		3.1		1.5		2		3	Semi-mature	Good	Good	None required	2.6	22	40+	A	2
T787	1	*Tilia platyphyllos* Large-leaved Lime	8	1	230	3.2		3		3.2		3.2		3	Semi-mature	Good	Fair	Codominant stems	2.8	24	40+	A	2
T788	1	*Carpinus betulus* Hornbeam	8	1	230	2.5		2.5		2.5		2.5		2	Semi-mature	Good	Good	Historic topping for the electricity network.	2.8	24	20-40	B	2
T789	1	*Carpinus betulus* Hornbeam	7	1	180	2		2		2		2		1.5	Semi-mature	Good	Good	Historic topping for the electricity network.	2.2	15	20-40	B	2
T790	1	*Acer pseudoplatanus* Sycamore	8	1	190	2.4		2.4		2		2		3	Semi-mature	Good	Fair	Historic topping for the electricity network.	2.3	16	20-40	B	2
T791	1	*Carpinus betulus* Hornbeam	7	1	150	2		1.5		2		2.5		1.5	Semi-mature	Good	Fair	Historic topping for the electricity network.	1.8	10	20-40	B	2
T792	1	*Acer platanoides* Norway maple	11	1	380	3.4		1.5		3		3.4		4	Early-mature	Good	Fair	Conflict with the electricity network.	4.6	65	20-40	B	2
T793	1	*Carpinus betulus* Hornbeam	7	1	120	2		0.5		2		2		1.5	Semi-mature	Good	Fair	Historic topping for the electricity network.	1.4	7	20-40	B	2
T794	1	*Cupressus macrocarpa* Monterey Cypress	22	1	1100	6.8		6.8		6.8		6.8		10	Mature	Good	Good	Very large crown size. Good amenity value.	13	547	40+	A	2
T795	1	*Acer pseudoplatanus* Sycamore	6	1	120	3		3		2		3		2	Semi-mature	Good	Fair	None required	1.4	7	20-40	B	2
T796	1	*Salix cinerea* Grey willow	8	1	260	3.4		3.4		2.7		3.4		2	Semi-mature	Good	Fair	None required	3.1	31	20-40	B	2
T797	1	*Betula utilis* Himalayan Birch	8	1	140	2.6		2.6		2.6		2.6		2	Semi-mature	Good	Good	None required	1.7	9	40+	A	2
T798	1	*Tilia platyphyllos* Large-leaved Lime	8	1	220	2.7		2.7		2.7		2.7		3	Semi-mature	Good	Good	None required	2.6	22	40+	A	2
T799	1	*Tilia platyphyllos* Large-leaved Lime	9	1	210	2.5		2.5		2.5		2.5		3	Semi-mature	Good	Good	None required	2.5	20	40+	A	2
T800	1	*Betula utilis* Himalayan Birch	9	1	140	2		2		2		2		2	Semi-mature	Good	Good	None required	1.7	9	40+	A	2
T801	1	*Acer pseudoplatanus* Sycamore	6	1	160	3		3		3		3		2	Semi-mature	Good	Fair	None required	1.9	12	20-40	B	2
T802	1	*Acer pseudoplatanus* Sycamore	6	1	240	3.5		3.5		3.5		3.5		2	Semi-mature	Good	Fair	Historic topping for the HV electricity network.	2.9	26	20-40	B	2

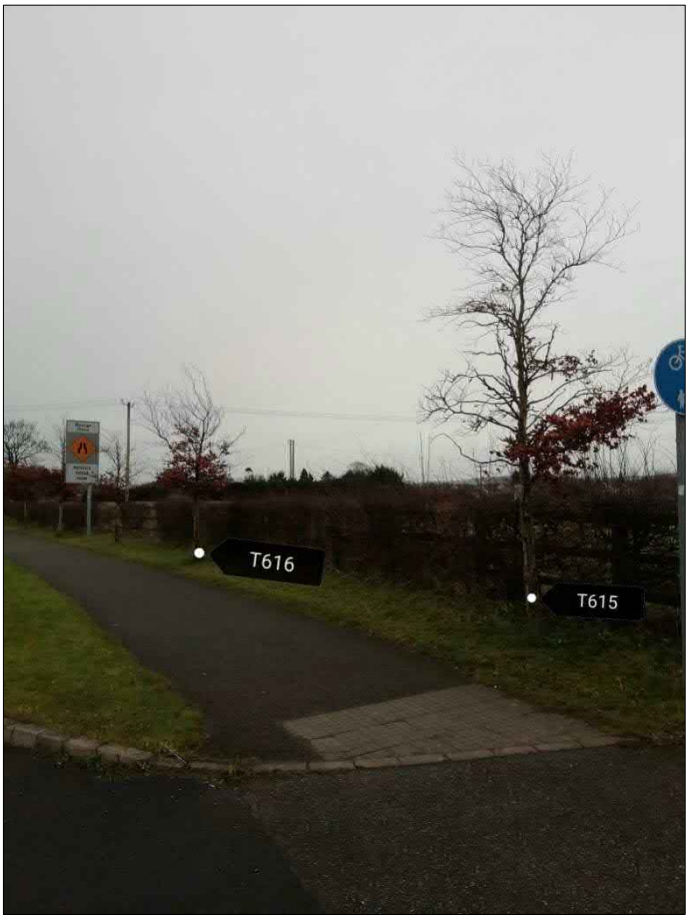
Tree/Tree group number	No. of trees	Species	Height (m)	Stem count	Stem diameter (mm)	Crown spread (m)								Crown clearance Ht (m)	Life stage: Y-SM-EM-M-LM	Physiological Condition: G-F-P-D	Structural Condition G-F-P-D	Observations	RPR (M)	RPA(M^2)	Remaining contribution in years: <10, 10-20, 20-40, 40+	Retention category	Retention Sub-category
						N	NE	E	SE	S	SW	W	NW										
T803	1	*Acer pseudoplatanus* Sycamore	14	5	818	8		8		5.4		7		5	Mature	Good	Fair	Historic topping for the HV electricity network. Trunk is partially obscured by ivy. The tree has an interesting multi-stem form.	9.8	303	20-40	B	3
T804	1	*Acer platanoides* Norway maple	7	1	190	2		2.8		2.8		2.8		2.5	Semi-mature	Good	Fair	Codominant stems	2.3	16	40+	A	2
T805	1	*Acer platanoides* Norway maple	7	1	210	2		2.8		2.8		2.8		2.5	Semi-mature	Good	Fair	Codominant stems	2.5	20	40+	A	2

Appendix 4

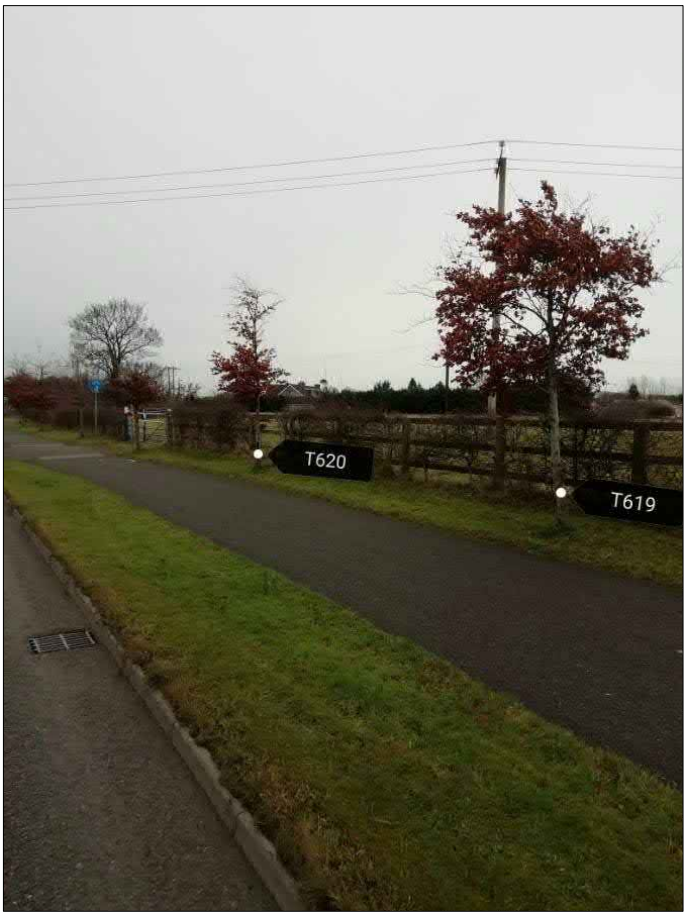
Naas to Kill Cycle Scheme Tree Works Schedule			
Tree No	**Tree Species**	**CAT** *BS5837*	**Description of Tree Works**
Johnstown Section preconstruction tree removals			
T629	*Fagus sylvatica* Common Beech	C2	Fell at ground level.
T630	*Fagus sylvatica* Common Beech	B2	Fell at ground level.
T631	*Fagus sylvatica* Common Beech	A2	Fell at ground level.
T641	*Sorbus aucuparia* Rowan	A2	Fell at ground level.
T642	*Sorbus aucuparia* Rowan	A2	Fell at ground level.
T643	*Sorbus aucuparia* Rowan	C2	Fell at ground level.
Kill Section preconstruction tree removals			
T753	*Carpinus betulus* Hornbeam	A2	Fell at ground level
T755 – T757	*Carpinus betulus* Hornbeam (x 3)	A2	Fell 3 x trees at ground level
T767 – T769	*Carpinus betulus* Hornbeam (x 3)	A2	Fell 3 x trees at ground level
T770	*Carpinus betulus* Hornbeam	A2	Fell at ground level.
T771	*Carpinus betulus* Hornbeam	A2	Fell at ground level.
T772	*Carpinus betulus* Hornbeam	A2	Fell at ground level.
T785	*Acer pseudoplatanus* Sycamore	B2	Fell at ground level.
Ash removals in Johnstown to release the retained limes from canopy competition			
T652	*Fraxinus excelsior* Ash	B2	Fell at ground level and grind stump.
T654	*Fraxinus excelsior* Ash	B2	Fell at ground level and grind stump.
T655	*Fraxinus excelsior* Ash	C2	Fell at ground level and grind stump.
T656	*Fraxinus excelsior* Ash	C2	Fell at ground level and grind stump.
T658	*Fraxinus excelsior* Ash	C2	Fell at ground level and grind stump.

Naas to Kill Cycle Scheme Tree Works Schedule			
Tree No	**Tree Species**	**CAT** *BS5837*	**Description of Tree Works**
T660	*Fraxinus excelsior* Ash	C2	Fell at ground level and grind stump.
T662	*Fraxinus excelsior* Ash	C2	Fell at ground level and grind stump.
T665	*Fraxinus excelsior* Ash	C2	Fell at ground level and grind stump.
T668	*Fraxinus excelsior* Ash	C2	Fell at ground level and grind stump.
T671	*Fraxinus excelsior* Ash	C2	Fell at ground level and grind stump.
Further recommended tree works to be carried out prior to public usage of the cycle path.			
T689	*Fraxinus excelsior* Ash	C2	Remove the eastern stem leaning towards the car park. The western stem with the tree tag is OK.
T690	*Fraxinus excelsior* Ash	C2	Clean crown of deadwood and any defective branches.
T691	*Fraxinus excelsior* Ash	B2	Reduce end weight on over extended limbs over the carpark by 10-15%. Clean crown of deadwood and any defective branches.
T692	*Fraxinus excelsior* Ash	B2	Reduce end weight on over extended limbs over the road and carpark by 10-15%. Clean crown of deadwood and any defective branches.
T693	*Fraxinus excelsior* Ash	B2	Reduce end weight on over extended limbs over the carpark by 10-15%. Clean crown of deadwood and any defective branches.
T694	*Fraxinus excelsior* Ash	B2	Clean crown of deadwood and any defective branches.
T695	*Fraxinus excelsior* Ash	B2	Clean crown of deadwood and any defective branches.

Appendix 5


T616
T615


Maxiligh
Anois
REDUCE
SPEED
NOW
T618
T617


T620
T619

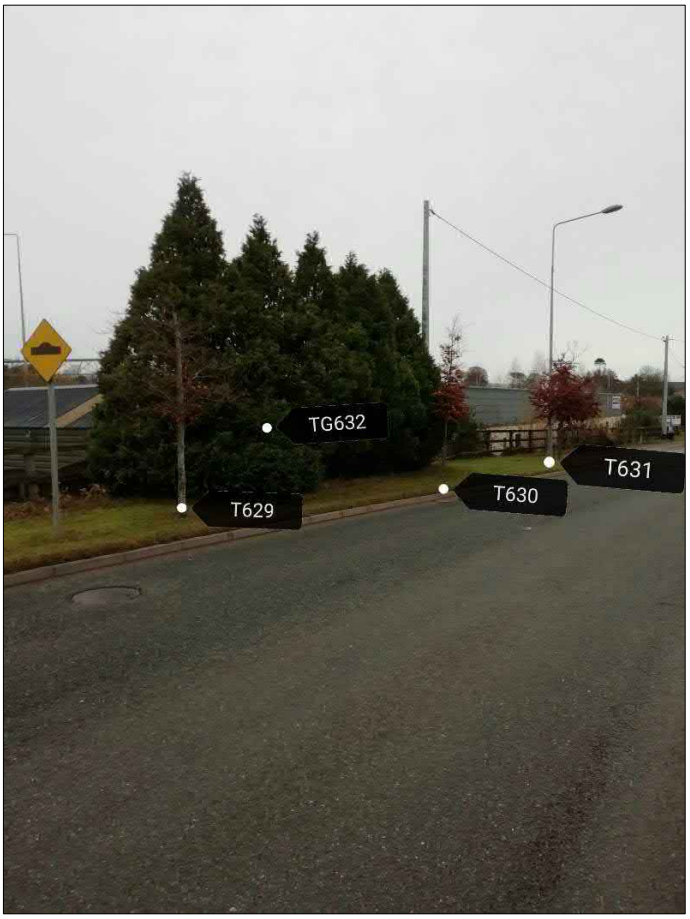

T622
T621


T624
T623


T626
T625


T627

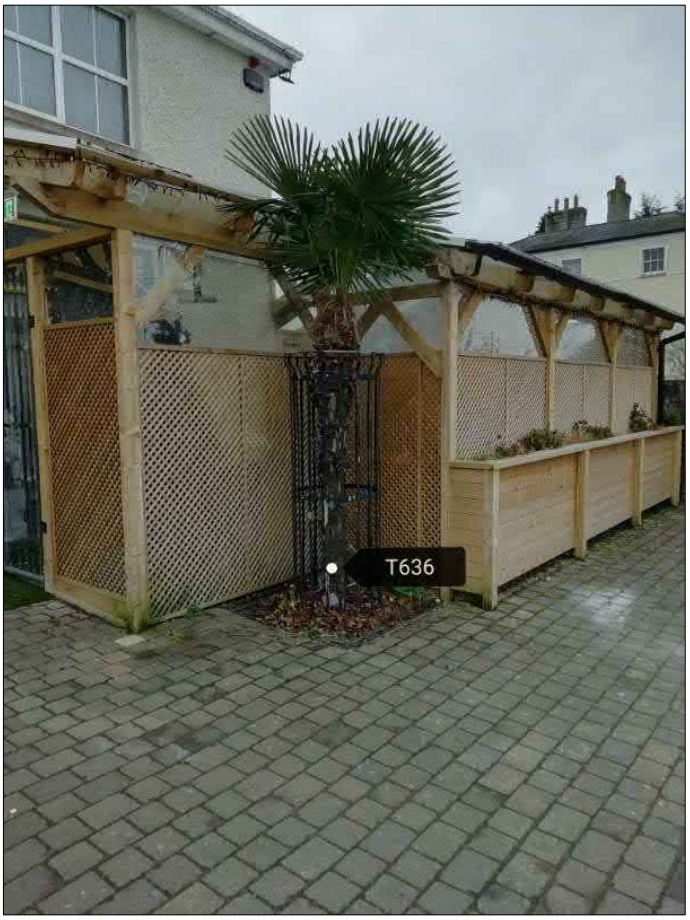

TG628


TG632
T631
T630
T629


VICTORIA
T633

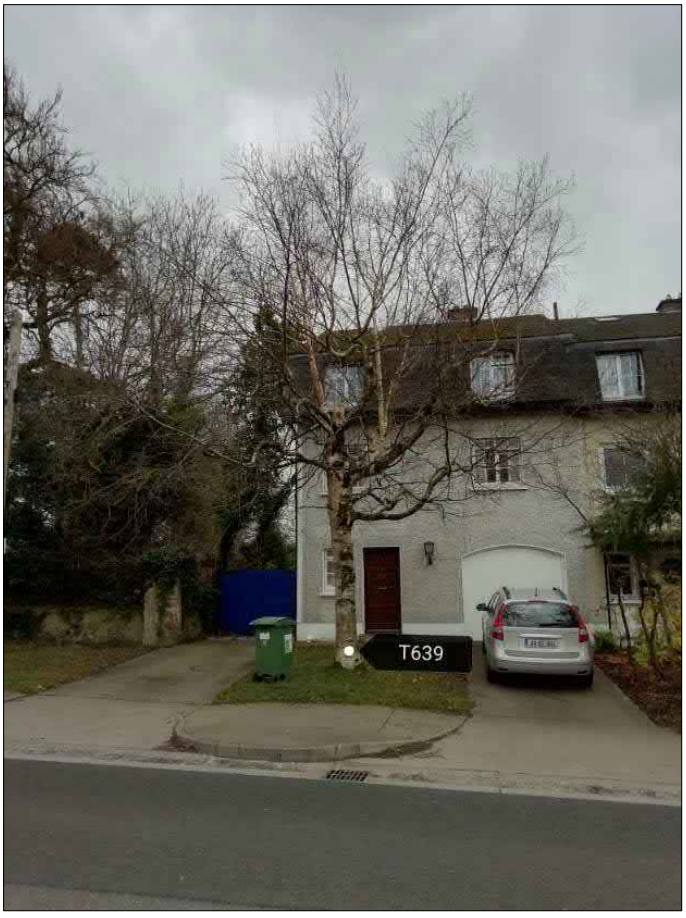

ntra
Our Award Winning Range
T634

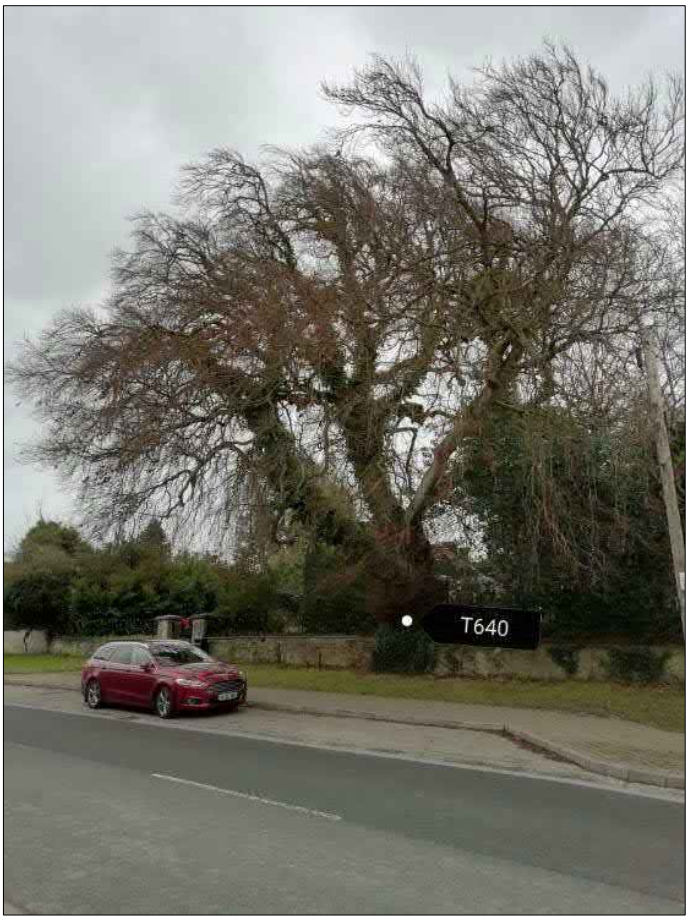

T635


T636


T637


TG638


T639


T640


T643
T642
T641


T646
T645
T644


T649
T648
T647


T651
T650

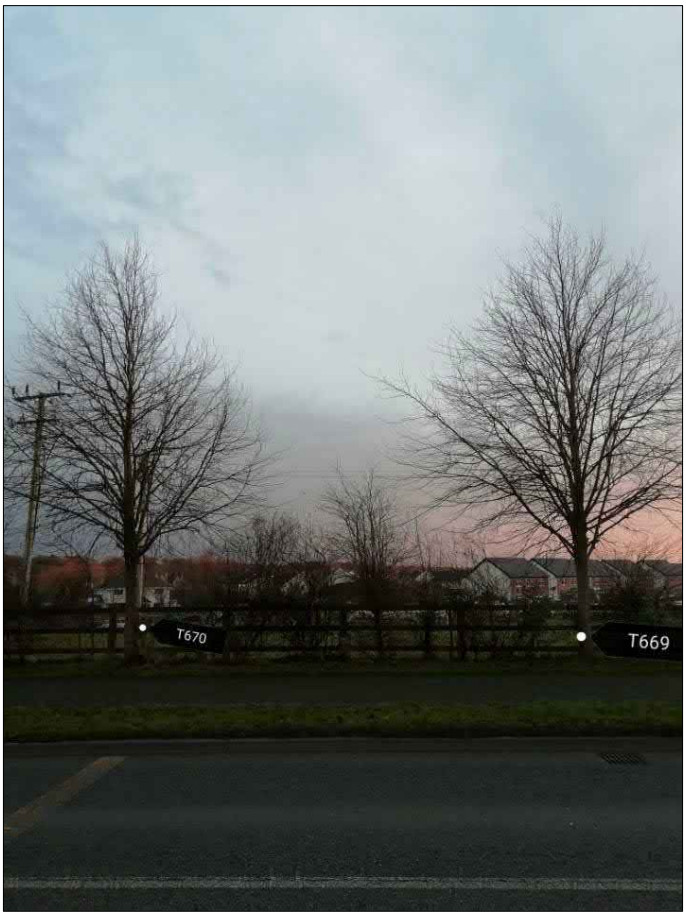

T654
T653
T652


T655
T656
T657


T660
T659
T658


T661
T664
T663
T662


T668
T667
T666
T665


T670
T669


T674
T673
T672
T671


KNIGHTS WOOD
T676
T677
T675
T674


T680
T678
T679
T681

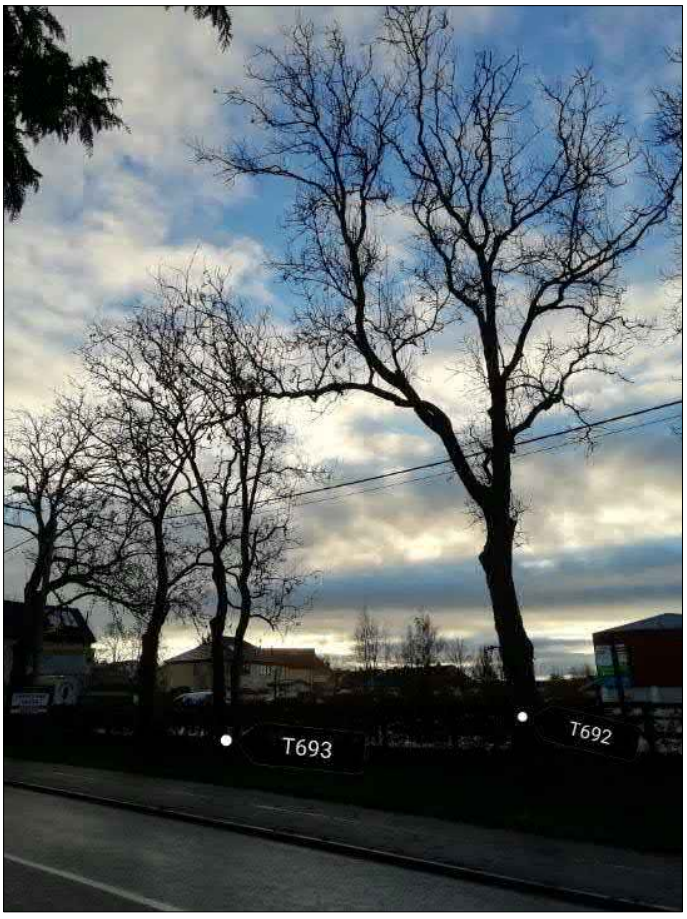

60
km/h
TG682


TG683

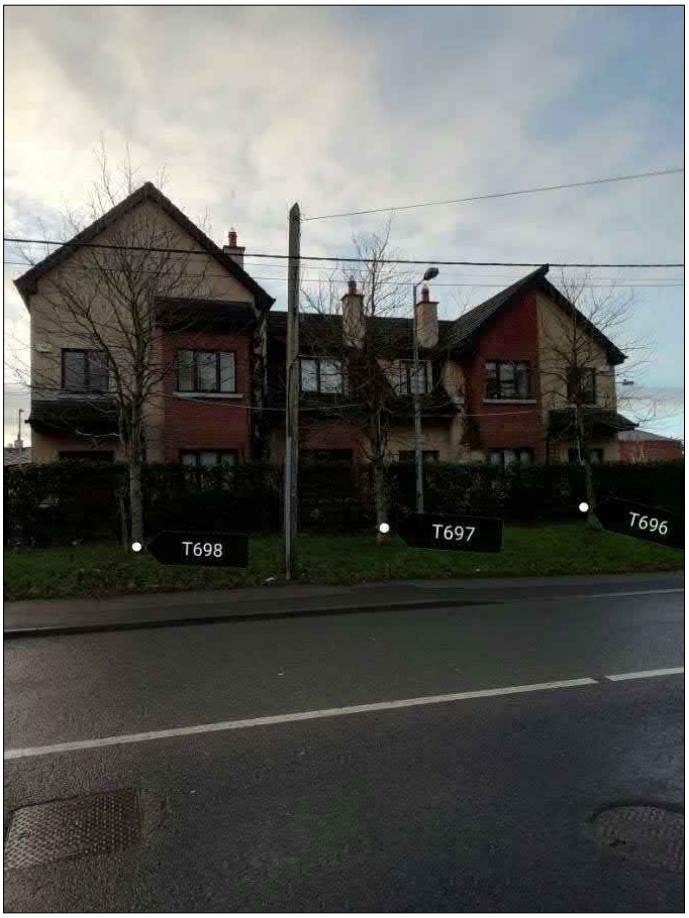

T685
T684
T686


T688
T687


T691
T690
T689

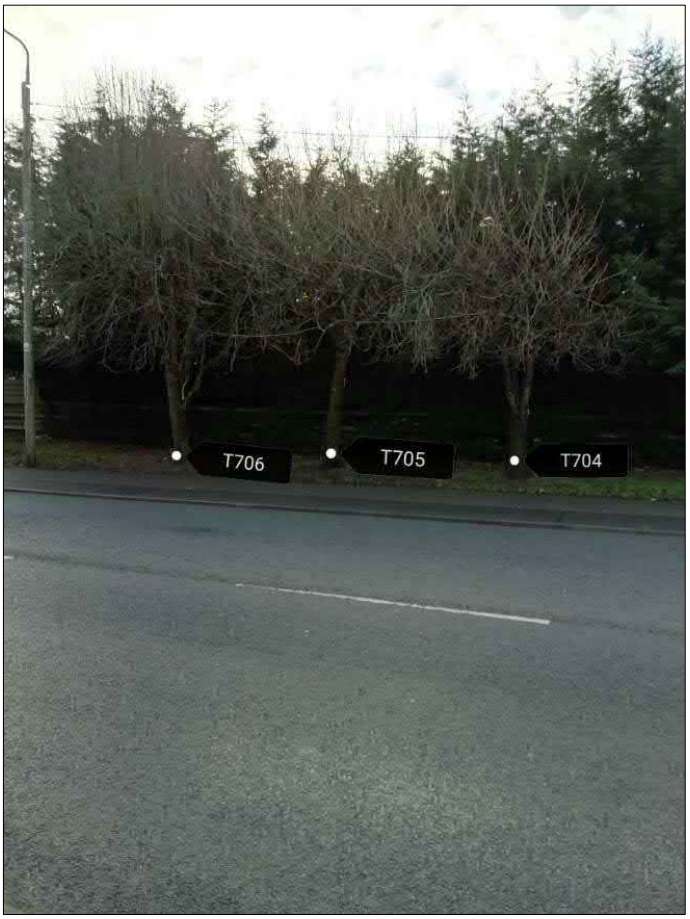

T693
T692


T695
T694


T698
T697
T696


T700
T699


T703
T702
T701


T706
T705
T704


T707
T708


T709
T710

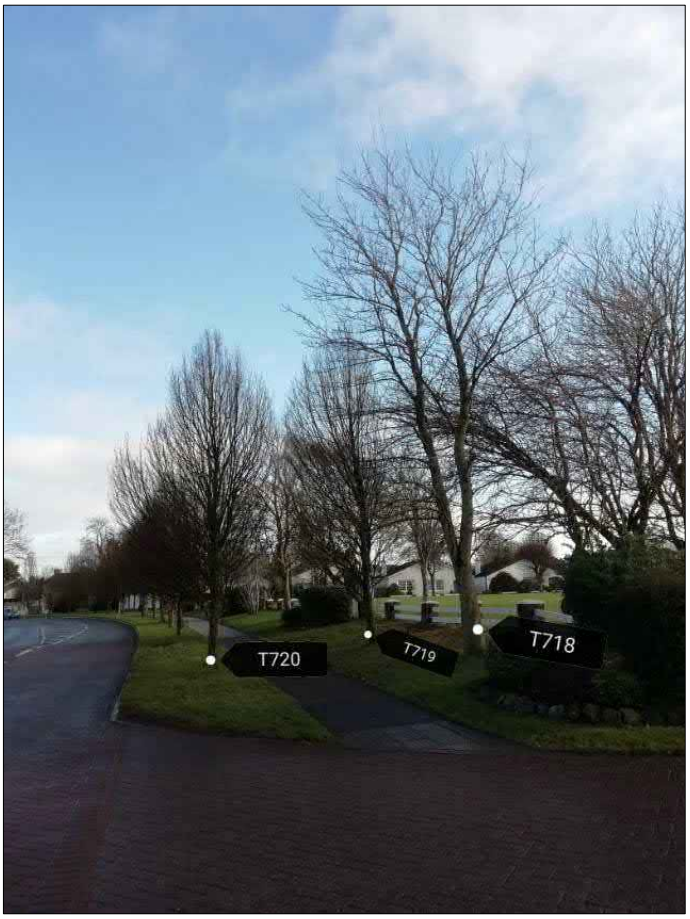

T711
T712


T713
T714


T715
BUS


T717
T716


T718


T720
T719
T718

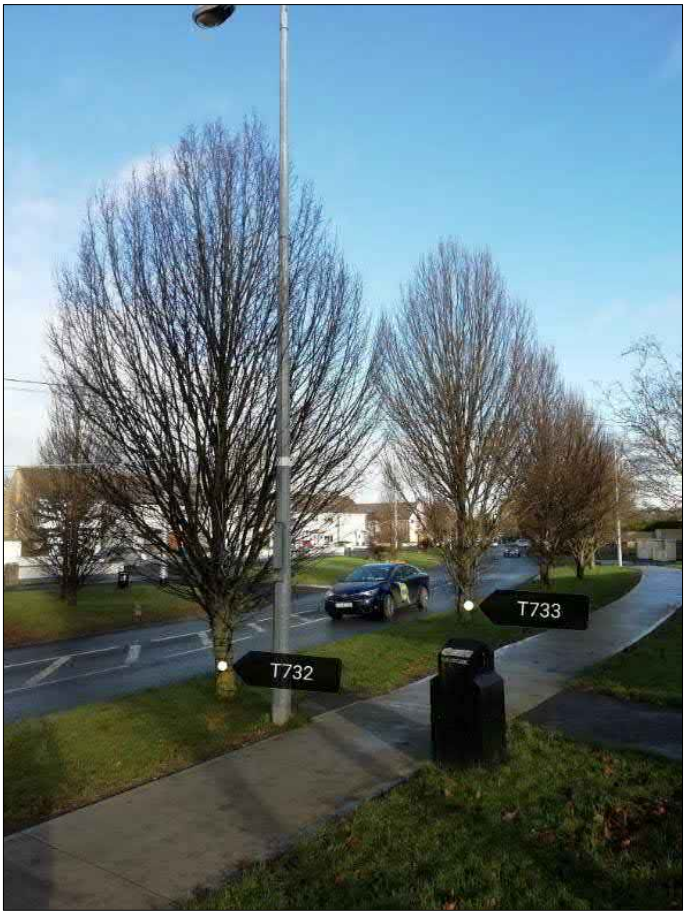

T721
T723
T722


T725
T724

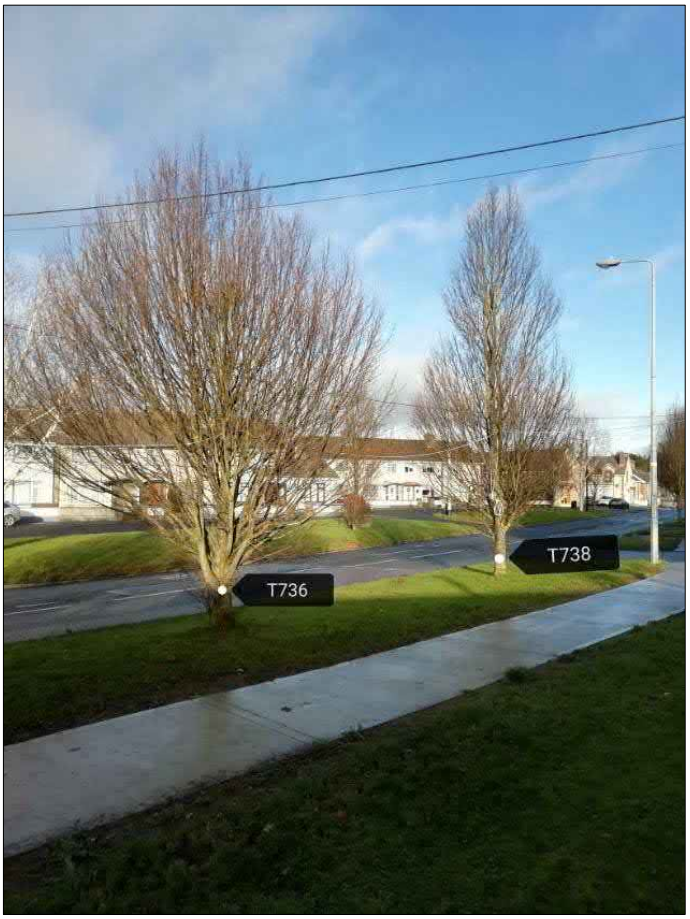

T727
T726


T729
T728


T731
T730


T733
T732


T735
T734


T736
T738


T737


T741
T740
T739


T744
T743
T742


T745

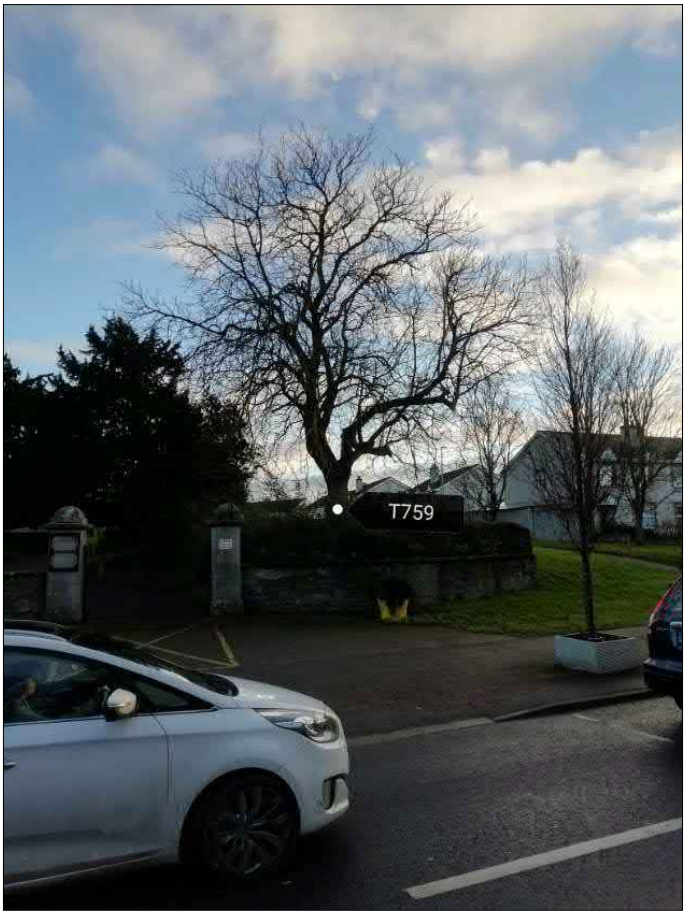

T748
T747
T746


T750-T752
T749


T754
T753


T756
T755


T757
T758


T759


T761
T760


T763
T762


T765
T764


T766
T767


T770
T769
T768

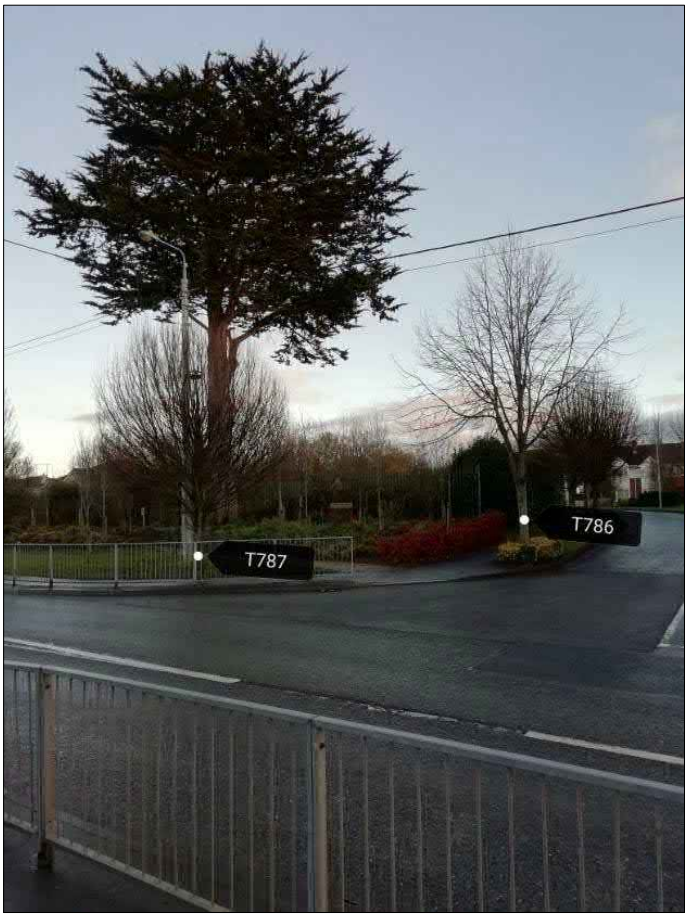

T771

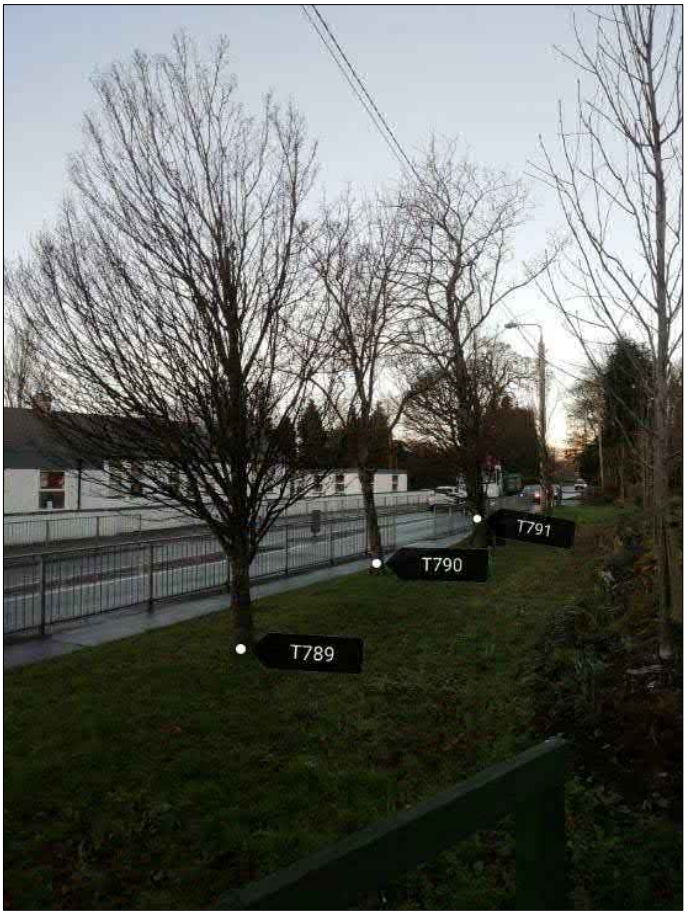

T772

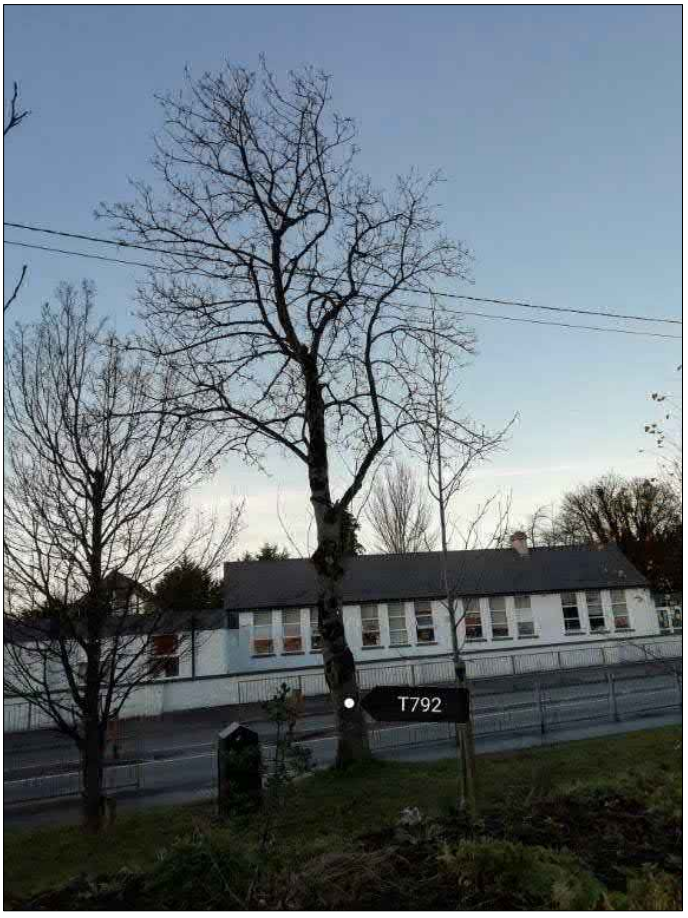

T775-T779
T774
T773


T782-T784
T781
T780


T786
T785


T787
T786


T791
T790
T789


T792

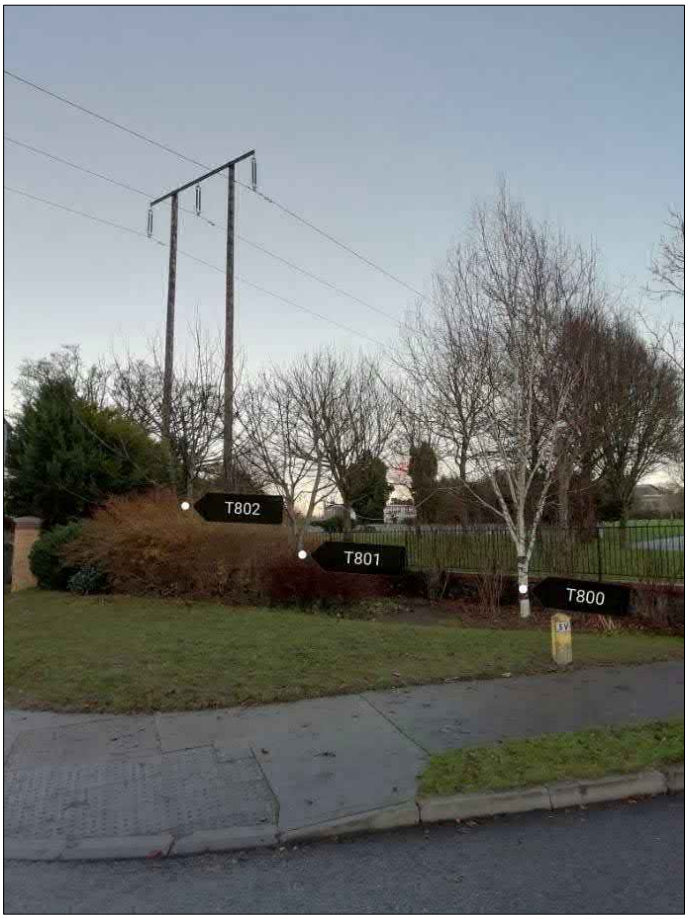

T793


T794


T796
T795


T797


T799
T798


T802
T801
T800


T803


T804
T805

golder.com