Appendix D2
Arborist Report - Clondalkin to Drimnagh

BusConnects Infrastructure Dublin, Clondalkin to Drimnagh

Arboricultural Impact Assessment Report

National Transport Authority

Project number: 60599126

November 2022

Table of Contents

Figures

Tables

1. Introduction

1.1 Background

AECOM has been instructed by the National Transport Authority (The Applicant) to carry out an Arboricultural Impact Assessment of the development proposals for the BusConnects Infrastructure project on the Clondalkin to Drimnagh Core Bus Corridor (CBC) (hereafter referred to as 'the Site' and 'Proposed Development) in support of a planning application. This report identifies the likely direct and indirect impacts of the Proposed Development along with suitable mitigation measures, as appropriate. The Tree Clearance Plan (included within Appendix B) identifies trees to be removed and the Arboricultural Method Statement (Appendix C) illustrates how retained trees are to be successfully protected.

AECOM commissioned the initial preliminary tree survey and report the information from which has informed the following Arboricultural Impact Assessment. This tree survey and report is based on the requirements of BS5837:2012 Trees in relation to design demolition and construction – Recommendations (BS5837) and was prepared by Dr Philip Blackstock (dated 26/09/20).

1.2 Methodology

The tree survey has been based on the topographical survey plan provided. Ref: BCIDA-ACM-SUR_SV-0008_XX_00-M2-GG-0001.

Where tree positions were not included on the topographical survey they have been plotted indicatively and marked with an '*'. All such positions must be considered to be indicative only.

Some areas of the scheme were outside the original tree survey extents and no tree survey data is currently available. In these circumstances, trees have been plotted indicatively based on aerial imagery and/or topographical survey data and recorded as 'un-surveyed/uncategorised tree' features. Where such features are likely to be significantly impacted by the scheme new tree survey data will be obtained in due course.

The survey was otherwise conducted in accordance with the requirements of BS5837:2012 Trees in relation to design, demolition and construction – Recommendations (BS5837).

Dr Blackstock undertook the tree survey data collection and associated verification. AECOM have adopted the tree survey data provided by Dr Blackstock and carried out a desk-based review of the proposed development and the likely impact on trees.

1.3 General Considerations

1.3.1 Soils

On shrinkable clay soil, tree growth can lead to the differential movement of structures as moisture is removed from the soil during the growing season. Soils must be carefully assessed, and any foundations that could be influenced by trees must be installed following the recommendations of National House Building Council (NHBC) Standards Chapter 4.2: Building Near Trees (2020) to avoid potential future damage. Where trees which predate existing structures are to be removed, this can result in heave as the soils are re-wet.

The advice of a suitably qualified engineer must be obtained to inform any potential issue of heave. Specific advice in relation to this issue is beyond the scope of this report.

1.3.2 Trees and Risk in the Context of Development

Tree owners/managers have a legal duty to prevent foreseeable harm. It is generally accepted that this duty can be fulfilled by undertaking proactive inspections of significant trees to identify obvious defects and by taking appropriate remedial action or gaining further advice as appropriate.

Further guidance is available from the National Tree Safety Group.

The tree survey carried out by Dr Blackstock as the basis of this report is primarily for planning purposes, focusing on the quality and benefits of the trees and is not specifically designed to assess the safety of trees on Site. However, when obvious issues have been identified recommendations have been included in the Tree Survey Schedule.

Developers and contractors have responsibilities for health and safety as a result of their actions. Should trees be left in an unstable or hazardous condition those responsible could be subject to prosecution along with the potential for further Civil claims for damages.

1.3.3 Trees and Wildlife

Full consideration must be given to the presence of species protected under the Wildlife Act (1976 – as amended) and other relevant legislation protected wildlife and habitats, in particular the presence of bats and nesting birds. It is recommended that wherever possible, significant tree/hedge works take place outside of the typical bird nesting season of March to September. The advice of a qualified ecologist should be sought in relation to tree works with the potential to impact on protected species.

1.3.4 Tree Works

Any tree surgery recommendations contained within this report are to be undertaken in accordance with BS3998: 2010 Tree work – Recommendations (BS3998) by suitably qualified and insured contractors. Significant pruning works are best undertaken when trees are dormant or outside periods of high functional activity to reduce the overall impact on energy available to the tree for growth and processes. In general the optimum period for works is between November to February and July to August (subject to the presence of protected species) when the tree is less active and better placed to respond to wounding and a reduction in leaf area.

2. Initial Tree Survey Overview

2.1 The Site

The Site, as shown in Figure 1 below, commences along New Nangor Road to the west of the M50 at the junction with Woodford Walk. Following the New Nangor Road east the route continues on Naas Road, Walkinstown Avenue and Long Mile Road to its junction with Walkinstown Road where it joins the Greenhills CBC.

Figure 1 BusConnects CBC Route 8, Clondalkin to Drimnagh[1]

The majority of the route passes through commercial or light industrial areas or recreational areas. One area of residential properties is located close to but set back from the Long Mile Road.

2.2 The Trees

The trees included within Dr Blackstock's report are predominantly young to early-mature with only around 30% considered to be mature. The most frequently encountered species include plane (*Platanus x hispanica*), Norway maple (*Acer platanoides*), birch (*Betula sp.*), hornbeam (*Carpinus betulus*), lime (*Tilia sp.*), Lombardy poplar (*Populus nigra 'Italica'*) and sycamore (*Acer pseudoplatanus*) with a good collection of less frequently occurring species such as beech (*Fagus sylvatica*), purple plum (*Prunus 'Pissardii'*), laburnum (*Laburnum anagyroides*), rowan (*Sorbus aucuparia*), Monterey cypress (*Cupressus macrocarpa*) and yew (*Taxus baccata*).

The majority of the trees are either street trees or are growing within the grounds of schools, offices, factory units or retail premises. Belts and avenues of trees have also been planted along the New Nangor Road providing separation between the road and the Grand Canal and adjoining park.

2.3 Statutory and Non-Statutory Designations

Dr Blackstock contacted Dublin City Council (DCC) and South Dublin County Council (SDCC) in relation to statutory designations affecting trees. Three Tree Preservation Orders (TPOs) are identified in the Dublin City Development Plan 2016-2022 Written Statement document although none of these are within or close to the Site.

The Site is not within or near to an area known to be designated by a Special Amenity Area Order, however this must be confirmed with the planning authority.

The Site does not incur within the Clondalkin Architectural Conservation Area and no information on other Conservation Areas has been made available via SDCC publicly available resources. In such areas it is

[1] https://busconnects.ie/media/2110/08-clondalkin-to-drimnagh-preferred-route-301020fa-web.pdf

understood that trees are not given specific protection per se but the contribution they make to the wider Conservation Area is taken into account as part of the planning process.

A felling licence may be required by the Forest Service to fell trees where an exception does not apply (full planning consent is an exception to this requirement where tree removal was specifically identified at the application stage).

The Data.gov.ie Ancient and Long-Established Woodland Inventory (2010) indicates that there are no ancient or long-established woodlands in proximity to the Site boundary.

No veteran trees were identified during the survey.

3. The Proposed Development

The Proposed Development forms part of the National Transport Authority's (NTA) BusConnects programme which is a key element of the Governments' policies to improve bus and sustainable transport services within Dublin.

The Proposed Development constitutes the Clondalkin to Drimnagh CBC and is broken down into specific sections with the anticipated work for each (detailed below) compiled from the BusConnects Preferred Route documentation[2].

Woodford Walk to Naas Road – Nangor Road

Within this section it is proposed, where possible, to provide a footpath, segregated cycle track, bus lane and general traffic lane in each direction on the New Nangor Road. Continuous bus priority will be provided in both directions except under the M50 overbridge where signal-controlled priority will be provided westbound in the general traffic lane. At the Woodford Walk bus stop, to the north of Nangor Road, no footway is proposed up to the Greenway connection to the east of the M50 overbridge. Pedestrians are able to use the Greenway to the north or the footway provided to the south of the carriageway at this point.

It is proposed to prohibit right turns in the southbound direction at the junction of Killeen Road (L1013) to allow for the unobstructed flow of buses along this section of the New Nangor Road.

A two-way cycle track is proposed on the northside of Nangor Road between Killeen Road and the Naas Road.

At the junction of the New Nangor Road/ Naas Road/Long Mile Road a grade-separated pedestrian and cycle facility is proposed through the existing signalised junction.

Naas Road to Walkinstown Road via Walkinstown Avenue and the Long Mile Road

On the Naas Road between the Long Mile Road and Walkinstown Avenue, the existing lane arrangement of one bus lane and two general traffic lanes in each direction will be maintained. It is proposed to improve the segregation between the carriageway and cycle routes on both sides of the road.

A diversion of left-turning traffic into John F Kennedy Drive is proposed to improve the interchange between bus and the Luas Red Line at the junction of Kylemore Road and Naas Road. This will also include the modification of the bus stop facilities on the eastbound carriageway.

Alteration to the lane configuration at the junction of Walkinstown Avenue/Long Mile Road will improve priority for buses turning right into Walkinstown Avenue. Left turn slips are to be removed and segregated cycle facilities ill improve the level of service for vulnerable road users.

This CBC ties in with the Greenhills CBC at Slievebloom Park, in advance of Walkinstown Road.

The Proposed Development is overlaid on the Tree Protection Plan (Appendix B).

4. Arboricultural Impact Assessment

4.1 Purpose

This impact assessment sets out the likely principal direct and indirect impacts of the Proposed Development on the trees on or immediately adjacent to the Site and suitable mitigation measures to allow for the successful retention of significant trees or to mitigate for trees to be removed, where appropriate.

A brief summary of trees to be removed, tree works and incursions related to the Proposed Development are detailed within the table below.

[2] https://busconnects.ie/media/2110/08-clondalkin-to-drimnagh-preferred-route-301020fa-web.pdf

Table 1 Summary of removals, incursions and pruning for individual trees to facilitate the Proposed Development

Impact	Category A	Category B	Category C	Category U	Un-categorised Trees
Individual trees to be removed to facilitate the Proposed Development	0	26 individual trees	4 individual trees	2 individual trees	2 individual trees
Individual trees to be retained but subject to an RPA incursion	0	23 individual trees	1 individual tree	0	0
Individual trees to be pruned to facilitate the Proposed Development	0	0	0	0	0

Table 2: Summary of removals, incursions and pruning for tree groups to facilitate the Proposed Development

Impact	Category A	Category B	Category C	Category U	Un-categorised Tree Features
Tree groups to be removed to facilitate the Proposed Development	2 tree groups	14 groups, 6 hedges and 2 shrubs	0	0	0
Tree groups to be retained but subject to an RPA incursion	1 tree group	2 hedges and 10 tree groups	0	0	0
Tree groups to be pruned to facilitate the Proposed Development	0	0	0	0	0

4.2 Trees to be Removed

Thirty individual trees, 16 groups, six hedges and two shrubs are to be removed to facilitate the Proposed Development; this includes part of two tree groups classed as high quality (Category A), 26 individual trees, six full tree groups, part of eight tree groups, three full hedges, part of three hedges and two full shrubs classed as moderate quality (Category B) and the remaining four individual trees classified as low quality (Category C).

Two individual uncategorised tree features are also to be removed. These features were outside the scope of the original tree survey or were omitted due to access constraints and were not subject to a formal tree survey. Categorisation and further assessment of these trees should be completed as part of the detailed design tree surveys.

In addition, two individual trees which are unsuitable for retention (Category U) are also recommended for removal. These trees are arguably not suitable for long term retention and their removal is justified regardless of the Proposed Development.

Tree removals are listed in the Tree Survey Schedule included as Appendix A.

Many of the trees to be removed are within the existing road boundary and/or the red line application boundary for the Site. However, some trees are likely to be under third party ownership (indicated by the P suffix in the Tree Survey Schedule in Appendix A).

The design has been developed to minimise any negative impact on significant trees as fully as possible. Where tree loss is required it is necessary to achieve the proposals for the Site. The latest available information on the road layout, landscape general arrangement, drainage, structures, earthworks, lighting and compounds have been reviewed to inform this assessment.

Tree removals assume a reasonable worst case and in practice some trees may be feasible to retain subject to on site investigation such as trail holes to determine root spread in conjunction with the guidance of the Project Arboriculturist.

Where part of a group of trees is to be removed the Project Arboriculturist must carry out a site walkover immediately following site clearance work to determine the suitability and stability of retained trees which may have been impacted by a loss of companion shelter. Where any additional tree pruning or removals are required these will be discussed with the Project Arboriculturist.

Tree removals will be mitigated with a high-quality scheme of new tree planting and associated landscaping works as detailed in the proposed Landscape General Arrangement Plans.

4.3 Tree Works

Tree removals to facilitate the Proposed Development are detailed in the Tree Survey Schedule included as Appendix B. Tree removals aside, no tree works such as pruning have been identified at this stage. Where new areas of access are proposed close to trees crown lifting to ensure a clear height of 2.5m for footways, 3m for cycleways and 5.2m for roads is likely to be required. The requirement for pruning should be addressed following a pre-commencement site walkover to review any trees which could form an obstruction, or which require pruning to facilitate construction works and to prevent inadvertent damage to tree crowns.

This level of pruning will generally not have a significant negative impact on the health or amenity of the trees in question.

No additional works to retained trees are likely to be required. All tree work is to follow the principles of BS3998: 2010 Treework – Recommendations and must be carried out by suitably qualified and insured contractors.

Should the requirement for additional tree works be identified, this will be discussed with the Project Arboriculturist.

Where trees belong to third parties any pruned branches should be offered back to the tree owner and prior consent must be obtained for any works beyond the boundary.

4.4 Incursions within the RPA or Canopy Spread

The design has been developed to avoid the area of constraint around trees where feasible. A range of works are required within or close to the RPA of retained trees which will require specialist working methods to ensure trees aren't subject to a significant negative impact.

The Arboricultural Method Statement included as Appendix C sets out the methodology for specific activities near retained trees. The following general principles have been applied:

- Where resurfacing of existing hard surfacing is required this will be applied over the existing wearing course or on the existing intact subbase following the careful removal of the wearing course.
- New surfacing on existing unsurfaced ground within a significant proportion of an RPA will be achieved using a three-dimensional cellular confinement system (e.g. Cellweb or equivalent) installed without excavation using no dig techniques. This applies to nineteen individual trees and eight tree groups of moderate quality (Category B) and includes trees: T34, T104, T107, T108, T109, T110, T114, T115, T116, T117, T118, T119, T168, G172, T173, G174, G175, G176, G178, G179, G180, T183, T185, G208, T210 and T216.
- Where the extent of new hard surfacing is limited to the outer RPA only and where the use of a three dimensional cellular confinement system isn't justified or feasible small carefully managed incursions will be acceptable. The initial excavation will be carried out by hand under the supervision of the Project Arboriculturist. Roots will be carefully pruned back and any uncured concrete will be carefully managed with an impermeable liner applied to prevent leaching into the retained RPA. This will apply to one Category A group (G157) and four groups and two trees of Category B (G172, G178, T191, T192, G200 and G229).

- Where existing hard surfacing is to be converted to soft ground this will be achieved using hand tools within RPAs under the supervision of the Project Arboriculturist. This will apply to one un-categorised tree group and will likely result in improved growing conditions for trees within this group.
- Where the existing road is to be widened requiring a section of cut into a tree RPA or where new drainage cant feasibly be adjusted to fully avoid the RPA, tree retention will be feasible where trees are considered on balance to be of an age, condition and species which will tolerate the degree of disturbance required (generally not more than a maximum of 20% of the overall RPA) and that this is preferable to the loss of the tree. The area of excavation nearest the tree will be carried out by hand and roots will be carefully assessed by the Project Arboriculturist and pruned as required. New kerb stones and any haunching will be the narrowest profile feasible and alternative methodologies such as reinforced bridged/lintel sections of kerb can be applied should significant roots need to be retained and worked around. This will apply to Trees T191, T192 and T212 which are Category B features.
- Where a new boundary wall is to be constructed within an RPA, alternative footings utilising low diameter pads or piles will be carefully located to avoid tree roots (via hand dug trial holes) and will support floating beams set at or above ground level unless trial holes (under arboricultural supervision) determine that limited careful excavation is viable to allow beams to be set into the ground. New low boundary walls are proposed within the RPA of three Category B trees (T129, T131 and T132) and one Category C tree (T130).
- The position of new lamp columns, signs and bus shelter footings can be locally adjusted to avoid significant roots and tree canopies and the lowest diameter footings feasible will be employed (such as screw piles or equivalent). This will apply to H111, G157, G172 and T185.
- All new or diverted utilities will avoid the RPA of retained trees where possible, where this is not possible, they will be installed using trenchless methods or via careful excavation in accordance with BS5837: 2012 and guidance from the National Joint Utilities Group (NJUG) Volume 4. Utilities to be removed will be cut off and left in situ where feasible to minimise disturbance or will be removed via careful excavation.

4.5 The Future Management of Retained Trees

Retained trees will require periodic inspection to assess their structural condition and safety. Occasional removal of dead wood or other remedial works to address significant defects or obstructions may be required in areas of frequent access. This is unlikely to be overly onerous and will be the responsibility of the tree owner.

Trees within and adjacent to the Site will require ongoing maintenance and assessment by a competent person to ensure that any risks from tree failure are managed in accordance with best practice.

All tree works recommended as a result of the preliminary tree survey of the Site which considered trees in the context of the current use of the Site (these works are included as preliminary management recommendations in the Tree Schedule in Appendix A of this report) should be actioned within the recommended timescales.

4.6 Tree Protection

Retained trees are vulnerable to damage from construction activities which can include physical damage to stems and branches following impacts with plant. Root severance following trenching, root death or dysfunction following damage to soil structure (caused by the movement of people or machinery on unsurfaced ground) or via the spillage of materials toxic to tree health. The default position is that the RPA and canopy spread of trees to be retained will form an effective Construction Exclusion Zone, secured with robust fencing where no access will be permitted, in the context of the Site (road environment) this will typically apply where there is no existing hard surfacing in place or where existing hard surfacing is to be removed. Where access is necessary within this area special measures such as the use of ground protection (or retention of existing hard surfacing) and arboricultural supervision are generally required. In some cases existing boundary walls and fences can be employed as a tree protection barrier where they are robust and sufficient to prevent access or damage.

Outline tree protection measures are considered in Appendix C of this report.

4.7 Tree Planting

Existing areas of unsurfaced ground must be protected during the demolition and construction phases if they are to be re-used for new plantings. Protection can be achieved using fit for purpose ground protection measures as set out in BS5837:2012 Section 6.2.3 or by creating a fenced exclusion zone. Where protection is not feasible, soil amelioration or replacement works will be required to ensure suitable growing conditions for new trees to fully establish.

Where new trees are to be planted, the minimum planting distances detailed in Annexe A, Table A.1 of BS5837:2012 must be considered, to prevent direct damage to services and structures from future tree growth.

New tree planting should be implemented in accordance with the guidance set out in BS8545: 2014 Trees: from nursery to establishment in the landscape – Recommendations.

5. Conclusions

Thirty individual trees, 16 groups, six hedges and two shrubs are to be removed to facilitate the Proposed Development; this includes part of two tree groups classed as high quality (Category A), 26 individual trees, six full tree groups, part of eight tree groups, three full hedges, part of three hedges and two full shrubs classed as moderate quality (Category B) and the remaining four individual trees classified as low quality (Category C).

Two individual uncategorised tree features are also to be removed. These features were outside the scope of the original tree survey or were omitted due to access constraints and were not subject to a formal tree survey. Categorisation and further assessment of these trees should be completed as part of the detailed design tree surveys.

In addition, two individual trees which are unsuitable for retention (Category U) are also recommended for removal. These trees are arguably not suitable for long term retention and their removal is justified regardless of the Proposed Development.

The design has been developed to minimise the impact on trees, and trees are proposed to be retained where careful construction methodologies will allow their retention. Trees are to be removed due to a direct conflict with the Proposed Development and where specialist methodologies or design tweaks are not considered practical to facilitate their retention.

Tree loss will be mitigated with a robust and high-quality scheme of new tree planting as detailed in the proposed Landscape General Arrangement Plans.

Soil structure for areas of new tree planting where the ground is currently unsurfaced will either be protected using ground protection or fenced exclusion zones; or the soil structure will be ameliorated or replaced following the completion of construction works on Site.

References

British Standards Institution (BSI), BS5837:2012. Trees in relation to design, demolition and construction – Recommendations. BSI

British Standards Institution (BSI), BS3998:2010. Tree work – Recommendations. BSI

British Standards Institution (BSI) BS8545: 2014 Trees: from the nursery to independence in the landscape - Recommendations

National House Building Council (NHBC) Standards, (2021). Chapter 4.2: Building Near Trees

National Joint Utilities Group (NJUG) Volume 4, Issue 2, (2007). NJUG Guidelines for the Planning, Installation and Maintenance of Utility Apparatus in Proximity to Trees.

National Tree Safety Group (NTSG), 2011. Common sense risk management of trees. Forestry Commission.

Dublin City Council (2016) Dublin City Tree Strategy 2016-2020
https://www.dublincity.ie/residential/parks/strategies-and-policies/tree-strategy#:~:text=The%20Tree%20Strategy%20seeks%20to,the%20management%20of%20public%20trees

Dublin City Council (2016) Dublin City Development Plan 2016-2022 Written Statement (2016)

Appendix A Tree Survey Schedule[3]

Tree No.	Tag No.	Species	Botanical Name	Height (m)	DBH (mm)	Canopy Spread				Lower branch direction and height (m)	Crown Clearance (m)	Age	General Observations					ULE	Category	RPA base radius (mm)	Priority	Works to facilitate development	No of trees in groups (where known)
						N	E	S	W				Crown Form	Condition	Defect	Obstacle	Action						
S 08-001P	-	Elder	*Sambucus nigra*	5	170#	3	3	2	2	N-0	1	EM	Multi stem	Fair	None	Path	Crown lift to 2.4m Over path	20+	B1	2040	Routine		
G 08-002P#	-	Plum	*Prunus domestica*	4	140#	3	3	3	3	-	1	EM	Multi stem	Fair	None	Path	Crown lift to 2.4m Over path	20+	B1	1680	Routine		
T 08-003P#	-	Plum	*Prunus domestica*	7	672#	4	4	4	3	W-0	1	M	Multi stem	Fair	None	Path	Crown lift to 2.4m Over path	20+	B1	8064	Routine		
T 08-004P#	-	Plum	*Prunus domestica*	4	150#	3	3	3	3	E-1	2	EM	3 stems from 1.0m	Fair	None	None	No action is required	20+	B1	1800	N/a		
T 08-005P#	-	Hawthorn	*Crataegus sp.*	7	330#	4	5	4	3	W-1	2	M	Multi stem from 2.0m	Fair	Excessive ivy	None	No recommendations are given	20+	B1	3960	N/a		
G 08-006P#	-	Gean, Plum	*Prunus avium, Prunus domestica*	8	220#	5	4	4	3	S-1	2	EM	Multi stem	Fair	None	None	No action is required	20+	B1	2640	N/a		
T 08-007P#	-	Rowan	*Sorbus aucuparia*	6	381#	3	3	4	2	E-0	2	M	Multi stem	Fair	None	None	No action is required	20+	B1	4570	N/a		
T 08-008P#	-	Hawthorn	*Crataegus sp.*	7	350#	3	4	4	4	E-1	2	M	3 stems from 1.0m	Fair	Thinning crown	None	No recommendations are given	20+	B1	4200	N/a		
T 08-009P#	-	Apple	*Malus sp.*	7	600#	2	5	4	5	N-0	2	M	Multi stem	Fair	None	None	No action is required	20+	B1	7200	N/a		
T 08-0010P#	-	Rowan	*Sorbus aucuparia*	7	282#	1	1	3	3	W-0	2	M	2 stems from The ground	Poor	Basal rot	None	No recommendations are given	10+	C1	3384	N/a		

[3] Information provided by Dr Philip Blackstock 26/09/20

Tree No.	Tag No.	Species	Botanical Name	Height (m)	DBH (mm)	Canopy Spread				Lower branch direction and height (m)	Crown Clearance (m)	Age	General Observations					ULE	Category	RPA base radius (mm)	Priority	Works to facilitate development	No of trees in groups (where known)
						N	E	S	W				Crown Form	Condition	Defect	Obstacle	Action						
T 08-0011P#	-	Hawthorn	*Crataegus sp.*	7	320#	3	4	4	2	S-1	2	M	2 stems from 1.0m	Fair	None	None	No action is required	20+	B1	3840	N/a		
T 08-0012	12	Plane	*Platanus X hispanica.*	14	450	7	5	6	3	E-2	2	EM	2 stems from 2.0m, Spreading crown	Fair	None	Lamp, Road	Crown lift to 2.4m Over path, Clear lamp	40+	B1	5400	Routine	Fell for hard surfacing	
T 08-0013	13	Plane	*Platanus X hispanica.*	12	270	6	3	5	3	E-3	3	SM	Single main stem with heavy side branches	Fair	None	Road	Crown lift to 5.1m Over road	40+	B1	3240	Routine		
T 08-0014	14	Plane	*Platanus X hispanica.*	13	360	5	3	5	4	E-4	4	SM	Multi stem from 4.0m, Spreading crown	Fair	None	0	Crown lift to 5.1m Over road	40+	B1	4320	Routine		
T 08-0015	15	Plane	*Platanus X hispanica.*	13	290	5	4	4	5	W-3	3	SM	Multi stem from 3.0m, Spreading crown	Fair	None	Road	Crown lift to 5.1m Over road	40+	B1	3480	Routine		
T 08-0016	16	Plane	*Platanus X hispanica.*	12	280	4	5	5	2	E-3	2	SM	Multi stem from 3.0m	Fair	None	Road	Crown lift to 5.1m Over road	40+	B1	3360	Routine		
T 08-0017	17	Plane	*Platanus X hispanica.*	12	240	4	4	3	2	E-2	3	SM	Single main stem with heavy side branches	Fair	None	None	No action is required	40+	B1	2880	N/a		
T 08-0018	18	Plane	*Platanus X hispanica.*	13	320	5	4	4	4	W-2	0	EM	2 stems from 2.0m	Fair	None	Road	Crown lift to 5.1m Over road	40+	B1	3840	Routine		
T 08-0019	19	Plane	*Platanus X hispanica.*	13	230	5	3	4	4	S-2	1	SM	Single main stem with heavy side branches	Fair	None	Road	Crown lift to 5.1m Over road	40+	B1	2760	Routine		
T 08-0020	20	Plane	*Platanus X hispanica.*	10	200	5	5	4	3	W-2	0	SM	3 stems from 2.0m	Fair	None	Road	Crown lift to 5.1m Over road	40+	B1	2400	Routine		
T 08-0021	21	Plane	*Platanus X hispanica.*	10	190	5	5	3	2	E-2	2	SM	Single main stem with heavy side branches	Poor	Thinning crown	Road	Crown clean, Crown lift to 5.1m Over road	40+	C1	2280	Routine		

Tree No.	Tag No.	Species	Botanical Name	Height (m)	DBH (mm)	Canopy Spread				Lower branch direction and height (m)	Crown Clearance (m)	Age	General Observations					ULE	Category	RPA base radius (mm)	Priority	Works to facilitate development	No of trees in groups (where known)
						N	E	S	W				Crown Form	Condition	Defect	Obstacle	Action						
T 08-0022	22	Plane	*Platanus X hispanica.*	10	260	5	3	4	2	N-2	2	SM	3 stems from 2.0m	Fair	None	Lamp, Road	Crown lift to 5.1m Over road, Clear lamp	40+	B1	3120	Routine		
T 08-0023	23	Plane	*Platanus X hispanica.*	12	160	4	4	4	1	E-2	2	SM	Single main stem with heavy side branches	Fair	None	Road	Crown clean, Crown lift to 5.1m Over road	40+	B1	1920	Routine		
T 08-0024	24	Plane	*Platanus X hispanica.*	12	300	6	5	5	3	E-3	2	SM	Multi stem from 3.0m, Spreading crown	Fair	Forming cavity, Recent crown failure, Excessive end weight	Road	Crown clean, Crown lift to 5.1m Over road, Reduce end weight by 2.0m	40+	B1	3600	< 12 months		
T 08-0025	25	Plane	*Platanus X hispanica.*	11	140	4	3	2	1	E-2	2	SM	Single main stem with heavy side branches	Fair	Thinning crown	None	Crown clean	40+	B1	1680	Routine		
T 08-0026	26	Sycamore	*Acer pseudoplatanus*	5	210	3	4	3	3	E-2	2	EM	Multi stem from 2.0m, Spreading crown	Fair	None	Road	Crown lift to 5.1m Over road	40+	B1	2520	Routine		
T 08-0027	27	Swedish whitebeam	*Sorbus intermedia*	8	330	4	4	3	3	E-0	1	M	Multi stem from 2.0m	Fair	None	Lamp, Road	Crown lift to 5.1m Over road, Clear lamp	20+	B1	3960	Routine		
T 08-0028	28	Plane	*Platanus X hispanica.*	15	440	7	6	6	5	N-3	2	EM	3 stems from 3.0m	Fair	Excessive end weight	Road	Crown lift to 5.1m Over road, Reduce end weight by 2.0m	40+	B1	5280	< 12 months		
T 08-0029	29	Plane	*Platanus X hispanica.*	15	500	6	5	7	5	W-3	1	EM	2 stems from 4.0m	Fair	Excessive end weight	Road	Crown lift to 5.1m Over road, Reduce end weight by 2.0m	40+	B1	6000	< 12 months		
T 08-0030	30	Plane	*Platanus X hispanica.*	14	440	5	4	5	5	N-1	2	EM	3 stems from 1.0m	Fair	Forming cavity	Road	Crown lift to 5.1m Over road, Reduce end weight by 2.0m	20+	B1	5280	< 12 months		
T 08-0031	31	Plane	*Platanus X hispanica.*	14	420	7	6	6	3	E-2	1	EM	2 stems from 3.0m	Fair	None	Road	Crown lift to 5.1m Over road	40+	B1	5040	Routine		

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						N	E	S	W				Crown Form	Condition	Defect	Obstacle	Action						
T 08-0032	32	Plane	*Platanus X hispanica.*	14	420	7	5	7	5	S-2	1	EM	Multi stem from 3.0m, Spreading crown	Fair	Excessive end weight	Lamp, Road	Crown lift to 5.1m Over road, Reduce end weight by 2.0m, Clear lamp	40+	B1	5040	< 12 months		
T 08-0033	33	Plane	*Platanus X hispanica.*	14	490	7	6	6	6	E-2	1	EM	Multi stem from 2.0m, Spreading crown	Fair	Excessive end weight	Road	Crown lift to 2.4m Over path, Reduce end weight by 2.0m	40+	B1	5880	< 12 months		
T 08-0034	34	Plane	*Platanus X hispanica.*	14	420	7	6	6	5	W-2	1	EM	Single main stem with heavy side branches	Fair	None	Road	Crown lift to 5.1m Over road	40+	B1	5040	Routine	No dig surfacing	
T 08-0035	35	Plane	*Platanus X hispanica.*	14	500	5	6	6	4	E-4	1	EM	2 stems from 4.0m	Fair	None	Road	Crown lift to 5.1m Over road	40+	B1	6000	Routine		
T 08-0036	36	Plane	*Platanus X hispanica.*	15	430	7	5	7	5	E-2	1	EM	2 stems from 2.0m	Fair	Recent crown failure	Road	Crown clean, Crown lift to 5.1m Over road, Reduce end weight by 2.0m	40+	B1	5160	< 12 months		
T 08-0037	37	Plane	*Platanus X hispanica.*	13	350	5	5	5	2	E-2	2	EM	2 stems from 2.0m	Fair	None	Road	Crown lift to 5.1m Over road	40+	B1	4200	Routine		
T 08-0038	38	Plane	*Platanus X hispanica.*	14	420	6	5	6	4	S-2	1	EM	2 stems from 2.0m	Fair	None	Road	Crown lift to 5.1m Over road	40+	B1	5040	Routine		
T 08-0039	39	Norway maple	*Acer platanoides*	4	150	3	3	3	3	S-2	2	SM	Multi stem from 2.0m	Fair	None	None	No action is required	40+	B1	1800	N/a		
T 08-0040	40	Plane	*Platanus X hispanica.*	14	430	7	5	7	5	N-2	2	EM	2 stems from 2.0m, Spreading crown	Fair	Excessive end weight	Road	Crown lift to 5.1m Over road, Reduce end weight by 2.0m	40+	B1	5160	< 12 months		
T 08-0041	41	Norway maple	*Acer platanoides*	4	120	2	2	2	2	S-2	2	SM	Multi stem from 2.0m	Fair	None	None	No action is required	40+	B1	1440	N/a		
T 08-0042	42	Plane	*Platanus X hispanica.*	13	370	6	5	5	2	S-3	2	EM	3 stems from 3.0m	Fair	None	Road	Crown lift to 5.1m Over road, Reduce end weight by 2.0m	40+	B1	4440	< 12 months		

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						N	E	S	W				Crown Form	Condition	Defect	Obstacle	Action						
T 08-0043	43	Plane	*Platanus X hispanica.*	13	430	7	4	6	4	W-3	2	EM	3 stems from 3.0m	Fair	Excessive end weight	Lamp, Road	Crown lift to 5.1m Over road, Reduce end weight by 2.0m, Clear lamp	40+	B1	5160	< 12 months		
T 08-0044	44	Plane	*Platanus X hispanica.*	14	450	7	5	5	6	W-3	1	EM	2 stems from 3.0m	Fair	None	Road	Crown lift to 5.1m Over road	40+	B1	5400	Routine		
T 08-0045	45	Plane	*Platanus X hispanica.*	10	510	5	5	5	5	S-1	1	SM	Multi stem from 1.0m	Fair	Forming cavity, Basal damage	Road	Crown lift to 5.1m Over road	20+	B1	6120	Routine		
T 08-0046	46	Lime	*Tilia sp.*	11	240	3	3	3	2	N-2	1	SM	Multi stem from 2.0m	Fair	None	Road	Crown lift to 5.1m Over road	40+	B1	2880	Routine		
T 08-0047P#	-	Flowering cherry	*Prunus Sp*	9	480#	5	6	4	2	E-2	1	M	Multi stem from 2.0m	Fair	None	Path	Crown lift to 2.4m Over path	20+	B1	5760	Routine		
T 08-0048P#	-	Flowering cherry	*Prunus Sp*	9	623#	5	3	4	5	E-0	2	M	3 stems from the ground	Fair	None	Path	Crown lift to 2.4m Over path	20+	B1	7474	Routine		
T 08-0049P#	-	Whitebeam	*Sorbus aria*	8	390#	5	4	5	5	N-1	2	OM	Multi stem from 1.0m	Poor	Excessive deadwood	Path	Crown lift to 2.4m Over path, Monitor for death	10+	C1	4680	Routine		
T 08-0050P#	-	Flowering cherry	*Prunus Sp*	7	340#	5	5	5	5	W-2	2	M	Multi stem from 2.0m, Spreading crown	Fair	None	None	No recommendations are given	20+	B1	4080	N/a		
T 08-0051P#	-	Flowering cherry	*Prunus Sp*	9	460#	5	5	5	5	S-1	2	M	2 stems from 1.0m, Spreading crown	Fair	Narrow fork	Path	Crown lift to 2.4m Over path	10+	B1	5520	Routine		
G 08-0052P#	-	Goat willow	*Salix caprea*	5	140#	3	3	3	3	-	1	EM	Multi stem	Fair	None	Path	Crown lift to 2.4m Over path	10+	B1	1680	Routine		
G 08-0053P#	-	Flowering cherry, Hawthorn, Rowan, Australian laurel	*Prunus Sp, Crataegus sp., Sorbus aucuparia, Gresilenia littoralis*	7	350#	4	4	4	4	-	2	M	Multi stem	Fair	None	Path	Crown lift to 2.4m Over path	20+	B1	4200	Routine		

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						N	E	S	W				Crown Form	Condition	Defect	Obstacle	Action						
T 08-0054P#	-	Flowering cherry	*Prunus Sp*	8	623#	4	5	5	5	E-0	1	M	3 stems from the ground	Fair	Forming cavity	Path	Crown lift to 5.1m Over road	10+	B1	7474	Routine		
T 08-0055P#	-	Flowering cherry	*Prunus Sp*	8	623#	5	4	3	4	N-1	3	OM	2 stems from 1.0m	Poor	Excessive deadwood, Thinning crown	None	Fell	<10	C1	7474	< 3 months		
T 08-0056P#	-	Whitebeam	*Sorbus aria*	6	380#	3	4	2	3	E-1	2	OM	Multi stem from 1.0m	Poor	Thinning crown, Recent crown failure	None	No recommendations are given	10+	C1	4560	N/a		
S 08-0057P#	-	Flowering cherry, Elder, Privet	*Prunus Sp, Sambucus nigra, Ligustrum Sp*	5	330#	3	3	3	3	-	0	M	Multi stem	Fair	None	None	No recommendations are given	20+	B1	3960	N/a		
T 08-0058P#	-	Purple plum	*Prunus cerasifera 'Pissardii'*	7	280#	2	4	3	2	E-1	2	M	3 stems from 1.0m	Fair	None	Path	Crown lift to 2.4m Over path	10+	B1	3360	Routine		
T 08-0059P#	-	Flowering cherry	*Prunus Sp*	11	420#	4	4	4	4	E-2	2	M	2 stems from 2.0m	Fair	Excessive ivy	None	No recommendations are given	20+	B1	5040	N/a		
T 08-0060P#	-	Flowering cherry	*Prunus Sp*	7	320#	4	3	3	2	E-2	2	OM	Single main stem with heavy side branches	Poor	Excessive deadwood	None	Crown clean, Monitor for death	10+	C1	3840	Routine		
T 08-0061P#	-	Birch	*Betula sp.*	9	360#	3	4	4	5	W-1	2	M	2 stems from 1.0m	Fair	None	None	No recommendations are given	10+	B1	4320	N/a		
T 08-0062P#	-	Monterey cypress	*Cupressus macrocarpa*	19	1080#	6	7	5	6	W-2	4	M	Single main stem with heavy side branches	Fair	Excessive deadwood	None	No recommendations are given	20+	B1	12960	N/a		
T 08-0063P#	-	Purple plum	*Prunus cerasifera 'Pissardii'*	6	300#	3	2	3	3	S-1	2	M	Single main stem with heavy side branches	Fair	Forming cavity	None	No action is required	10+	B1	3600	N/a		
T 08-0064P#	-	Plum	*Prunus domestica*	6	440#	4	4	4	5	S-1	2	M	Multi stem from 1.0m	Fair	None	Path	Crown lift to 2.4m Over path	10+	B1	5280	Routine		

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						N	E	S	W				Crown Form	Condition	Defect	Obstacle	Action						
T 08-0065P#	-	Birch	*Betula sp.*	14	570#	8	7	7	7	E-2	2	M	Multi stem from 2.0m, Spreading crown	Fair	None	Road, Buildings	Crown lift to 5.1m Over road, Clear back from building	20+	B1	6840	Routine		
T 08-0066P#	-	Birch	*Betula sp.*	16	440#	5	6	6	6	W-2	2	M	3 stems from 2.0m, Spreading crown	Fair	None	Road	Crown lift to 5.1m Over road	20+	B1	5280	Routine		
T 08-0067P#	-	Laburnum	*Laburnum sp.*	7	420#	3	3	2	1	N-1	2	M	2 stems from 1.0m, Leaning	Fair	Root plate failure	None	No action is required	10+	B1	5040	N/a		
H 08-0068	68	Sycamore, Australian laurel	*Acer pseudoplatanus , Gresilenia littoralis*	7	200	2	2	2	2	-	0	M	Multi stem	Fair	None	None	Maintain as hedge	20+	B1	2400	Routine		
T 08-0069	69	Lime	*Tilia sp.*	8	280	5	5	5	4	S-2	2	SM	Single main stem with heavy side branches	Fair	None	Path	Crown lift to 5.1m Over road	40+	B1	3360	Routine		
T 08-0070	70	Plane	*Platanus X hispanica.*	11	300	5	6	4	4	W-2	1	SM	Multi stem from 4.0m, Spreading crown	Fair	Recent crown failure, Excessive end weight	Road	Crown lift to 5.1m Over road, Reduce end weight by 2.0m	40+	B1	3600	< 12 months		
T 08-0071	71	Norway maple	*Acer platanoides*	4	130	1	2	2	1	N-2	2	Y	Single stem	Fair	None	Road	Crown lift to 5.1m Over road	40+	B1	1560	Routine		
T 08-0072	72	Plane	*Platanus X hispanica.*	12	290	6	5	5	5	W-2	1	SM	Multi stem from 3.0m, Spreading crown	Fair	Excessive end weight	Road	Crown lift to 5.1m Over road, Reduce end weight by 2.0m	40+	B1	3480	< 12 months		
G 08-0073	73	Hornbeam	*Carpinus betulus*	5	130	1	1	1	1	N-1	1	Y	Single stem, Upright crown	Fair	None	None	No action is required	40+	B1	1560	N/a		
T 08-0074	74	Norway maple	*Acer platanoides*	7	160	3	3	2	1	S-2	2	Y	Multi stem from 2.0m, Upright crown	Fair	None	None	No action is required	40+	B1	1920	N/a		
T 08-0075	75	Norway maple	*Acer platanoides*	9	170	4	2	2	2	E-2	3	Y	Multi stem from 2.0m	Fair	None	Road	Crown lift to 5.1m Over road	40+	B1	2040	Routine		

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						N	E	S	W				Crown Form	Condition	Defect	Obstacle	Action						
T 08-0076	76	Swedish whitebeam	*Sorbus intermedia*	8	280	3	3	3	2	W-2	2	M	Multi stem from 2.0m, Upright crown	Fair	None	Road	Crown lift to 5.1m Over road	20+	B1	3360	Routine		
G 08-0077	77	Norway maple	*Acer platanoides*	6	170	3	3	3	3	-	2	Y	Multi stem from 3.0m, Upright crown	Fair	None	Road	Crown lift to 5.1m Over road	40+	B1	2040	Routine		
T 08-0078	78	Plane	*Platanus X hispanica.*	9	320	5	5	4	3	S-2	1	SM	Multi stem from 3.0m, Spreading crown	Fair	None	Road	Crown lift to 5.1m Over road	40+	B1	3840	Routine		
T 08-0079	79	Plane	*Platanus X hispanica.*	9	250	5	4	4	4	E-2	2	SM	2 stems from 3.0m, Spreading crown	Fair	None	Road	Crown lift to 5.1m Over road	40+	B1	3000	Routine		
T 08-0080	80	Plane	*Platanus X hispanica.*	8	250	5	5	3	2	E-3	2	SM	3 stems from 3.0m, Spreading crown	Fair	Thinning crown	Road	Crown clean, Crown lift to 5.1m Over road	40+	B1	3000	Routine		
T 08-0081	81	Norway maple	*Acer platanoides*	5	90	1	2	1	1	S-2	2	Y	Single stem	Fair	None	None	No action is required	40+	B1	1080	N/a		
T 08-0082	82	Norway maple	*Acer platanoides*	10	190	3	3	3	1	E-2	2	SM	2 stems from 2.0m	Fair	None	Road	Crown lift to 5.1m Over road	40+	B1	2280	Routine		
T 08-0083	83	Plane	*Platanus X hispanica.*	12	230	6	5	4	2	E-2	2	SM	2 stems from 3.0m, Spreading crown	Fair	Excessive end weight	Road	Crown lift to 5.1m Over road, Reduce end weight by 2.0m	40+	B1	2760	< 12 months		
T 08-0084	84	Norway maple	*Acer platanoides*	7	100	2	1	2	1	E-2	2	Y	2 stems from 2.0m	Fair	None	None	No action is required	40+	B1	1200	N/a		
T 08-0085	85	Plane	*Platanus X hispanica.*	10	290	6	5	5	4	W-3	1	SM	Single main stem with heavy side branches	Fair	None	Road	Crown lift to 5.1m Over road	40+	B1	3480	Routine		
T 08-0086	86	Plane	*Platanus X hispanica.*	8	170	4	4	2	2	E-2	2	Y	Single main stem with heavy side branches	Fair	Thinning crown	Road	Crown clean, Crown lift to 5.1m Over road	40+	B1	2040	Routine		

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						N	E	S	W				Crown Form	Condition	Defect	Obstacle	Action						
T 08-0087	87	Pear	*Pyrus sp.*	6	160	2	2	2	1	E-2	1	SM	Single main stem with heavy side branches	Fair	None	None	No action is required	40+	B1	1920	N/a		
T 08-0088	88	Plane	*Platanus X hispanica.*	12	170	4	5	4	3	E-2	2	SM	Single main stem with heavy side branches	Fair	Thinning crown	Road	Crown clean, Crown lift to 5.1m Over road	40+	B1	2040	Routine		
T 08-0089	89	Plane	*Platanus X hispanica.*	10	220	5	5	2	3	N-2	2	SM	Single main stem with heavy side branches	Fair	Thinning crown	Road	Crown clean, Crown lift to 5.1m Over road	40+	B1	2640	Routine	Fell due to road widening	1
T 08-0090	90	Plane	*Platanus X hispanica.*	9	170	5	4	3	2	W-2	3	Y	Single main stem with heavy side branches	Fair	None	Road	Crown lift to 5.1m Over road	40+	B1	2040	Routine	Fell due to road widening	1
T 08-0091	91	Plane	*Platanus X hispanica.*	11	230	5	5	4	3	E-2	1	EM	Single main stem with heavy side branches	Fair	Thinning crown, Excessive end weight	Road	Crown clean, Crown lift to 5.1m Over road, Reduce end weight by 2.0m	40+	B1	2760	< 12 months	Fell due to road widening	1
T 08-0092	92	Plane	*Platanus X hispanica.*	11	230	5	5	5	4	W-2	2	SM	3 stems from 2.0m, Spreading crown	Fair	Excessive end weight	Road	Crown lift to 5.1m Over road, Reduce end weight by 2.0m	40+	B1	2760	< 12 months	Fell due to road widening	1
T 08-0093	93	Plane	*Platanus X hispanica.*	13	330	5	7	6	5	W-2	1	EM	2 stems from 2.0m	Poor	Narrow fork, Part failed fork, Excessive end weight	Road	Crown clean, Crown lift to 5.1m Over road, Reduce end weight by 2.0m, Prune to establish single dominant leader	20+	C1	3960	< 12 months	Fell due to road widening	1
T 08-0094	94	Norway maple	*Acer platanoides*	9	200	2	2	3	2	S-2	3	SM	Single main stem with heavy side branches	Fair	None	None	Crown clean	40+	B1	2400	Routine	Fell due to road widening	1
T 08-0095	95	Plane	*Platanus X hispanica.*	9	240	5	5	4	3	E-3	2	SM	Multi stem from 3.0m, Leaning	Fair	None	Road	Crown lift to 5.1m Over road	40+	B1	2880	Routine	Fell due to road widening	1
T 08-0096	96	Norway maple	*Acer platanoides*	10	270	3	5	4	3	E-2	3	SM	Multi stem from 2.0m	Fair	None	Road	Crown lift to 5.1m Over road	40+	B1	3240	Routine	Fell due to road widening	1

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						N	E	S	W				Crown Form	Condition	Defect	Obstacle	Action						
T 08-0097	97	Norway maple	*Acer platanoides*	10	240	4	4	3	2	N-2	2	SM	2 stems from 2.0m	Fair	None	Road	Crown lift to 5.1m Over road	40+	B1	2880	Routine	Fell due to road widening	1
T 08-0098	98	Lime	*Tilia sp.*	7	190	3	2	3	2	N-2	2	Y	Single stem	Fair	None	Road	Crown lift to 5.1m Over road	40+	B1	2280	Routine	Fell due to road widening	1
T 08-0099	99	Lime	*Tilia sp.*	8	170	3	3	3	1	E-2	1	Y	Single main stem with heavy side branches	Fair	None	Road	Crown lift to 5.1m Over road	40+	B1	2040	Routine	Fell due to road widening	1
T 08-00100	100	Lime	*Tilia sp.*	6	160	2	2	2	2	E-2	2	Y	Single stem	Fair	None	None	No action is required	0	B1	1920	N/a	Fell due to road widening	1
T 08-00101	101	Birch	*Betula sp.*	10	170	3	3	3	3	S-2	1	EM	Single main stem with heavy side branches	Fair	None	Path	Crown lift to 2.4m Over path	20+	B1	2040	Routine		
T 08-00102	102	Birch	*Betula sp.*	15	270	3	3	3	3	W-2	0	M	Single stem	Fair	None	Path	Crown lift to 2.4m Over path	20+	B1	3240	Routine		
T 08-00103	103	Birch	*Betula sp.*	13	220	3	2	2	2	N-2	0	M	Single stem	Fair	None	Path	Crown lift to 2.4m Over path	20+	B1	2640	Routine		
T 08-00104	104	Hornbeam	*Carpinus betulus*	15	490	5	5	4	5	W-2	2	M	Multi stem from 3.0m, Upright crown	Fair	None	Road	Crown lift to 5.1m Over road	20+	B1	5880	Routine		
T 08-00105P#	-	Norway maple	*Acer platanoides*	12	350#	4	4	5	5	E-2	2	EM	Multi stem from 2.0m	Poor	Excessive deadwood, Thinning crown	None	Monitor for death	10+	C1	4200	Routine		
T 08-00106P#	-	Norway maple	*Acer platanoides*	10	330#	5	6	6	5	N-2	2	EM	Multi stem from 2.0m, Spreading crown	Fair	None	None	No recommendations are given	20+	B1	3960	N/a		
T 08-00107P#	-	Norway maple	*Acer platanoides*	13	340#	3	5	5	4	E-2	3	EM	Multi stem from 2.0m	Fair	None	None	No recommendations are given	20+	B1	4080	N/a		

Tree No.	Tag No.	Species	Botanical Name	Height (m)	DBH (mm)	Canopy Spread				Lower branch direction and height (m)	Crown Clearance (m)	Age	General Observations					ULE	Category	RPA base radius (mm)	Priority	Works to facilitate development	No of trees in groups (where known)
						N	E	S	W				Crown Form	Condition	Defect	Obstacle	Action						
T 08-00108	108	Hornbeam	*Carpinus betulus*	15	560	5	5	5	5	W-2	2	M	Multi stem from 2.0m, Upright crown	Fair	None	Lamp, Path, Road	Crown lift to 2.4m Over path, Crown lift to 5.1m Over road, Clear lamp	20+	B1	6720	Routine		
T 08-00109	109	Hornbeam	*Carpinus betulus*	15	420	5	4	5	4	S-2	2	M	Multi stem from 3.0m, Upright crown	Fair	None	Road	Crown lift to 5.1m Over road	20+	B1	5040	Routine		
T 08-00110P#	-	Norway maple	*Acer platanoides*	12	420#	6	6	6	6	N-2	2	EM	Multi stem from 2.0m, Spreading crown	Fair	Thinning crown	None	No recommendations are given	10+	B1	5040	N/a		
H 08-00111P#	-	Leyland cypress, Australian laurel	*Cupressocyparis leylandii, Gresilenia littoralis*	4	150#	1	1	1	1	-	0	M	0	Fair	None	None	Maintain as hedge	20+	B1	1800	Routine		
H 08-00112P#	-	Beech, Australian laurel	*Fagus sylvatica, Gresilenia littoralis*	4	150#	2	2	2	2	-	0	M	0	Good	None	None	Maintain as hedge	40+	A1	1800	Routine		
T 08-00113P#	-	Birch	*Betula sp.*	5	230#	3	3	3	2	N-1	1	SM	3 stems from 1.0m	Fair	None	None	No action is required	20+	B1	2760	N/a		
T 08-00114	114	Hornbeam	*Carpinus betulus*	15	460	5	4	5	4	S-2	2	M	Multi stem from 2.0m	Fair	None	Path, Road	Crown lift to 2.4m Over path, Crown lift to 5.1m Over road	20+	B1	5520	Routine		
T 08-00115	115	Hornbeam	*Carpinus betulus*	14	360	4	4	4	4	W-2	1	M	Multi stem from 3.0m	Fair	None	Path, Road	Crown lift to 2.4m Over path, Crown lift to 5.1m Over road	20+	B1	4320	Routine		
T 08-00116	116	Hornbeam	*Carpinus betulus*	15	580	6	6	5	6	S-3	1	M	Multi stem from 3.0m	Fair	None	Path, Road	Crown lift to 2.4m Over path, Crown lift to 5.1m Over road	20+	B1	6960	Routine		
T 08-00117	117	Hornbeam	*Carpinus betulus*	15	500	5	4	4	5	E-3	2	M	Multi stem from 3.0m	Fair	None	Path, Road	Crown lift to 2.4m Over path, Crown lift to 5.1m Over road	20+	B1	6000	Routine		
T 08-00118	118	Hornbeam	*Carpinus betulus*	14	570	5	5	6	6	W-2	2	M	Multi stem from 3.0m	Fair	None	Path, Road	Crown lift to 2.4m Over path, Crown lift to 5.1m Over road	20+	B1	6840	Routine		

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						N	E	S	W				Crown Form	Condition	Defect	Obstacle	Action						
T 08-00119	119	Hornbeam	*Carpinus betulus*	14	380	4	5	5	4	S-2	2	M	Multi stem from 3.0m	Fair	None	Road	Crown lift to 5.1m Over road	20+	B1	4560	Routine		
G 08-00120	120	Oak	*Quercus sp.*	9	150	1	1	1	1	-	2	Y	Single main stem with heavy side branches, Upright crown	Fair	None	None	No action is required	40+	B1	1800	N/a		
S 08-00121P#	-	Escallonia, Firethorn	*Escallonia cv. Pyracantha sp.*	5	150#	4	4	4	4	-	0	M	Multi stem	Fair	Thinning crown	None	No recommendations are given	10+	B1	1800	N/a	Fell for hard surfacing	1
T 08-00122P#	-	Whitebeam	*Sorbus aria*	12	310#	3	4	5	3	E-2	1	M	Multi stem from 4.0m, Leaning	Fair	None	None	No recommendations are given	20+	B1	3720	N/a	Fell for hard surfacing	1
T 08-00123P#	-	Birch	*Betula sp.*	13	170#	2	2	3	3	N-6	2	M	Single stem	Poor	Forming cavity	None	No recommendations are given	10+	C1	2040	N/a	Fell for hard surfacing	1
T 08-00124P#	-	Birch	*Betula sp.*	13	350#	5	5	5	5	N-3	3	M	Single main stem with heavy side branches	Fair	None	None	No recommendations are given	10+	B1	4200	N/a		
T 08-00125P#	-	Yew	*Taxus baccata*	4	224#	1	1	1	1	W-1	0	SM	Multi stem, Upright crown	Good	None	None	No action is required	40+	A1	2688	N/a		
H 08-00126P#	-	Euonymus	*Euonymus Sp.*	3	60#	1	1	1	1	-	0	M	Multi stem	Fair	None	None	Maintain as hedge	20+	B1	720	Routine	Fell in part as shown on the Tree Clearance Plan for new wall and surfacing	
T 08-00127P	-	Yew	*Taxus baccata*	6	224#	1	1	1	1	W-1	0	SM	Multi stem, Upright crown	Fair	None	None	No action is required	40+	B1	2688	N/a		
T 08-00128P#	-	Lawson cypress	*Chamaecyparis lawsoniana*	6	260#	2	2	2	2	E-2	2	EM	Single stem	Fair	None	None	No action is required	10+	B1	3120	N/a		
T 08-00129P#	-	Whitebeam	*Sorbus aria*	11	340#	6	5	5	3	E-1	1	M	Multi stem from 2.0m, Spreading crown	Fair	None	None	No recommendations are given	20+	B1	4080	N/a	Fell for new bus stop	

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						N	E	S	W				Crown Form	Condition	Defect	Obstacle	Action						
T 08-00130P #	-	Whitebeam	*Sorbus aria*	10	340#	5	5	5	3	S-2	2	M	Multi stem from 2.0m, Spreading crown	Poor	Thinning crown	None	Monitor for death	10+	C1	4080	Routine	Fell for new bus stop	
T 08-00131P #	-	Whitebeam	*Sorbus aria*	11	420#	5	6	5	4	E-1	2	M	Multi stem from 2.0m, Spreading crown	Fair	None	None	No recommendations are given	20+	B1	5040	N/a	Fell for new bus stop	
T 08-00132	132	Sycamore	*Acer pseudoplatanus*	12	370	4	5	5	5	E-2	2	EM	Multi stem from 2.0m	Fair	None	None	No action is required	40+	B1	4440	N/a		
T 08-00133	133	Sycamore	*Acer pseudoplatanus*	13	330	5	4	4	5	W-2	2	EM	Single stem	Fair	Excessive ivy	None	Remove ivy	40+	B1	3960	Routine	Fell for new surfacing	
T 08-00134	134	Sycamore	*Acer pseudoplatanus*	11	270	4	4	4	4	W-2	3	EM	Single main stem with heavy side branches	Fair	Thinning crown, Excessive ivy	None	Remove ivy	40+	B1	3240	Routine	Fell for new surfacing	
T 08-00135	135	Sycamore	*Acer pseudoplatanus*	12	260	4	5	5	5	S-2	2	EM	Single main stem with heavy side branches	Fair	None	None	No action is required	40+	B1	3120	N/a	Fell for new surfacing	
T 08-00136	136	Sycamore	*Acer pseudoplatanus*	8	180	4	4	4	4	W-2	2	SM	Single main stem with heavy side branches	Fair	None	None	No action is required	40+	B1	2160	N/a		
T 08-00137	137	Sycamore	*Acer pseudoplatanus*	10	200	2	4	2	3	E-3	3	SM	Single main stem with heavy side branches	Fair	Thinning crown	None	Crown clean, Remove ivy	40+	B1	2400	Routine		
T 08-00138	138	Lombardy poplar	*Populus nigra 'Italica*	22	920	3	7	5	2	E-4	3	M	Single main stem with heavy side branches, Upright crown	Fair	Excessive end weight	None	Crown clean	20+	B1	11040	Routine		
T 08-00139	139	Lombardy poplar	*Populus nigra 'Italica*	18	620	3	5	5	3	W-1	1	-	Single main stem with heavy side branches, Upright crown	Poor	Basal rot	None	Crown clean, Reduce end weight by 3.0m	10+	C1	7440	< 12 months		
T 08-00140	140	Lombardy poplar	*Populus nigra 'Italica*	11	470	2	2	2	2	S-1	1	SM	Multi stem from 1.0m, Upright crown	Poor	Hollow, Basal rot, Part failed fork	None	Fell	<10	C1	5640	< 3 months		

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						N	E	S	W				Crown Form	Condition	Defect	Obstacle	Action						
T 08-00141	141	Lombardy poplar	*Populus nigra 'Italica*	18	470	2	5	5	3	S-3	2	M	Single main stem with heavy side branches	Fair	Excessive end weight	None	Crown clean, Reduce end weight by 3.0m	20+	B1	5640	< 12 months		
T 08-00142	142	Lombardy poplar	*Populus nigra 'Italica*	13	260	5	4	5	4	N-1	2	SM	3 stems from 1.0m	Fair	None	None	No action is required	20+	B1	3120	N/a		
T 08-00143	143	Lombardy poplar	*Populus nigra 'Italica*	21	700	2	6	5	2	S-3	1	M	Upright crown, Single stem to 8.0m	Fair	Excessive end weight	None	Crown clean, Reduce end weight by 3.0m	20+	B1	8400	< 12 months		
T 08-00144	144	Lombardy poplar	*Populus nigra 'Italica*	20	580	4	4	6	3	S-3	1	M	Single main stem with heavy side branches, Upright crown	Fair	Excessive end weight	None	Reduce end weight by 2.0m	20+	B1	6960	< 12 months		
T 08-00145	145	Lombardy poplar	*Populus nigra 'Italica*	19	520	3	4	5	3	N-2	2	OM	Upright crown, Single stem to 6.0m	Poor	Hollow	None	Fell	<10	C1	6240	< 3 months		
T 08-00146P	-	White poplar	*Populus alba*	18	410#	2	4	3	2	E-2	2	M	Single main stem with heavy side branches	Fair	None	None	No action is required	20+	B1	4920	N/a		
T 08-00147	147	Lombardy poplar	*Populus nigra 'Italica*	20	710	3	5	5	4	N-1	1	M	Upright crown, Single stem to 10.0 m	Fair	Excessive end weight	None	Reduce end weight by 3.0m	20+	B1	8520	< 12 months		
T 08-00148	148	Lombardy poplar	*Populus nigra 'Italica*	18	770	3	4	5	4	W-1	1	OM	Upright crown, Single stem to 6.0m	Poor	Hollow	None	Fell	<10	C1	9240	< 3 months		
T 08-00149P#	-	Holm oak	*Quercus ilex*	10	420#	5	4	5	5	E-1	1	EM	Single main stem with heavy side branches	Fair	Part failed fork	None	No recommendations are given	40+	B1	5040	N/a		
G 08-00150P#	-	Lime, Oak	*Tilia spp., Quercus sp.*	7	150#	2	2	2	2	-	2	Y	Single main stem with heavy side branches	Fair	None	Road	Crown lift to 5.1m Over road	40+	B1	1800	Routine	Fell in part as shown on the Tree Protection Plan for hard surfacing	
G 08-00151	151	Lime	*Tilia sp.*	10	260	3	3	5	3	-	2	SM	Multi stem from 3.0m, Spreading crown	Fair	None	Path, Road	Crown lift to 2.4m Over path, Crown lift to 5.1m Over road	40+	B1	3120	Routine		

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						N	E	S	W				Crown Form	Condition	Defect	Obstacle	Action						
T 08-00152	152	Lime	*Tilia sp.*	8	300	3	3	4	2	S-1	3	SM	2 stems from 1.0m	Fair	Narrow fork	None	Prune to establish single dominant leader	40+	B1	3600	Routine		
G 08-00153	153	Lime	*Tilia sp.*	10	300	4	4	4	4	-	2	SM	Multi stem from 3.0m	Fair	None	Road	Crown lift to 5.1m Over road	40+	B1	3600	Routine		
G 08-00154	154	Lime	*Tilia sp.*	8	260	3	3	3	3	S-2	3	SM	Multi stem from 3.0m	Fair	None	Road	Crown lift to 5.1m Over road	40+	B1	3120	Routine		
T 08-00155	155	Lime	*Tilia sp.*	9	260	4	4	2	3	N-2	2	SM	Single main stem with heavy side branches	Fair	None	Road	Crown lift to 5.1m Over road	40+	B1	3120	Routine		
G 08-00156	156	Lime	*Tilia sp.*	8	250	3	3	3	3	-	2	SM	Multi stem from 2.0m	Fair	None	Road	Crown lift to 5.1m Over road	40+	B1	3000	Routine		
G 08-00157	157	Lime	*Tilia sp.*	11	250	3	3	3	3	-	1	SM	Single main stem with heavy side branches	Good	None	Path, Wall or fence	Crown lift to 2.4m Over path, Clear back from wall or fence	40+	A1	3000	Routine	Fell in part as per TPP for new hard surfacing	1
G 08-00158	158	English elm	*Ulmus procera*	0	350	0	0	0	0	-	0	-	0	Dead	Dead	0	Fell	<10	U	4200	< 3 months	Fell as inappropriate	1
G 08-00159	159	Lime	*Tilia sp.*	6	230	3	3	3	3	-	1	Y	Multi stem from 2.0m	Fair	None	None	No action is required	40+	B1	2760	N/a	Fell in part for new hard surfacing	1
T 08-00160	160	Lime	*Tilia sp.*	6	190	3	3	3	2	N-2	2	Y	Single main stem with heavy side branches	Fair	None	None	No action is required	40+	B1	2280	N/a		
T 08-00161	161	Lime	*Tilia sp.*	5	160	3	3	3	2	W-2	1	Y	Multi stem from 3.0m	Poor	Thinning crown	None	Monitor for death	10+	C1	1920	Routine		
G 08-00162	162	Lime	*Tilia sp.*	6	200	3	3	3	3	-	1	Y	Multi stem from 2.0m	Fair	None	None	No action is required	40+	B1	2400	N/a		

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						N	E	S	W				Crown Form	Condition	Defect	Obstacle	Action						
G 08-00163	163	Lime	*Tilia sp.*	8	250	4	4	4	4	-	1	SM	Multi stem from 2.0m, Spreading crown	Good	None	Path	Crown lift to 2.4m Over path	40+	A1	3000	Routine	Fell in part as per TPP for new hard surface	2
G 08-00164	164	Lime	*Tilia sp.*	6	170	2	2	2	2	-	2	Y	Multi stem from 2.0m	Fair	None	Road	Crown lift to 5.1m Over road	40+	B1	2040	Routine		
T 08-00165P	-	Birch	*Betula sp.*	12	340#	4	4	5	5	S-1	1	M	Multi stem from 1.0m, Spreading crown	Poor	Recent crown failure	None	Crown clean, Monitor for death	10+	C1	4080	Routine	Fell for footway ramp	1
S 08-00166	166	Buddleia	*Buddleia davidii*	3	50	4	3	3	1	-	0	M	Multi stem, Spreading crown	Fair	None	Path	Crown lift to 2.4m Over path	20+	B1	600	Routine	Fell for new hard surfacing	1
G 08-00167	167	Himalayan birch	*Betula utilis*	6	300	3	2	2	2	-	1	SM	Multi stem from 1.0m	Fair	None	Road	Crown lift to 5.1m Over road	40+	B1	3600	Routine		
T 08-00168	168	Ash	*Fraxinus excelsior*	6	433	3	4	1	3	N-0	1	Y	3 stems from the ground, One sided crown	Fair	Thinning crown	None	Monitor for death	10+	B1	5190	Routine		
H 08-00169	169	Beech	*Fagus sylvatica*	7	160	2	2	2	2	-	0	SM	Single stem	Fair	None	None	Maintain as hedge	40+	B1	1920	Routine		
H 08-00170	170	Beech, Sycamore	*Fagus sylvatica, Acer pseudoplatanus*	3	120	1	1	1	1	-	0	SM	Multi stem	Fair	None	None	Maintain as hedge	40+	B1	1440	Routine	Fell for new hard surfacing and SuDs	Unknown
S 08-00171	171	Buddleia	*Buddleia davidii*	3	50	2	2	1	2	-	0	M	Multi stem	Fair	None	Path	Crown lift to 2.4m Over path	20+	B1	600	Routine		
G 08-00172P#	-	Rowan	*Sorbus aucuparia*	5	170#	2	2	2	2	-1	2	M	Multi stem from 1.0m, Spreading crown	Fair	Thinning crown	Road	Crown clean, Crown lift to 5.1m Over road, Monitor for death	10+	B1	2040	Routine	No dig surfacing	
T 08-00173P#	-	Norway maple	*Acer platanoides*	6	239#	3	3	2	3	N-0	2	Y	2 stems from The ground	Fair	None	Path	Crown lift to 2.4m Over path	40+	B1	2876	Routine	No dig surfacing	

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						N	E	S	W				Crown Form	Condition	Defect	Obstacle	Action						
G 08-00174P#	-	Purple plum	*Prunus cerasifera 'Pissardii'*	4	150#	2	2	2	2	-	2	SM	Multi stem	Fair	None	None	No action is required	20+	B1	1800	N/a	No dig surfacing	
G 08-00175P#	-	Rowan	*Sorbus aucuparia*	4	130#	2	2	2	2	-	1	EM	Multi stem from 1.0m	Fair	Thinning crown	None	Monitor for death	20+	B1	1560	Routine	No dig surfacing	
G 08-00176P#	-	Purple plum	*Prunus cerasifera 'Pissardii'*	4	150#	2	2	2	2	-	2	SM	Multi stem from 1.0m	Fair	None	None	No action is required	20+	B1	1800	N/a	No dig surfacing	
T 08-00177P#	-	Rowan	*Sorbus aucuparia*	0	110#	0	0	0	0	-	0	-	0	Dead	Dead	0	Fell	<10	U	1320	< 3 months	Fell inappropriate for retention	1
G 08-00178P#	-	Rowan	*Sorbus aucuparia*	5	150#	3	2	2	2	-	2	EM	Multi stem from 1.0m	Fair	None	None	No action is required	20+	B1	1800	N/a	No dig surfacing	
G 08-00179P#	-	Purple plum	*Prunus cerasifera 'Pissardii'*	5	150#	2	2	2	2	-	2	SM	Multi stem from 1.0m	Fair	None	None	No action is required	20+	B1	1800	N/a	No dig surfacing	
G 08-00180P#	-	Rowan	*Sorbus aucuparia*	5	150#	2	2	2	2	-1	1	EM	Multi stem from 1.0m	Fair	None	None	No action is required	20+	B1	1800	N/a	No dig surfacing	
T 08-00181P#	-	Purple plum	*Prunus cerasifera 'Pissardii'*	4	90#	1	2	1	1	W-1	2	SM	3 stems from 1.0m	Fair	None	None	No action is required	20+	B1	1080	N/a		
T 08-00182P#	-	Purple plum	*Prunus cerasifera 'Pissardii'*	4	100#	2	3	2	1	E-0	2	SM	2 stems from The ground	Fair	None	None	No action is required	20+	B1	1184	N/a		
T 08-00183P#	-	Purple plum	*Prunus cerasifera 'Pissardii'*	4	141#	2	2	2	2	E-0	2	SM	2 stems from The ground	Fair	None	None	No action is required	20+	B1	1692	N/a	No dig surfacing	
T 08-00184P#	-	Plum	*Prunus domestica*	4	110#	2	1	2	2	N-1	2	SM	2 stems from 1.0m	Fair	None	None	No action is required	20+	B1	1320	N/a		

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						N	E	S	W				Crown Form	Condition	Defect	Obstacle	Action						
T 08-00185P#	-	Purple plum	*Prunus cerasifera 'Pissardii'*	5	200#	3	2	2	3	S-0	2	EM	3 stems from the ground	Fair	None	None	No action is required	20+	B1	2400	N/a	No dig surfacing	
T 08-00186P#	-	Norway maple	*Acer platanoides*	9	290#	4	3	4	4	N-2	2	SM	Single main stem with heavy side branches	Fair	None	Path	Crown lift to 2.4m Over path	40+	B1	3480	Routine		
T 08-00187#P	-	Norway maple	*Acer platanoides*	7	140#	2	2	2	2	W-2	2	Y	Single stem	Fair	None	None	No action is required	40+	B1	1680	N/a		
H 08-00188	188	Beech	*Fagus sylvatica*	3	140	1	1	1	1	-	0	EM	Multi stem	Fair	None	Path	Crown lift to 2.4m Over path, Maintain as hedge	40+	B1	1680	Routine	Fell for new hard surfacing	unknown
H 08-00189	189	Beech	*Fagus sylvatica*	3	120	1	1	1	1	-	0	EM	Multi stem	Fair	None	Path	Crown lift to 2.4m Over path, Maintain as hedge	40+	B1	1440	Routine	Fell in part as per TPP for new hard surfacing	unknown
T 08-00190P#	-	White willow	*Salix alba*	21	2000#	7	8	7	8	W-0	2	M	Multi stem, Spreading crown (base not seen)	Fair	0	None	No recommendations are given	20+	B1	24000	N/a	Fell for new hard surfacing, road widening and drainage	1
T 08-00191P#	-	White willow	*Salix alba*	21	1100#	5	8	7	5	W-2	2	M	Multi stem from 2.0m (base not seen)	Fair	0	None	No recommendations are given	20+	B1	13200	N/a		
T 08-00192P#	-	White willow	*Salix alba*	20	1100#	7	8	6	7	W-1	2	M	Multi stem from 3.0m (base not seen)	Fair	0	None	No recommendations are given	20+	B1	13200	N/a		
H 08-00193P#	-	Beech, Elder	*Fagus sylvatica, Sambucus nigra*	3	130#	1	1	1	1	-	0	EM	Multi stem	Fair	None	Path	Crown lift to 2.4m Over path, Maintain as hedge	40+	B1	1560	Routine		
G 08-00194	194	Beech	*Fagus sylvatica*	15	270	5	5	5	5	-	0	EM	Single stem	Fair	None	None	Thin stems as appropriate	40+	B1	3240	Routine	Fell for new hard surfacing	21
H 08-00195	195	Beech	*Fagus sylvatica*	4	170	5	1	1	1	-	2	SM	Single stem, recently topped	Fair	Excessive end weight	Path, Road	Crown lift to 2.4m Over path, Crown lift to 5.1m Over road, Maintain as hedge	40+	B1	2040	Routine	Fell for new hard surfacing	33

Tree No.	Tag No.	Species	Botanical Name	Height (m)	DBH (mm)	Canopy Spread				Lower branch direction and height (m)	Crown Clearance (m)	Age	General Observations					ULE	Category	RPA base radius (mm)	Priority	Works to facilitate development	No of trees in groups (where known)
						N	E	S	W				Crown Form	Condition	Defect	Obstacle	Action						
G 08-00196P#	-	Lime, Norway maple, Crack willow	*Tilia spp., Acer platanoides, Salix fragilis*	5	300#	5	5	5	5	-	1	SM	Single main stem with heavy side branches, recently topped	Fair	None	None	No recommendations are given	0	B1	3600	N/a		
G 08-00197	197	Beech	*Fagus sylvatica*	14	240	5	5	5	5	-	2	SM	Single main stem with heavy side branches	Fair	None	Path, Road	Crown lift to 2.4m Over path, Crown lift to 5.1m Over road, Thin stems as appropriate	40+	B1	2880	Routine	Fell for new hard surfacing	19
T 08-00198P#	-	Lime	*Tilia sp.*	10	370#	5	3	3	5	N-2	1	SM	Multi stem from 2.0m, One sided crown	Fair	None	Path, Road	Crown lift to 2.4m Over path, Crown lift to 5.1m Over road	40+	B1	4440	Routine	Fell for new hard surfacing	1
T 08-00199	199	Ash	*Fraxinus excelsior*	5	120	2	2	2	2	E-1	2	Y	Single main stem with heavy side branches	Fair	None	None	No action is required	20+	B1	1440	N/a	Fell for new hard surfacing	1
G 08-00200P#	-	Hazel, Goat willow	*Corylus spp., Salix caprea*	5	100#	4	4	4	4	-	1	SM	Multi stem	Fair	None	None	No recommendations are given	20+	B1	1200	N/a		
T 08-00201P#	-	Lime	*Tilia sp.*	12	340#	3	4	4	4	E-2	2	SM	Single main stem with heavy side branches	Fair	None	None	No recommendations are given	40+	B1	4080	N/a	Fell for new hard surfacing	1
T 08-00202P#	-	Lime	*Tilia sp.*	13	380#	5	4	5	3	E-2	2	SM	2 stems from 3.0m	Fair	Excessive ivy	Path	Remove ivy, Crown lift to 2.4m Over path	40+	B1	4560	Routine	Fell for new hard surfacing	1
T 08-00203P#	-	Lime	*Tilia sp.*	14	520#	5	5	5	3	S-2	2	SM	Multi stem from 2.0m, Spreading crown	Fair	Excessive ivy	Path, Road	Remove ivy, Crown lift to 2.4m Over path, Crown lift to 5.1m Over road	40+	B1	6240	Routine	Fell for new hard surfacing	1
G 08-00204	204	Crack willow	*Salix fragilis*	15	440	5	5	5	5	-	1	EM	Single main stem with heavy side branches	Fair	None	None	No recommendations are given	20+	B1	5280	N/a	Fell for new hard surfacing	6
G 08-00205	205	Beech	*Fagus sylvatica*	14	170	5	5	5	5	-	2	SM	Single stem	Fair	None	Lamp, Path, Road	Crown lift to 2.4m Over path, Crown lift to 5.1m Over road, Thin stems as appropriate, Clear lamp	40+	B1	2040	Routine	Fell for new hard surfacing	19
T 08-00206P#	-	Lime	*Tilia sp.*	14	440#	5	4	4	4	W-2	1	SM	Multi stem from 2.0m, Spreading crown	Fair	Excessive ivy	Lamp	Clear lamp	40+	B1	5280	Routine		

Tree No.	Tag No.	Species	Botanical Name	Height (m)	DBH (mm)	Canopy Spread				Lower branch direction and height (m)	Crown Clearance (m)	Age	General Observations					ULE	Category	RPA base radius (mm)	Priority	Works to facilitate development	No of trees in groups (where known)
						N	E	S	W				Crown Form	Condition	Defect	Obstacle	Action						
T 08-00207P#	-	Sycamore	*Acer pseudoplatanus*	13	451#	5	4	4	5	N-2	1	SM	2 stems from The ground	Fair	Excessive ivy	Path	Remove ivy, Crown lift to 2.4m Over path	40+	B1	5414	Routine	Fell	
G 08-00208P'	-	White willow	*Salix alba*	20	1000#	7	7	7	7	-	2	M	Multi stem (base not seen)	Fair	0	None	No recommendations are given	20+	B1	12000	N/a		
G 08-00209	209	Aspen, Beech	*Populus tremula, Fagus sylvatica*	8	150	2	2	2	2	-	0	Y	Single stem	Fair	None	None	No action is required	20+	B1	1800	N/a	Fell in part for new hard surfacing	1
T 08-00210P#	-	Norway maple	*Acer platanoides*	9	330#	5	4	3	4	W-2	1	SM	2 stems from 2.0m, Spreading crown	Fair	None	Path	Crown lift to 5.1m Over road	40+	B1	3960	Routine	No dig surfacing	
G 08-00211	211	Lime	*Tilia sp.*	10	300	4	4	2	3	-	2	SM	Single main stem with heavy side branches	Fair	None	None	No action is required	40+	B1	3600	N/a		
T 08-00212	212	Lime	*Tilia sp.*	8	330	4	5	4	4	E-1	3	SM	Multi stem from 1.0m	Fair	None	None	No action is required	40+	B1	3960	N/a		
G 08-00213	213	Norway maple	*Acer platanoides*	6	250	3	3	3	3	-	2	SM	Multi stem from 2.0m	Fair	None	None	No recommendations are given	40+	B1	3000	N/a		
G 08-00214	214	Norway maple	*Acer platanoides*	8	350	4	4	4	4	-	2	SM	Multi stem from 2.0m	Fair	None	None	No recommendations are given	40+	B1	4200	N/a		
T 08-00215	215	Lime	*Tilia sp.*	8	330	4	5	3	5	E-2	2	SM	Multi stem from 2.0m	Fair	None	None	No action is required	40+	B1	3960	N/a		
T 08-00216	216	Lime	*Tilia sp.*	9	460	5	5	4	4	S-1	2	SM	Multi stem from 1.0m	Fair	None	None	No action is required	40+	B1	5520	N/a		
T 08-00217	217	Elder	*Sambucus nigra*	7	381	4	3	2	2	N-1	1	M	Multi stem	Fair	None	Buildings	Clear back from building	20+	B1	4570	Routine		

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						N	E	S	W				Crown Form	Condition	Defect	Obstacle	Action						
G 08-00218	218	Lime	*Tilia sp.*	8	320	3	3	3	3	-	1	SM	Multi stem from 1.0m	Fair	None	Buildings	Clear back from building	40+	B1	3840	Routine		
G 08-00219	219	Lime	*Tilia sp.*	6	300	2	2	2	2	-	1	Y	Multi stem from 2.0m	Fair	None	None	No action is required	40+	B1	3600	N/a		
G 08-00220	220	Lime	*Tilia sp.*	7	170	2	3	3	3	-	0	Y	Multi stem	Fair	None	None	No action is required	40+	B1	2040	N/a		
H 08-00221	221	Hawthorn, Goat willow	*Crataegus spp., Salix caprea*	7	300	3	3	3	3	-	0	M	Multi stem	Fair	Thinning crown	Path, Road	Crown clean, Crown lift to 2.4m Over path, Crown lift to 5.1m Over road, Maintain as hedge	20+	B1	3600	Routine	Fell in part as per TPP for new hard surfacing	2
G 08-00222	222	Ash, Alder, Birch, Crack willow	*Fraxinus sp., Alnus sp., Betula sp., Salix fragilis*	16	300	5	5	5	5	-	1	SM	Single main stem with heavy side branches	Fair	None	Lamp, Path, Road	Crown lift to 2.4m Over path, Crown lift to 5.1m Over road, Thin stems as appropriate, Clear lamp, remove willow	20+	B1	3600	Routine	Fell in part for new hard surfacing	8
G 08-00223	223	Lime	*Tilia sp.*	9	310	4	4	4	4	-	1	Y	2 stems from 1.0m, 2 stems from 2.0m	Fair	None	Path, Road	Crown lift to 2.4m Over path, Crown lift to 5.1m Over road	40+	B1	3720	Routine	Fell for new hard surfacing	7
G 08-00224	224	Birch, Norway maple	*Betula sp., Acer platanoides*	12	250	5	5	5	5	-	1	SM	Single main stem with heavy side branches	Fair	None	None	No recommendations are given	40+	B1	3000	N/a		
G 08-00225	225	Lime	*Tilia sp.*	10	300	5	5	5	5	-	1	SM	Multi stem	Fair	None	Path	Crown lift to 2.4m Over path	40+	B1	3600	Routine		
W 08-00226	226	Ash, Beech, Birch, Larch, Oak, Monterey pine	*Fraxinus sp., Fagus sylvatica, Betula sp., Larix sp., Quercus sp., Cupressus macrocarpa*	16	450	5	5	5	5	-	1	SM	Single stem	Fair	Thinning crown	None	Thin stems as appropriate, Fell dead or dying stems	40+	B1	5400	< 3 months		
G 08-00227	227	Lime	*Tilia sp.*	8	300	5	5	5	5	-	0	Y	Multi stem	Fair	None	Path	Crown lift to 2.4m Over path	40+	B1	3600	Routine	Fell in part as per TPP for new hard surfacing	12

Tree No.	Tag No.	Species	Botanical Name	Height (m)	DBH (mm)	Canopy Spread				Lower branch direction and height (m)	Crown Clearance (m)	Age	General Observations					ULE	Category	RPA base radius (mm)	Priority	Works to facilitate development	No of trees in groups (where known)
						N	E	S	W				Crown Form	Condition	Defect	Obstacle	Action						
G 08-00228	228	Plum	*Prunus domestica*	6	170	4	4	4	4	-	0	M	Multi stem	Fair	Thinning crown	Path	Crown lift to 2.4m Over path, Fell dead or dying stems	20+	B1	2040	< 3 months		
G 08-00229	229	Lime	*Tilia sp.*	11	350	5	5	5	5	-	1	SM	Multi stem	Fair	None	Lamp, Path, Road	Crown lift to 2.4m Over path, Crown lift to 5.1m Over road, Clear lamp	40+	B1	4200	Routine		
G 08-00230	230	Lime, Plum	*Tilia spp., Prunus domestica*	8	300	4	4	4	4	-	0	SM	Multi stem	Fair	None	Lamp, Path	Crown lift to 2.4m Over path, Clear lamp	40+	B1	3600	Routine		
G 08-00231	231	Ash, Alder, Birch, Bird cherry, Elder, Crack willow	*Fraxinus sp. cv., Alnus sp., Betula sp., Prunus padus, Sambucus nigra, Salix fragilis*	13	300	5	5	5	5	-	1	SM	Multi stem	Fair	None	None	Thin stems as appropriate	40+	B1	3600	Routine		
S 08-00232	232	Elder	*Sambucus nigra*	5	170	2	3	3	3	N-0	0	M	Multi stem	Fair	None	None	No action is required	20+	B1	2040	N/a		
G 08-00233	-	Flowering cherry	Prunus spp.	4	150	3	3	3	3	-	2	SM	Single main stem with heavy side branches	Fair	None	Road	Crown clean, Crown lift to 5.1m over road	20+	B1	1800	Routine	Fell for new bridge	
T 08-00234	-	Rowan	Sorbus aucuparia	5	180	2	2	3	2	E-2	1	M	Single main stem with heavy side branches	Fair	None	None	No action is required	20+	B1	2160	N/A	Fell for new bridge	

Key to Abbreviations Used in the Survey

Ref No	Specific identification number given to each tree or group. T=Tree/H=Hedge/G=Group.	
Tag No	Tree marked with individual tree tag of this reference number on site.	
Species	Common name followed by botanical name shown in *italics*	
RPA	Root Protection Area (As defined by BS5837)	
Stem diameter	Diameter of main stem, measured in millimetres at 1.5 m above ground level. (MS = Multi-stem tree measured in accordance with BS5837 Annexe C)	Av / Average: indicates an average representative measured dimension for the group or feature
Spread	The width and breadth of the crown. Estimated on the four compass points in metres.	
Crown clearance	The estimated height (in metres) above ground level of the lowest significant branch attachments.	
#	Estimated dimensions	
*	Indicates estimated position of tree (not indicated on topographical survey).	
P	Privately owned tree (e.g. tree not located within the road boundary or adjacent public land).	
Category	Categorisation of the quality and benefits of trees on Site as per Table 1 and 2 of BS5837:2012. 1=Arboricultural quality/value 2=Landscape quality/value 3=Cultural quality/value (including conservation)	
	A=High quality/value 40yrs+ (light green). B=Moderate quality/value 20yrs+ (mid blue) C=Low quality/value min 10yrs/stem diameter less than 150mm (grey). U=Unsuitable for retention (dark red).	
Life stage	**Young (Y):** Newly planted tree 0-10 years. **Semi-Mature (SM):** Tree in the first third of its normal life expectancy for the species (significant potential for future growth in size). **Early Mature (EM):** Tree in the second third of its normal life expectancy for the species (some potential for future growth in size) **Mature (M):** Tree in the final third of its normal life expectancy for the species (having typically reached its approximate ultimate size). **Over Mature (OM):** Tree beyond the normal life expectancy for the species. **Veteran (V):** Tree which is of interest biologically, aesthetically or culturally because of its condition, size or age.	
Structural condition	**Good:** No significant structural defects **Fair:** Structural defects which can be resolved via remedial works. **Poor:** Structural defects which cannot be resolved via remedial works. **Dead:** Dead.	
Physiological condition	**Good:** Normal vitality including leaf size, bud growth, density of crown and wound wood development. **Fair:** Lower than normal vitality, reduced bud development, reduced crown density, reduced response to wounds. **Poor:** Low vitality, low development and distribution of buds, discoloured leaves, low crown density, little extension growth for the species. **Dead:** Dead **Fair/Good** = Indicates an intermediate condition **Fair – Good** = Indicates a range of conditions (e.g. within a group)	

Preliminary management recommendations	Works identified during the tree survey as part of sound arboricultural management, based on the current context of the Site (where relevant reference has been made to tree management based on the potential future context of the site).
Works to facilitate the development	Tree works identified as necessary to facilitate the Proposed Development following a desk top analysis of the proposals in relation to tree constraints.

Appendix B Tree Clearance Plans

Clondalkin:

- BCID-ACM-ENV_LA-0008_XX_00-DR-ES-0001 to 0012

GENERAL NOTES

1. TREE SURVEY CARRIED OUT BY SUB CONSULTANTS AS DETAILED IN ARBORICULTURAL REPORT.
2. TREE LOCATIONS ARE BASED ON AVAILABLE TOPOGRAPHICAL SURVEY LOCATIONS WITH REFERENCE TO AERIAL IMAGERY AND ON SITE OBSERVATIONS.
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4. 'P' INDICATES A TREE / GROUP IDENTIFIED DURING SURVEY AS BEING WITHIN PRIVATE OWNERSHIP.
5. PLANS SHOULD BE READ IN CONJUNCTION WITH THE AECOM ARBORICULTURAL REPORT & TREE PROTECTION PLANS.
6. THE ORIGINAL OF THIS DRAWING WAS PRODUCED IN COLOUR - A MONOCHROME COPY SHOULD NOT BE RELIED UPON.

KEY

- **SURVEYED EXISTING TREE, GROUP OR HEDGE TO BE RETAINED**
- **SURVEYED EXISTING TREE, GROUP OR HEDGE TO BE REMOVED**
- **UNSURVEYED EXISTING TREE FEATURE TO BE RETAINED** *(AS BASED UPON TOPOGRAPHICAL SURVEY AND AERIAL IMAGERY)*
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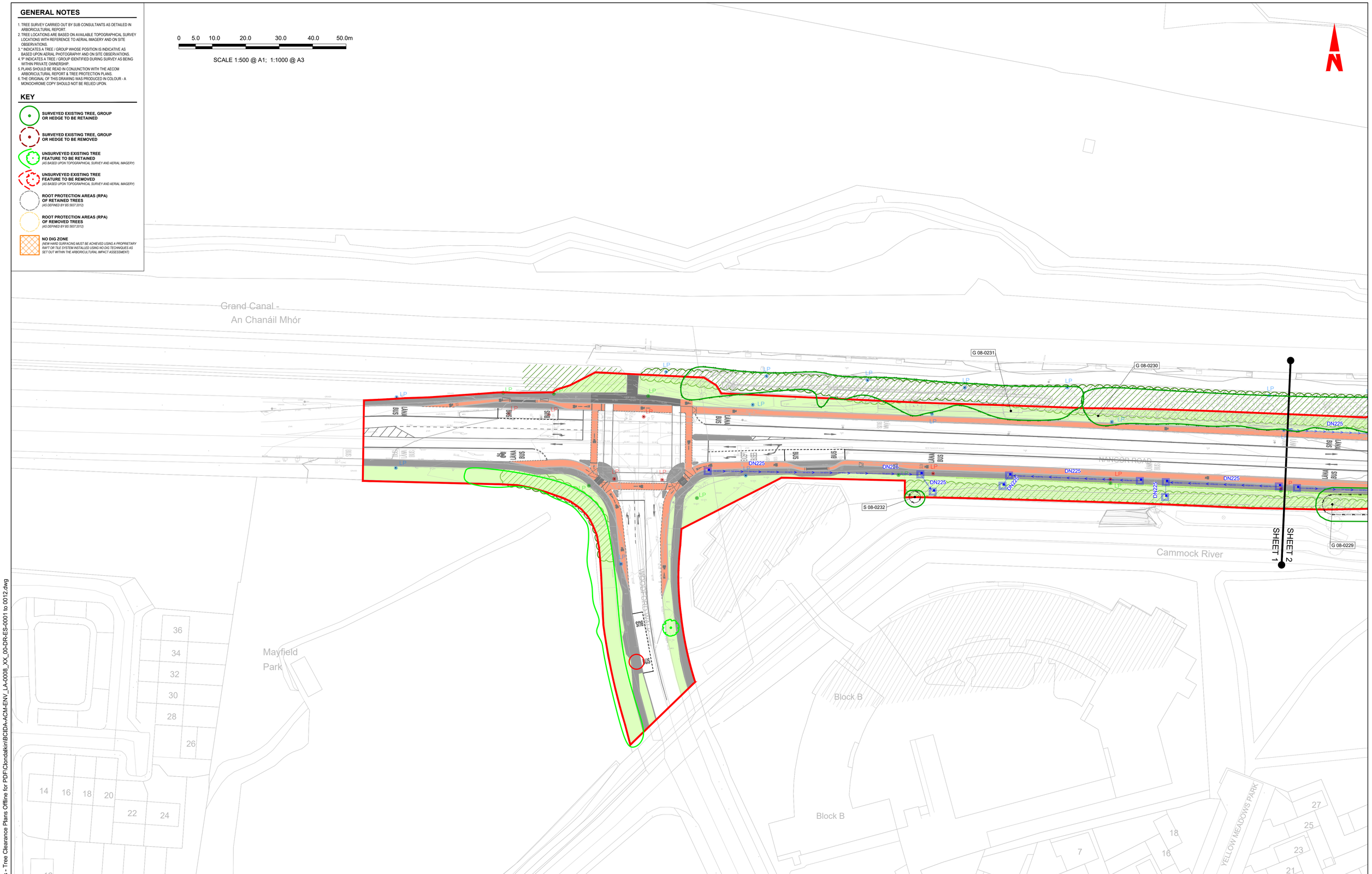

Project Ireland 2040
Building Ireland's Future

Rev	Date	Drn	Chk'd	App'd	Description
L02	21/03/23	CC	AD	CA	UPDATED WITH PROJECT TEAM COMMENTS

Client: NTA Údarás Náisiúnta Iompair / National Transport Authority	Engineering Designer: AECOM / MOTT MACDONALD		
Date: 21/03/23	Scale: 1:500 @ A1, 1:1000 @ A3	Drawn: C.COUPLAND	Checked: A.DUGGAN / Approved: C.ACTON
Project Code: BCIDA	Originator Code: ACM	QMS Code:	

Programme Title: **BUSCONNECTS DUBLIN**
CORE BUS CORRIDORS INFRASTRUCTURE WORKS

Drawing Title:
TALLAGHT/CLONDALKIN TO CITY CENTRE CORE BUS CORRIDOR SCHEME
CLONDALKIN TO DRIMNAGH SECTION
TREE CLEARANCE PLAN

Drawing File Name	Sheet Number	Status	Rev
BCIDA-ACM-ENV_LA-0008_XX_00-DR-ES-0001	01 of 12	S4	L02

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0 5.0 10.0 20.0 30.0 40.0 50.0m

SCALE 1:500 @ A1; 1:1000 @ A3

N

Car Park

WESTERN PARKWAY MOTORWAY

GRAND CANAL

Grand Canal - An Chanáil Mhór

NANGOR ROAD

River

Cammock River

YELLOW MEADOWS PARK

SHEET 1

SHEET 2

SHEET 3

G 08-0222 G 08-0223 G 08-0224 G 08-0225 G 08-0226 G 08-0227 G 08-0228 G 08-0229 G 08-0230 H 08-0221 W 08-0226

DN225 DN300 LINK BUS

Project Ireland 2040 Building Ireland's Future

Rev	Date	Drn	Chk'd	App'd	Description
L02	21/03/23	CC	AD	CA	UPDATED WITH PROJECT TEAM COMMENTS

Client: NTA Údarás Náisiúnta Iompair National Transport Authority

Engineering Designer: AECOM / MOTT MACDONALD

Date	Scale	Drawn	Checked	Approved
21/03/23	1:500 @ A1, 1:1000 @ A3	C.COUPLAND	A.DUGGAN	C.ACTON

Project Code	Originator Code	QMS Code
BCIDA	ACM	

Programme Title: **BUSCONNECTS DUBLIN CORE BUS CORRIDORS INFRASTRUCTURE WORKS**

Drawing Title: TALLAGHT/CLONDALKIN TO CITY CENTRE CORE BUS CORRIDOR SCHEME CLONDALKIN TO DRIMNAGH SECTION TREE CLEARANCE PLAN

Drawing File Name	Sheet Number	Status	Rev
BCIDA-ACM-ENV_LA-0008_XX_00-DR-ES-0002	02 of 12	S4	L02

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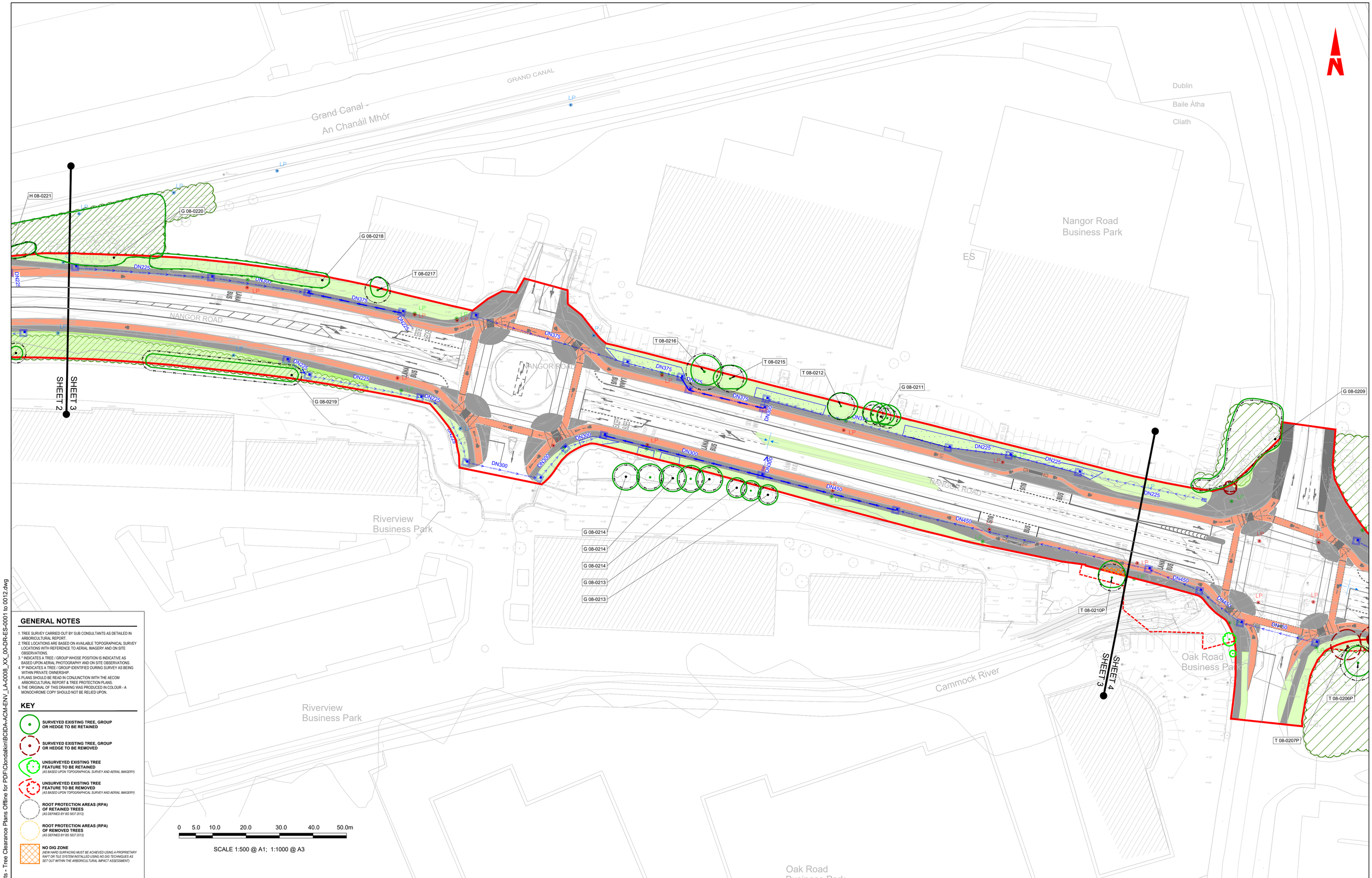

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Engineering Designer: AECOM / MOTT MACDONALD

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Drawing File Name	Sheet Number	Status	Rev
BCIDA-ACM-ENV_ZZ-0008_XX_00-DR-LL-0003	03 of 12	S4	L02

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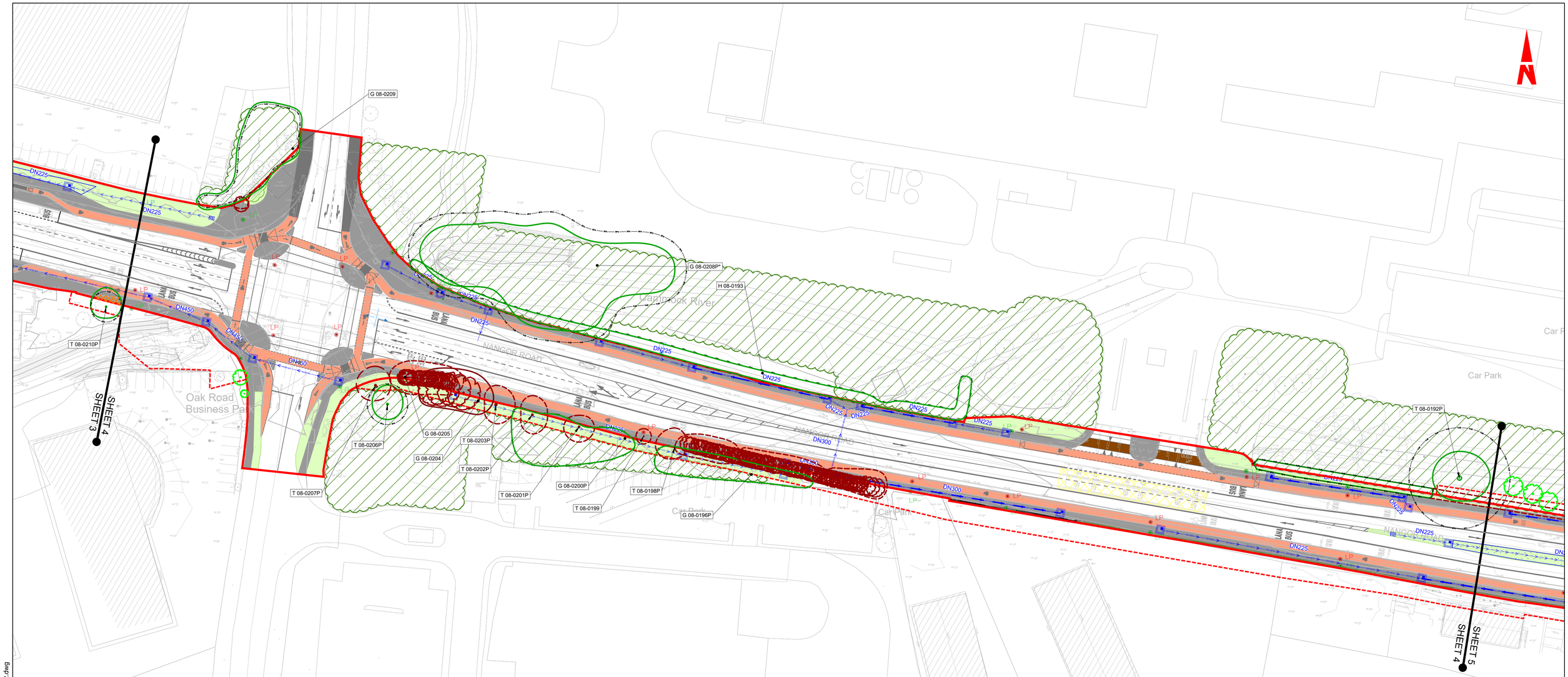

GENERAL NOTES

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KEY

- **SURVEYED EXISTING TREE, GROUP OR HEDGE TO BE RETAINED**
- **SURVEYED EXISTING TREE, GROUP OR HEDGE TO BE REMOVED**
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SCALE 1:500 @ A1; 1:1000 @ A3

Project Ireland 2040 Building Ireland's Future

Rev	Date	Drn	Chk'd	App'd	Description
L02	21/03/23	CC	AD	CA	UPDATED WITH PROJECT TEAM COMMENTS

Client: NTA Údarás Náisiúnta Iompair National Transport Authority

Engineering Designer: AECOM / MOTT MACDONALD

Date	Scale	Drawn	Checked	Approved
21/03/23	1:500 @ A1, 1:1000 @ A3	C.COUPLAND	A.DUGGAN	C.ACTON

Project Code	Originator Code	QMS Code
BCIDA	ACM	

Programme Title: **BUSCONNECTS DUBLIN**
CORE BUS CORRIDORS INFRASTRUCTURE WORKS

Drawing Title: TALLAGHT/CLONDALKIN TO CITY CENTRE CORE BUS CORRIDOR SCHEME
CLONDALKIN TO DRIMNAGH SECTION
TREE CLEARANCE PLAN

Drawing File Name	Sheet Number	Status	Rev
BCIDA-ACM-ENV_ZZ-0008_XX_00-DR-LL-0004	04 of 12	S4	L02

DO NOT SCALE USE FIGURED DIMENSIONS ONLY

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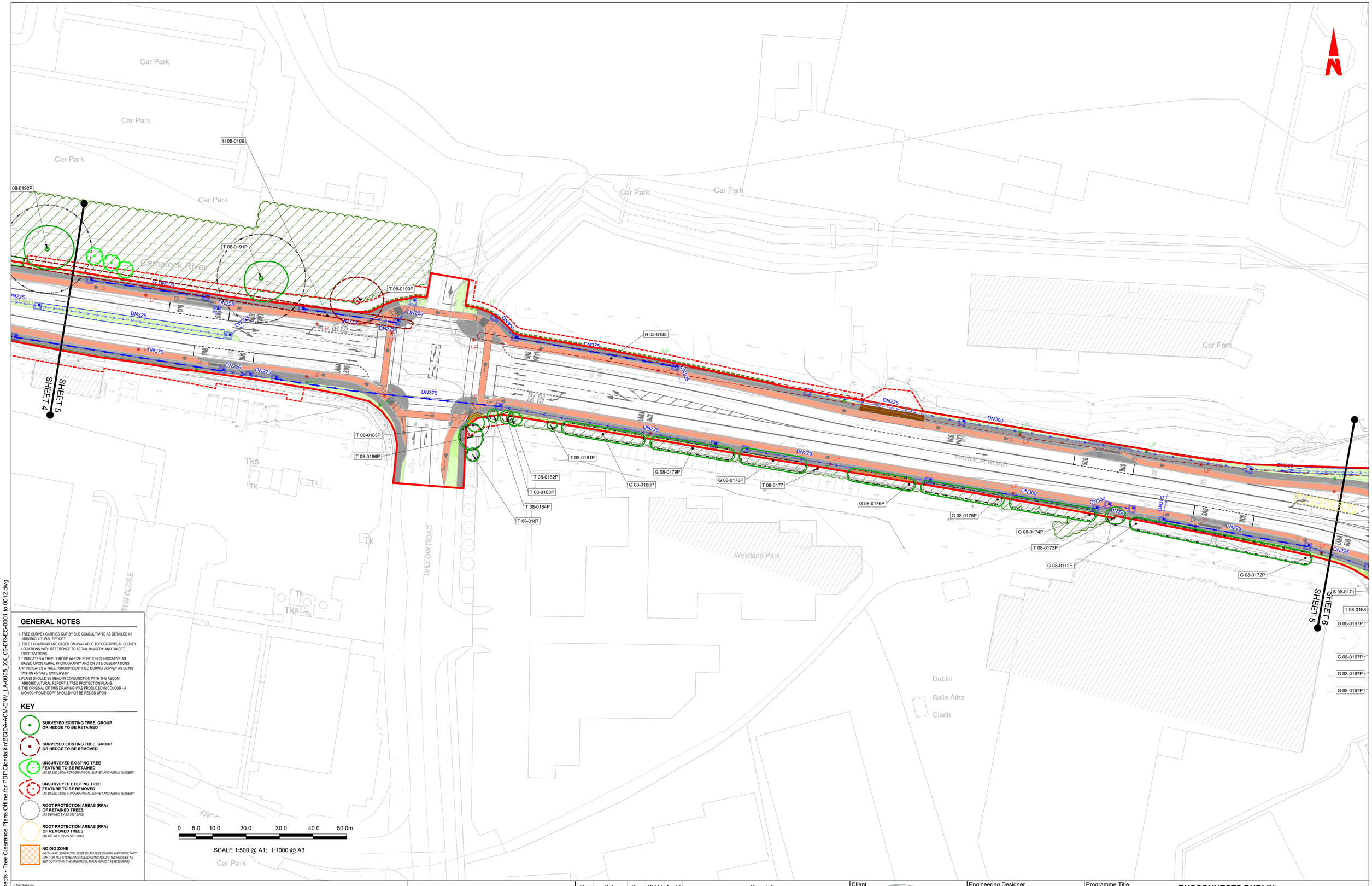

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Project Ireland 2040 Building Ireland's Future

Rev	Date	Drn	Chk'd	App'd	Description
L02	21/03/23	CC	AD	CA	UPDATED WITH PROJECT TEAM COMMENTS

Client: NTA Údarás Náisiúnta Iompair National Transport Authority

Engineering Designer: AECOM / MOTT MACDONALD

Date: 21/03/23 | Scale: 1:500 @ A1, 1:1000 @ A3 | Drawn: C.COUPLAND | Checked: A.DUGGAN | Approved: C.ACTON

Project Code: BCIDA | Originator Code: ACM | QMS Code:

Programme Title: **BUSCONNECTS DUBLIN CORE BUS CORRIDORS INFRASTRUCTURE WORKS**

Drawing Title: TALLAGHT/CLONDALKIN TO CITY CENTRE CORE BUS CORRIDOR SCHEME CLONDALKIN TO DRIMNAGH SECTION TREE CLEARANCE PLAN

Drawing File Name: BCIDA-ACM-ENV_ZZ-0008_XX_00-DR-LL-0005 | Sheet Number: 05 of 12 | Status: S4 | Rev: L02

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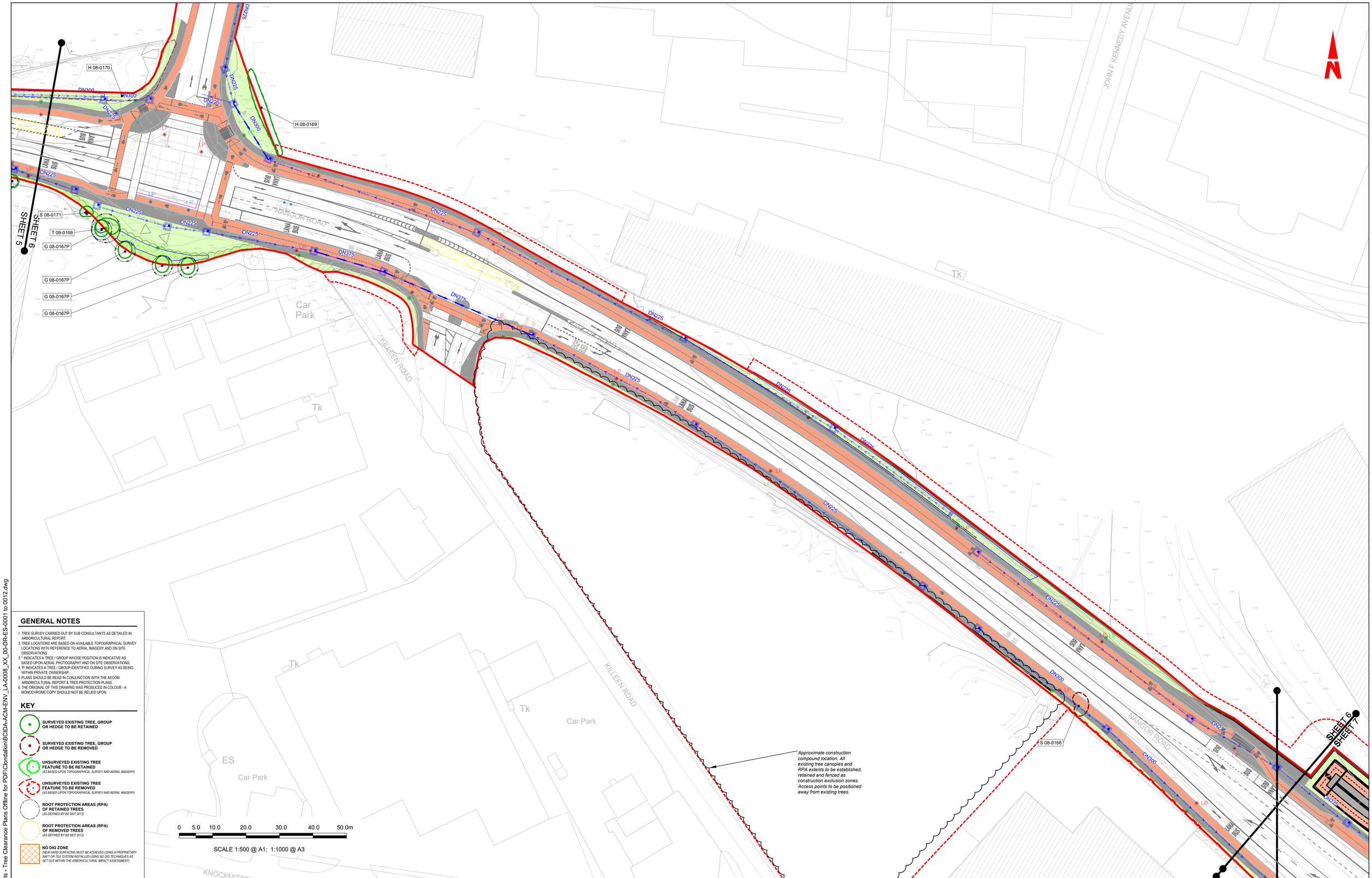

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Project Ireland 2040 Building Ireland's Future

Rev	Date	Drn	Chk'd	App'd	Description
L02	21/03/23	CC	AD	CA	UPDATED WITH PROJECT TEAM COMMENTS

Client: NTA Údarás Náisiúnta Iompair National Transport Authority

Engineering Designer: AECOM / MOTT MACDONALD

Date	Scale	Drawn	Checked	Approved
21/03/23	1:500 @ A1, 1:1000 @ A3	C.COUPLAND	A.DUGGAN	C.ACTON

Project Code	Originator Code	QMS Code
BCIDA	ACM	

Programme Title: **BUSCONNECTS DUBLIN**
CORE BUS CORRIDORS INFRASTRUCTURE WORKS

Drawing Title: TALLAGHT/CLONDALKIN TO CITY CENTRE CORE BUS CORRIDOR SCHEME
CLONDALKIN TO DRIMNAGH SECTION
TREE CLEARANCE PLAN

Drawing File Name	Sheet Number	Status	Rev
BCIDA-ACM-ENV_ZZ-0008_XX_00-DR-LL-0006	06 of 12	S4	L02

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SCALE 1:500 @ A1; 1:1000 @ A3

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Project Ireland 2040
Building Ireland's Future

Rev	Date	Drn	Chk'd	App'd	Description
L02	21/03/23	CC	AD	CA	UPDATED WITH PROJECT TEAM COMMENTS

Client: NTA Údarás Náisiúnta Iompair National Transport Authority

Engineering Designer: AECOM / MOTT MACDONALD

Programme Title: **BUSCONNECTS DUBLIN**
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Drawing Title:
TALLAGHT/CLONDALKIN TO CITY CENTRE CORE BUS CORRIDOR SCHEME
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TREE CLEARANCE PLAN

Date	Scale	Drawn	Checked	Approved
21/03/23	1:500 @ A1 1:1000 @ A3	C.COUPLAND	A.DUGGAN	C.ACTON

Project Code	Originator Code	QMS Code	Drawing File Name	Sheet Number	Status	Rev
BCIDA	ACM		BCIDA-ACM-ENV_ZZ-0008_XX_00-DR-LL-0007	07 of 12	S4	L02

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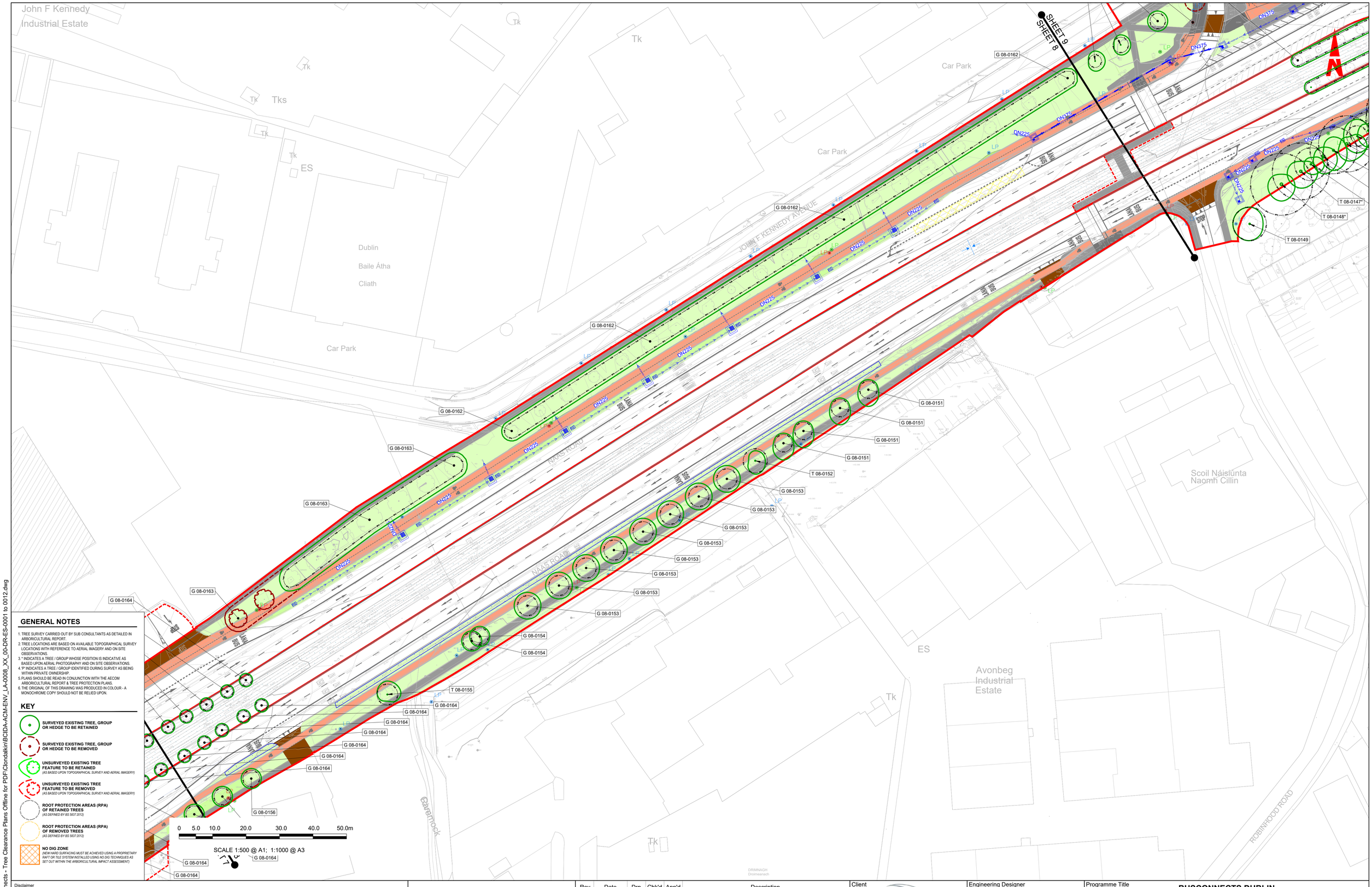

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Project Ireland 2040 Building Ireland's Future

Rev	Date	Drn	Chk'd	App'd	Description
L02	21/03/23	CC	AD	CA	UPDATED WITH PROJECT TEAM COMMENTS

Client: NTA Údarás Náisiúnta Iompair / National Transport Authority

Engineering Designer: AECOM / MOTT MACDONALD

Programme Title: **BUSCONNECTS DUBLIN CORE BUS CORRIDORS INFRASTRUCTURE WORKS**

Drawing Title: TALLAGHT/CLONDALKIN TO CITY CENTRE CORE BUS CORRIDOR SCHEME CLONDALKIN TO DRIMNAGH SECTION TREE CLEARANCE PLAN

Date	Scale	Drawn	Checked	Approved
21/03/23	1:500 @ A1, 1:1000 @ A3	C.COUPLAND	A.DUGGAN	C.ACTON

Project Code	Originator Code	QMS Code
BCIDA	ACM	

Drawing File Name: BCIDA-ACM-ENV_ZZ-0008_XX_00-DR-LL-0008

Sheet Number: 08 of 12 | Status: S4 | Rev: L02

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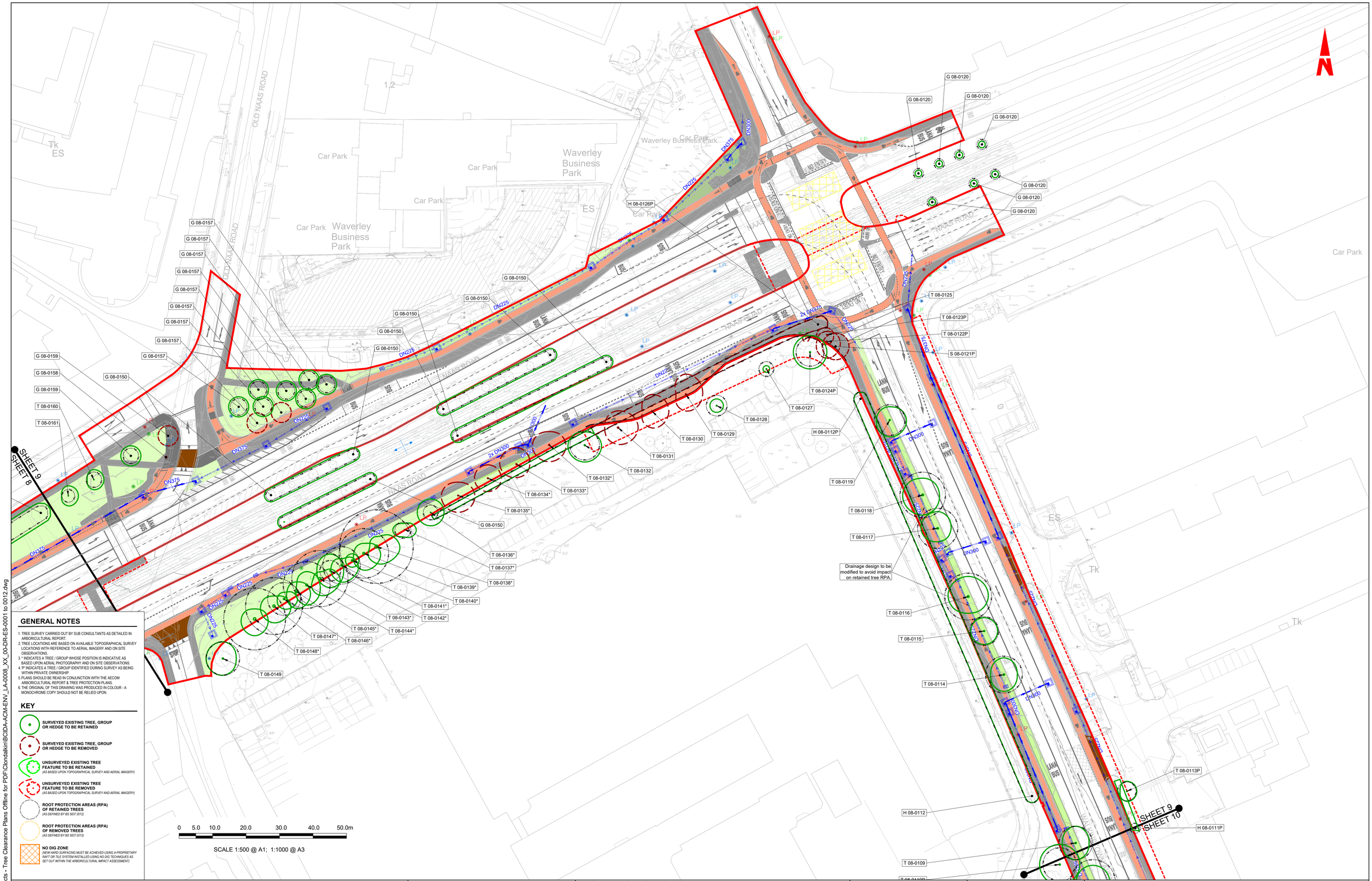

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Project Ireland 2040 Building Ireland's Future

Rev	Date	Drn	Chk'd	App'd	Description
L02	21/03/23	CC	AD	CA	UPDATED WITH PROJECT TEAM COMMENTS

Client: NTA Údarás Náisiúnta Iompair / National Transport Authority

Engineering Designer: AECOM / MOTT MACDONALD

Programme Title: **BUSCONNECTS DUBLIN CORE BUS CORRIDORS INFRASTRUCTURE WORKS**

Drawing Title: TALLAGHT/CLONDALKIN TO CITY CENTRE CORE BUS CORRIDOR SCHEME CLONDALKIN TO DRIMNAGH SECTION TREE CLEARANCE PLAN

Date	Scale	Drawn	Checked	Approved
21/03/23	1:500 @ A1, 1:1000 @ A3	C.COUPLAND	A.DUGGAN	C.ACTON

Project Code	Originator Code	QMS Code	Drawing File Name	Sheet Number	Status	Rev
BCIDA	ACM		BCIDA-ACM-ENV_ZZ-0008_XX_00-DR-LL-0009	09 of 12	S4	L02

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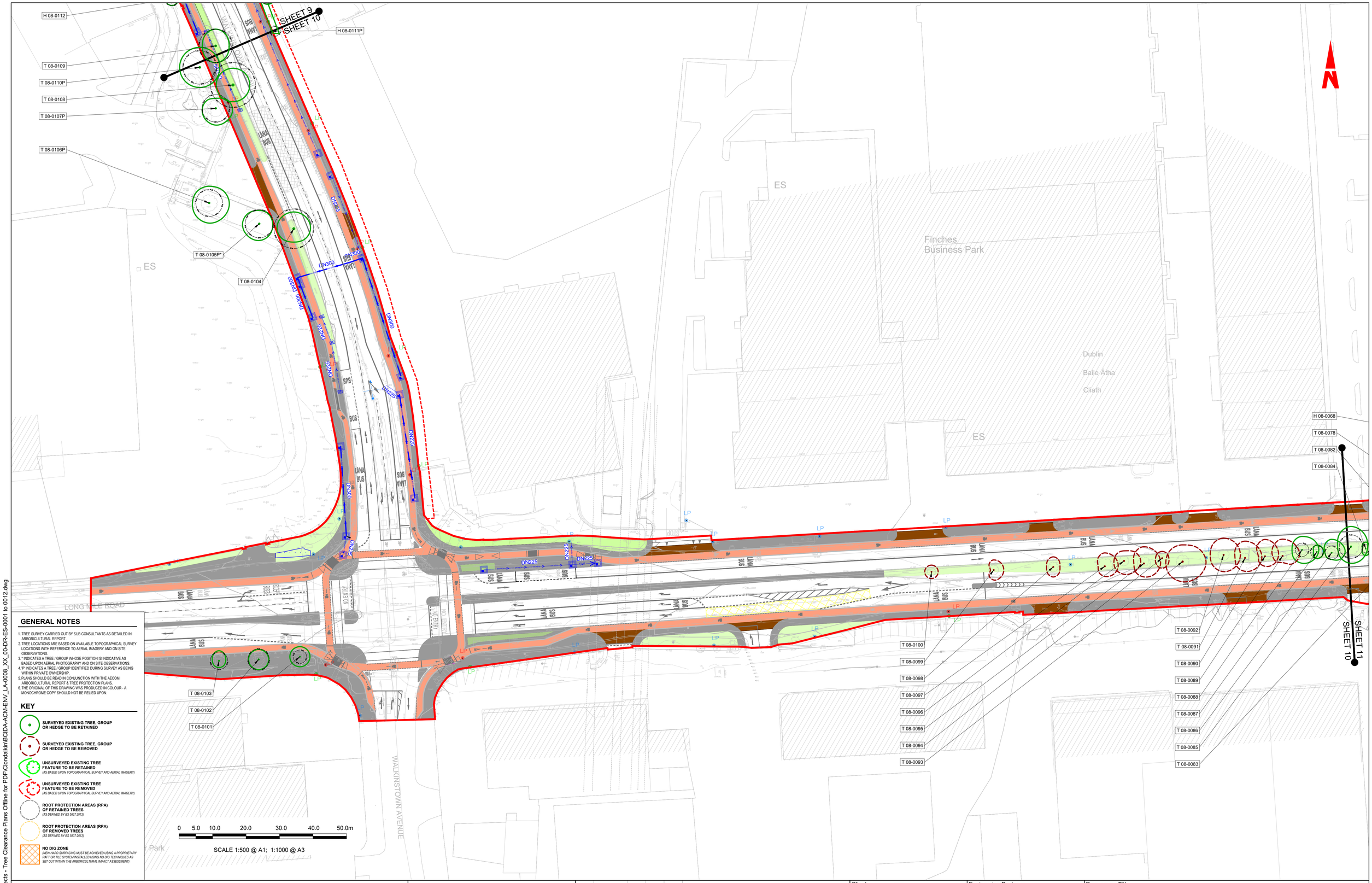

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Project Ireland 2040 Building Ireland's Future

Rev	Date	Drn	Chk'd	App'd	Description
L02	21/03/23	CC	AD	CA	UPDATED WITH PROJECT TEAM COMMENTS

Client: NTA — Údarás Náisiúnta Iompair, National Transport Authority

Engineering Designer: AECOM / MOTT MACDONALD

Date	Scale	Drawn	Checked	Approved
21/03/23	1:500 @ A1, 1:1000 @ A3	C.COUPLAND	A.DUGGAN	C.ACTON

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BCIDA	ACM	

Programme Title: **BUSCONNECTS DUBLIN CORE BUS CORRIDORS INFRASTRUCTURE WORKS**

Drawing Title: TALLAGHT/CLONDALKIN TO CITY CENTRE CORE BUS CORRIDOR SCHEME CLONDALKIN TO DRIMNAGH SECTION TREE CLEARANCE PLAN

Drawing File Name	Sheet Number	Status	Rev
BCIDA-ACM-ENV_ZZ-0008_XX_00-DR-LL-0010	10 of 12	S4	L02

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SCALE 1:500 @ A1; 1:1000 @ A3

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T 08-0059P, T 08-0060P, T 08-0061P, T 08-0062P, T 08-0046, T 08-0063P*, T 08-0064P, T 08-0065P, T 08-0066P, T 08-0067P, T 08-0054P, S 08-0057P, T 08-0055P, T 08-0034, T 08-0056P, T 08-0058P, T 08-0051P, G 08-0052P, G 08-0052P, G 08-0053P, G 08-0053P, G 08-0053P, T 08-0030, G 08-0053P, T 08-0019, T 08-0049P, T 08-0050P, T 08-0045, T 08-0044, T 08-0043, T 08-0042, T 08-0041, T 08-0040, T 08-0039, T 08-0038, T 08-0037, T 08-0036, T 08-0035, T 08-009P, T 08-0033, T 08-008P*, T 08-0032, T 08-0031, T 08-0029, T 08-007P#, T 08-0028, G 08-006P, T 08-0027, T 08-0026, T 08-005P, T 08-004P, T 08-0025, T 08-003P, T 08-0024, T 08-0023, T 08-0022, G 08-002P, T 08-0021, S 08-001P, T 08-0020, T 08-0081, T 08-0080, T 08-0079, G 08-0077, T 08-0076, T 08-0075, T 08-0074, G 08-0073, T 08-0072, T 08-0071, T 08-0070, T 08-0069, T 08-0011P#, T 08-0010P#

SHEET 10 — SHEET 11 — SHEET 12

Drimnagh Castle

Monastery

Drimnagh Castle Secondary School

Car Park

WALKINSTOWN PARADE

Assumption Junior National School

Assumption National and Senior School

Project Ireland 2040 Building Ireland's Future

Rev	Date	Drn	Chk'd	App'd	Description
L02	21/03/23	CC	AD	CA	UPDATED WITH PROJECT TEAM COMMENTS

Client: NTA — Údarás Náisiúnta Iompair, National Transport Authority

Engineering Designer: AECOM / MOTT MACDONALD

Date	Scale	Drawn	Checked	Approved
21/03/23	1:500 @ A1, 1:1000 @ A3	C.COUPLAND	A.DUGGAN	C.ACTON

Project Code	Originator Code	QMS Code
BCIDA	ACM	

Programme Title: **BUSCONNECTS DUBLIN CORE BUS CORRIDORS INFRASTRUCTURE WORKS**

Drawing Title: TALLAGHT/CLONDALKIN TO CITY CENTRE CORE BUS CORRIDOR SCHEME
CLONDALKIN TO DRIMNAGH SECTION
TREE CLEARANCE PLAN

Drawing File Name	Sheet Number	Status	Rev
BCIDA-ACM-ENV_ZZ-0008_XX_00-DR-LL-0011	11 of 12	S4	L02

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GENERAL NOTES

1. TREE SURVEY CARRIED OUT BY SUB CONSULTANTS AS DETAILED IN ARBORICULTURAL REPORT.
2. TREE LOCATIONS ARE BASED ON AVAILABLE TOPOGRAPHICAL SURVEY LOCATIONS WITH REFERENCE TO AERIAL IMAGERY AND ON SITE OBSERVATIONS.
3. * INDICATES A TREE / GROUP WHOSE POSITION IS INDICATIVE AS BASED UPON AERIAL PHOTOGRAPHY AND ON SITE OBSERVATIONS.
4. 'P' INDICATES A TREE / GROUP IDENTIFIED DURING SURVEY AS BEING WITHIN PRIVATE OWNERSHIP.
5. PLANS SHOULD BE READ IN CONJUNCTION WITH THE AECOM ARBORICULTURAL REPORT & TREE PROTECTION PLANS.
6. THE ORIGINAL OF THIS DRAWING WAS PRODUCED IN COLOUR - A MONOCHROME COPY SHOULD NOT BE RELIED UPON.

KEY

- **SURVEYED EXISTING TREE, GROUP OR HEDGE TO BE RETAINED**
- **SURVEYED EXISTING TREE, GROUP OR HEDGE TO BE REMOVED**
- **UNSURVEYED EXISTING TREE FEATURE TO BE RETAINED** *(AS BASED UPON TOPOGRAPHICAL SURVEY AND AERIAL IMAGERY)*
- **UNSURVEYED EXISTING TREE FEATURE TO BE REMOVED** *(AS BASED UPON TOPOGRAPHICAL SURVEY AND AERIAL IMAGERY)*
- **ROOT PROTECTION AREAS (RPA) OF RETAINED TREES** *(AS DEFINED BY BS 5837:2012)*
- **ROOT PROTECTION AREAS (RPA) OF REMOVED TREES** *(AS DEFINED BY BS 5837:2012)*
- **NO DIG ZONE** *(NEW HARD SURFACING MUST BE ACHIEVED USING A PROPRIETARY RAFT OR TILE SYSTEM INSTALLED USING NO DIG TECHNIQUES AS SET OUT WITHIN THE ARBORICULTURAL IMPACT ASSESSMENT)*

Project Ireland 2040 Building Ireland's Future

Rev	Date	Drn	Chk'd	App'd	Description
L02	21/03/23	CC	AD	CA	UPDATED WITH PROJECT TEAM COMMENTS

Client: NTA Údarás Náisiúnta Iompair National Transport Authority

Engineering Designer: AECOM / MOTT MACDONALD

Date	Scale	Drawn	Checked	Approved
21/03/23	1:500 @ A1, 1:1000 @ A3	C.COUPLAND	A.DUGGAN	C.ACTON

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Appendix C Arboricultural Method Statement

C.1 Arboricultural Method Statement Overview

This Arboricultural Method Statement details the specification for tree protection measures and how sensitive operations are to be achieved in proximity to trees to be retained. It also addresses the general management of Site activities to ensure that retained trees are not inadvertently damaged.

This document may need to be amended to reflect more detailed or updated information as it becomes available. The final agreed version must be read in conjunction with the Tree Protection Plan and copies of both documents must be permanently available on Site for reference throughout the development. All Site personnel must be made fully aware of its contents and the implications for work they may be involved in. All elements of the agreed Method Statement must be adhered to in full. No changes may take place to the content or application of the Method Statement without the prior written approval of the Project Arboriculturist.

When planning permission is in place, some details (including changes in layout, services, materials, tree protection measures and the order of works) may be subject to change. No changes should be enacted without the prior written approval of the Project Arboriculturist. The Method Statement must be reviewed in advance of the commencement.

C.2 Pre commencement site meeting

Prior to the commencement of works on Site a meeting must take place including the Site Manager and Project Arboriculturist. This meeting will allow a further discussion of the programme of works, tree protection measures, the locations of the areas for storage/site organisation and the agreement of any changes to the Method Statement which will then be formally updated and approved as required.

C.3 Order of operations

1 Pre commencement Site meeting;

2 Preliminary tree works;

3 Site briefing for Site personnel;

4 Installation of protective fencing and ground protection as required;

5 Demolition and enabling works including utility diversions;

6 Re adjustment of protective fencing and ground protection as required;

7 Construction operations ;

8 Re adjustment of protective fencing and ground protection as required;

9 Installation of new hard surfaces and hard landscaping;

10 Site signed off on agreed completion of significant development works;

11 Dismantling of tree protection measures;

12 Soft landscaping works within the Root Protection Area (RPA) of retained trees;

C.4 Preliminary tree works

All approved tree works are to be completed by suitably qualified and insured contractors and must take place before protective fencing is installed and any Site works begin.

All tree works must be carried out in line with the principles of BS3998: 2010 Tree work – recommendations and be conducted in such a way that no damage is caused to any tree to be retained. The tree works contractor must avoid the production of ruts on unmade ground.

A tree works specification which identifies trees to be felled or pruned is included in the schedule in Appendix A.

Due to the extensive nature of the Site and the potential for tree growth in the period between planning and construction, prior to the commencement of works on a given area of the Site a walkover must be undertaken by the Site team including the Poject Arboriculturist to determine if any additional tree works are likely to be required to facilitate the development.

If further additional tree works are deemed to be required during the development the advice of the Project Arboriculturist is to be obtained.

Prior to the commencement of any tree works a thorough check for protected species (including nesting birds, bats and badgers) is to be undertaken. If evidence of any protected species is discovered the advice of a suitably qualified ecologist must be obtained. Tree works are to be undertaken outside of the typical nesting bird season (March to September) outside of this period any individual trees will be inspected for evidence of nesting birds by a suitably qualified person prior to works being carried out.

C.5 Site briefing

The Site Manager is responsible for ensuring that all personnel are made fully aware of the constraints posed by retained trees on site and the measures in place to ensure they are protected, including having full on-site access to the Arboricultural Method Statement and Tree Protection Plan (TPP). It is good practice for the site arboriculturist to be involved in the site briefing to ensure all constraints and tree protection measures are clearly understood.

C.6 Site monitoring

An auditable system of Site monitoring shall be established to guide contractors on Site, ensure that tree protection measures are implemented and adhered to.

This includes Site visits by the Project Arboriculturist (as appointed by the developer) to confirm the correct installation of protective fencing, to oversee sensitive elements of works within the RPA of retained trees and to sign off the Site when works are complete before fencing can be dismantled.

The frequency of Site monitoring will be agreed in writing before works begin on Site (but is recommended to be at least every four weeks in addition to ad hoc monitoring of particularly sensitive operations near retained trees as required). An example Site monitoring form is included as Appendix D.

C.7 Toolbox Talk

A Toolbox Talk should be provided to Site workers to highlight the need for safe driving of plant and working within the defined corridor to ensure that accidents and resulting potential damage to trees not covered by tree protection measures are eliminated. A copy of the TPP should be used in the process of explaining to all personal the requirements required to ensure retained trees are not damaged and copies of both the TPP and this Method Statement must be available in the Site office at all times.

C.8 Protective fencing

In many areas of the Site the works are contained within the existing road boundary bordered by existing walls or fencing and surrounded by hard surfacing. In such cases no additional tree protection fencing is likely to be required.

Where retained trees are at risk of damage, the default position as set out by BS 5837:2012 is that retained trees must be protected from construction operations with the erection of robust protective fencing positioned on the outer edge of the RPA or crown spread (whichever is greatest). All site operations will be restricted to the area outside of tree protection fencing and this area will form a Construction Exclusion Zone (CEZ) unless agreed otherwise. Protection measures will be installed as set out in the Tree Protection Plan.

The area inside the fence and any additional tree protection measures will be sacrosanct and must not be removed or altered without the prior approval of the Project Arboriculturist. Any damage to tree protection measures must be reported immediately.

Default Specification:

Fencing shall be constructed with robust vertical and horizontal scaffold framework with weldmesh panels firmly attached in accordance with BS 5837:2012 Figure 2. Vertical support poles and bracing poles must be located with care to avoid underground utility services and will be sited to avoid the structural roots of retained trees. Where driven supports are not feasible due to the presence of roots or underground utilities block trays, counterweights or equivalent can be utilised.

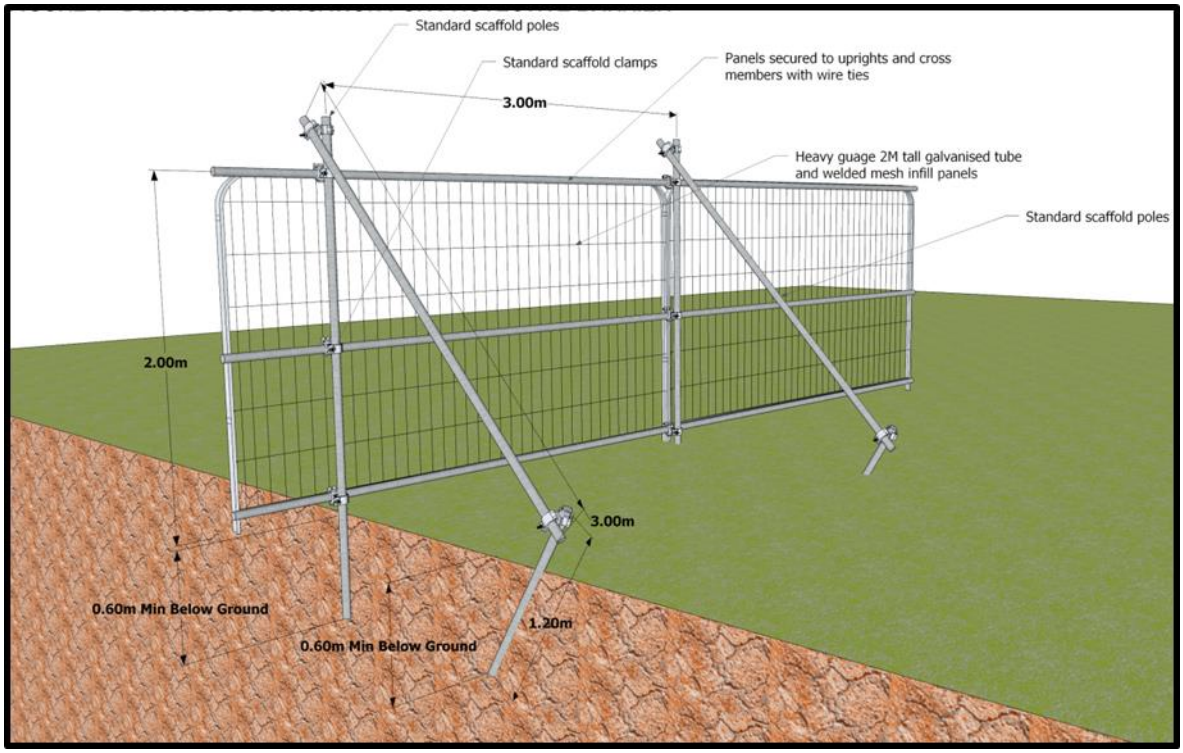

Figure 2 Default specification for tree protection barrier in accordance with BS5837:2012 figure 2.

Alternative equivalent robust and immovable fencing specification including site hoarding will also be appropriate.

Suitable all-weather signage will be fixed to fencing to notify site staff and visitors of the construction exclusion zone and its purpose.

Failure to fully respect the positioning of barriers and tree protection measures may result in the PA imposing a temporary stop notice or other enforcement action and is likely to require the use of a more onerous barrier specification and potentially expensive remedial works.

When entering and exiting the Site the fencing contractor must avoid the production of ruts on the unprotected surface of the ground.

Protective fencing and ground protection shall stay in place until all construction operations are completed and removal is agreed with the Project Arboriculturist.

Chestnut Paling stem/limb wrapping:

Where tree stem or the limbs of trees are at risk of damage (e.g. where plant is unavoidably operating in proximity) they will be protected with a double layer of hessian, carpet felt or equivalent cushioning material and a double layer of chestnut paling fencing or equivalent hardwood batons secured with wire which is to be wrapped around the stem or branch and must not be pinned or attached to the tree itself. Measures must be removed following completion of works.

C.9 Ground protection

Existing hard surfacing will act as fit for purpose ground protection where it is to be retained within the RPA of retained trees. For existing areas of unsurfaced ground within RPAs where construction access is unavoidable ground protection will be required to protect the structure of the soil from compaction. This should also apply to areas for new tree planting.

As set out in section 6.2.3.3 of BS5837:2012 the following ground protection measures will be appropriate:

- Suitable ground protection for pedestrian only access will comprise a single thickness of scaffold boards set on a compressible layer of 100mm of woodchip on a geotextile separation layer.
- Pedestrian operated plant up to two tonnes in weight would require the use of a proprietary ground protection system (such as Ground Guards, Eki mats, Eve Trakway or equivalent) set on a minimum depth of 150mm woodchip or sharp sand.
- Heavier loads will require ground protection to an engineering specification in conjunction with arboricultural advice.

As a guide the threshold beyond which root development is significantly affected is a bulk density ranging from 1.4g per cm^3 for clay soils, to 1.75g per cm^3 for sandy soils.

C.10 Carriageway widening into footways or verges

Where the carriageway is to be widened into the existing footway or verge within the RPA of a retained tree this must be supervised by the Project Arboriculturist. The outer extent of the required excavation (nearest to the tree) should be carefully excavated by hand to allow roots to be assessed and pruned as necessary. Exposed roots must be covered with hessian sacking or equivalent. The existing kerb edging and haunching can then be very carefully removed with an excavator working from the existing carriageway, reaching towards the tree and working backwards, reverting to working using hand tools in areas close to retained tree roots as required.

New edging must have the thinnest profile and extent of haunching possible and pinned alternatives will be applied where feasible. Backfill is to utilise the excavated parent material to replicate the original soil profile.

The subbase for replacement hard surfacing (where required) must be hand tamped only to prevent significant compaction of the underlying soil.

C.11 Footway or verge widening into existing carriageway

Where the footway is to be widened into the existing carriageway, the existing kerb will need to be carefully removed under arboricultural supervision. Kerb stones must be removed using hand tools including pneumatic breakers. Plant positioned on the carriageway can lift out kerb sections using slings. Haunching must be carefully broken out by hand. Any exposed roots must then be covered with soil or hessian to prevent drying out. There will be no constraint on new edging or haunching as it will sit within or above the existing build-up of the carriageway where no roots are present. Backfill must utilise good quality topsoil where the verge is being widened. Where the footway is being widened, the new section of the footway can be constructed using a standard methodology providing the subbase of the existing footway is retained intact and undisturbed.

C.12 Removal and/or replacement of an existing hard surface within an RPA

At the time of writing the full extent of resurfacing has not been fully determined, however there is a potential for extensive areas of resurfacing across the scheme. Where resurfacing is required within the RPA of a retained tree, the following principles will apply:

Replacement hard surfacing on top of existing surface:

Where possible the new hard surface is to be installed on top of the existing surface and the existing edging is to be retained intact.

Removal of existing surface (wearing course):

Before work commences, the Project Arboriculturist will assess the potential for significant roots immediately below the wearing course and in such areas, all works must be achieved by hand. The wearing course must be removed with hand tools (including a handheld pneumatic breaker where required). The existing surface must be 'rolled back' with contractors working from the existing hard surface and with pedestrian only access on the exposed subbase.

With the prior agreement of the Project Arboriculturist, it will be acceptable to use light tracked machinery such as a mini excavator with an untoothed bucket to assist with the removal of the existing surfacing where this can be achieved without damage to any significant roots beneath.

Machinery must work from existing hard surfacing only at all times. Where surface roots are obviously present (and at the junction between hard and soft ground surfacing is to be removed by hand only.

Restoring hard surfacing to soft ground:

Following the removal of the wearing course, the subbase is to be broken up using hand tools only via pedestrian only access. Materials must be removed using wheelbarrows, or, via hand loading of long reach machinery positioned on adjacent hard surfacing or ground protection. The subbase is to be rolled back. Following removal any low points or hollows are to be filled with sharp sand or gravel, and topsoil be applied to the required level which can then be seeded or turfed as required. This area must then be completely fenced off for the remainder of the development works or be otherwise protected with ground protection.

Installing replacement pedestrian or light vehicular hard surfacing on an existing subbase.

The subbase must be retained intact, ameliorated as required and utilised for the new surface. Levels are to be increased using inert granular fill by a maximum of 100mm. The subbase must be hand tamped only to prevent significant compaction of the underlying soil.

Exposed roots must be treated in accordance with the guidelines in Section C19 of this Method Statement.

Following the removal of existing hard surfacing the unprotected ground within RPAs must be immediately protected with protective fencing and or ground protection (where access is required) as set out in Section C9 to ensure that the structure of the soil and tree roots are protected.

Pedestrian only access onto the exposed and retained subbase will be acceptable to allow the installation of replacement hard surfacing. The new surface should be laid as quickly as possible.

Any exposed roots greater than 25mm in diameter must be assessed by the Project Arboriculturist. If roots which are to be retained are exposed at ground level these should be covered with a thin layer of sharp sand and adjacent levels built up around it. This layer must not be significantly compacted and hand-tamped only.

Installing replacement heavy vehicular hard surfacing on an existing subbase:

The subbase must be retained intact, ameliorated as required and utilised for the new surface. Exposed roots are unlikely to be encountered due to the heavily engineered subbase of the existing surface. Where encountered any roots must be treated in accordance with the guidelines in Section C19 of this Method Statement. The new surface must be rolled out working from the existing subbase only.

Surfacing operations are to be conducted solely from the existing footprint of the road. Access beyond the footprint will be restricted with tree protection barriers as necessary.

Edging:

Existing edging within the RPA of a retained tree will be retained intact and used as the edging for the new surface.

Where the removal of existing edging is unavoidable within an RPA this will be removed carefully by hand under the supervision of the Project Arboriculturist.

Plant positioned outside of the RPA or on existing hard surfacing within the RPA may reach in to assist in lifting edging out of its position using slings but must not be used to excavate around the edging unless otherwise agreed in advance with the Project Arboriculturist.

Where possible new edging must be installed without excavation using pinned alternatives. Where an excavated edge is unavoidable both the edging and any footing must have the narrowest profile possible. Where significant roots are present which cannot be pruned, reinforced sections of kerb acting as lintels to bridge important roots will be applied where possible.

C.13 Installation of new hard surfacing within RPAs

Very small areas of new hard surfacing in the outer RPA of a retained tree can be constructed using hand excavation supervised by the Project Arboriculturist. Due to the very small incursion within an RPA no specialist construction measures will be required. No roots greater than 25mm in diameter will be severed without the consent of the Project Arboriculturist. Where significant roots are encountered the methodology set out below will be applied to avoid root severance. The approach below will apply where any significant area of new surfacing is required within the RPA of a retained tree (as shown on the Tree Protection Plan).

Three-Dimensional Load Bearing Raft:

Construction of the significant areas of new footway or cycleway hard surfacing within the RPA of retained trees shall follow 'no dig' principles. The surface shall be engineer designed to meet the highest expected loads, including those used for the construction of the route.

A proprietary 3D cellular confinement system will be used to allow the hard surface to be installed without excavation within RPAs.

Work will preferably be carried out in dry conditions within the period of May to October when the ground is less liable to compaction.

Existing ground vegetation shall be treated with an approved herbicide such as glyphosate 2-3 weeks before construction takes place. Killed vegetation can then be subject to a maximum 50 mm vegetative scrape which must take place by hand. Any arisings shall be removed (if left in situ they could cause anaerobic conditions as they break down which could be detrimental to tree roots).

Any hollows must be filled with inert granular material such as sharp sand or washed no fines gravel. Builder's sand must not be used as this contains salts which are toxic to tree roots.

Any rocks, stumps (if present) or other protruding objects within the footprint of the load bearing surface must be removed. Stumps must be ground out below ground level. All other objects must be removed by hand.

A robust geotextile membrane must be laid out across the proposed area for the load bearing surface within the RPA. Joints must overlap by approx. 300 mm and be stapled together. This must be capable of resisting puncture by the angular stone fill, and also able to filter pollutants to prevent or reduce contamination of the soil. The load bearing surface is only required within the RPAs.

It is essential to consider the final levels of the load bearing surface which will typically be 75mm-100 mm in thickness for footway or cycleway applications plus the final wearing course (dependent on its application).

The final surface must be resistant to future growth of tree roots and also must be positioned to give a minimum clearance of 500mm from the base of a retained tree. The resulting gap can be filled with inert granular fill if required. A three-dimensional load bearing surface which allows the lateral and horizontal movement of air and water (e.g. Cellweb or equivalent), must be fully expanded and stapled together. This is to be laid on top of the geotextile layer. This surface must be able to support the greatest expected load the surface is likely to experience (including any construction traffic).

The load bearing surface shall be 'rolled out', with construction operations beginning from outside the RPA or from existing hard standing and progressing forwards using the new load bearing surface. The load bearing surface must be filled with 4/20, 20/20 or 20/40 washed angular stone.

Edging is not typically required to stabilise the load bearing surface and the edge of the surface. If edging is required, this must be installed without excavation within RPAs. Appropriate methods would include the use of treated wooden peg and boards.

Concrete kerb stones can be cast directly onto the web if required, however all uncured concrete must be fully contained with impermeable plastic sheeting and sandbags to prevent run off into the RPA of retained trees. The use, storage and mixing of concrete must comply with the provisions set out in section C19.

Where a road edge kerb must be installed by excavation, this must be of the thinnest possible profile, with the minimum extent of haunching feasible and all excavation work must be undertaken by hand with any roots managed under the guidance of the Project Arboriculturist. Alternative kerb construction may be required where significant roots are identified (such as using lintels or equivalent to bridge important roots).

The load bearing surface must have an even transition with adjacent hard surfacing or structures. This must be achieved outside of the RPA of all retained trees. Where this is not possible, structural soil or a mixture of topsoil and sharp sand can be employed to raise levels by up to 100mm. Where levels are to be raised in excess of this height the advice of the Project Arboriculturist must be obtained.

C.14 Demolition

Existing boundary walls, noise barriers, footbridges, lamp columns and other structures are to be demolished within or close to the RPA of retained trees. All demolition must be inward into the existing footprint of the structure or away from tree positions and be achieved by working backwards away from retained trees no arisings are to fall or be stored in unsurfaced or protected areas of tree RPAs.

All plant and machinery associated with the demolition process will be positioned outside of the RPA of retained trees or on existing hard surfacing or ground protection and must operate under the guidance of a banksman where they must operate within 5m of any part of a retained tree.

Existing footings are to be retained in situ where possible to minimise disturbance, where removal is unavoidable footings within RPAs must be broken out carefully by hand or where feasible via the careful use of plant positioned outside of RPAs or on ground protection/existing hard surfacing under the supervision of the Project Arboriculturist.

C.15 Construction of New Boundary Walls

New boundary walls are to be constructed within the RPA of retained trees (such as at the far west of the scheme adjacent to T0013-T0020). Where a new wall cannot avoid an RPA, specialist construction methods must be employed to prevent extensive root severance. Footings must utilise carefully located pads or narrow diameter piles with floating beams (at or above ground level) unless the presence of significant roots has been otherwise discounted following trail excavations under the supervision of the Project Arboriculturist.

Footings must be carefully positioned with hand dug (potentially using compressed air/soil vacuum) trial holes or trenches to identify optimal positioning to avoid significant roots.

Ground protection must be in place where repeated access is required over unsurfaced ground within an RPA.

C.16 Installation of Piles

Where new piles are to be installed within or close to the RPA or retained trees the canopy of the tree is to be pruned back before any construction work commences on Site to provide a clearance of the pile head to facilitate this work. For smaller piles, smaller plant or pedestrian installation only should be applied.

Piling rigs to be sited outside of the RPA or on ground protection within an RPA and protective fencing is to be installed to maintain an exclusion zone within as much of the RPA as possible.

The piling rig is to be positioned as far from the canopy and RPA of the tree as possible and reach inwards.

Piles will be the lowest diameter feasible. Where piles are to be installed within the RPA of a retained tree an initial trial hole will be excavated by hand to allow for the assessment and management of any exposed roots under the supervision of the Project Arboriculturist. Pile locations will be adjusted to avoid significant tree roots where feasible.

Pile caps within the RPA must be located above the existing ground level to minimise the level of disturbance. Beams must not bear on the existing ground level unless the presence of significant tree roots can be discounted following careful trial excavation.

C.17 Movement of Vehicles and People and the Movement and Operation of Machinery

Due to the spatial constraints on site, construction works and (in particular) the use of machinery must be carefully co-ordinated to avoid damage to retained trees. A banksman must be in place for any operations which occur within 5m of any part of a retained tree. Long reach machinery with jibs, booms or counterweights will require particular care.

Where trees are at risk of impact damage from plant that cannot be controlled with exclusion fencing or a careful working methodology, consideration must be given to any requirement for access facilitation pruning which must be agreed in advance with the Project Arboriculturist and tree owner (where appropriate).

C.18 Site organisation, storage and mixing of materials

The final locations for temporary site organisation and compounds will be agreed at the pre commencement site meeting with the Project Arboriculturist and will be confirmed in writing. Site compounds are proposed at the three locations shown on the Tree Protection Plan. The area of constraint associated with retained trees within or surrounding compounds will be fenced off as an exclusion zone at the outset.

The storage and mixing of materials and any re-fuelling shall take place at least 5m from the RPA of any retained trees and also take into account any potential for run off. Where this is an issue measures such as bunding with robust impermeable polythene sheeting and sandbags must be put in place to prevent accidental run off reaching the rooting zone of retained trees.

No changes in ground level are permitted within the RPA of a retained tree.

No fires shall take place within an RPA or within 5m of any part of a retained tree. No signs, cables or other items are to be attached to any part of a retained tree.

C.19 General principles for the management of tree roots

Where agreed excavation by hand tools or compressed air takes place within an RPA, the following principles will apply:

- Individual or small groups of roots less than 25 mm in diameter will be retained where possible but can be severed with a sharp tool such as secateurs or pruning saws to leave a clean cut end (ideally 100mm back from the face of the excavation to account for future regrowth) where they pose an obstruction.
- Where roots are encountered which are larger than 25 mm in diameter or where significant groups of smaller roots are found, the advice of the Project Arboriculturist must be sought to decide an appropriate course of action (following consultation with the PA where appropriate).
- Roots must only be exposed for the minimum period possible. In the interim period any exposed roots (including the face of any excavation within an RPA) must be completely covered with dampened hessian sacking (which may require ongoing re wetting) to avoid drying out and exposure to light. Backfill for excavations should ideally utilise the parent material and must not be significantly compacted.

C.20 Installation of new lamp columns, road signs and bus shelters

Where new features such as lamp columns, road signs or bus shelters are to be installed within the RPA of a retained tree, the final position of the feature must be adjusted to give the greatest clearance of adjacent tree stems possible and to reduce any conflict with tree branches or any requirement for pruning.

Footings must be excavated by hand or compressed air (e.g. air spade/soil vacuum) for at least the upper 0.5-1m and be adjusted to avoid significant tree roots. Footings must be the smallest dimensions feasible and utilise screw piles or equivalent where necessary. Any uncured concrete required must use the driest mix feasible and excavations must be lined with an impermeable liner to prevent uncured concrete leaching into the surrounding soil. Any cabling must be installed in accordance with the principles set out in C22.

C.21 Installation of new drainage within RPAs

Drainage has been designed to avoid the RPA of retained trees as fully as possible. Solutions such as surface channels, off set chambers positioned to avoid RPAs as fully as possible and hand excavated sections of piped filter drain positioned to avoid trees roots will be utilised to further reduce impacts on adjacent trees as appropriate. Where excavation for new drainage must take place within an RPA, the method of installation will be agreed in advance with the Project Arboriculturist and will typically involve the nearest area of excavation to the tree being completed by hand or equivalent to allow significant roots to be carefully exposed and pruned. Roots will be managed in accordance with the principles set out in Section C19.

C.22 Installation or diversion of utilities within RPAs

Utility diversion and new utilities have not been fully defined at this stage. The default position is that all services be located outside of the RPA of retained trees. In the context of this Site, it is not feasible to fully avoid the RPA of retained trees and therefore either trenchless installation below tree root systems or hand dug/compressed air excavation through RPAs where significant roots can be retained and worked around will be required.

Use of trenchless techniques:

Where services cannot avoid the RPA of retained trees, the primary consideration must be to install them using trenchless insertion techniques such as impact moling, direct drilling or equivalent.

Insertion and retrieval pits must be located outside of the RPA of retained trees. The depth of the run must be at least 2m below ground level and should be located as far from the tree as possible.

The mole must be lubricated with water only.

Installation must follow the principles set out in the National Joint Utilities Group (NJUG) Vol 4: Guidelines for the planning, installation, and maintenance of utility apparatus in proximity to trees (issue 2) and BS5837 Section 7.7 and Table 3.

Replacement pipes must be installed via pipe bursting, re lining or equivalent trenchless techniques where they are located within the RPA of a retained tree. Pipe bursting or relining equipment must be positioned outside of the RPA at all times.

Hand digging:

Where trenchless installation is not feasible, shallow utility runs can be installed via hand or compressed air/soil vacuum excavation. The excavation will be located as far from the stem of the tree as possible and must be carried out by hand (ideally using compressed air such as an Air Spade and soil vacuum) under the supervision of the Project Arboriculturist.

Pedestrian only access will be permitted and ground protection measures as set out in Section C9 will be employed where no hard surfacing is in place with fencing positioned immediately adjacent to restrict any further access into RPAs.

Excavation will be supervised by the Project Arboriculturist, who will be on hand to advise on the management of any roots encountered and to ensure the approved tree protection methodology is fully adhered to. Roots smaller than 25mm in diameter can be cut with a clean sharp tool where they pose an obstruction.

Should significant roots (larger than 25mm diameter or large clumps of smaller roots) be encountered, these will be retained and wrapped in dampened hessian to prevent drying out and pipes will be routed around them wherever possible. If significant roots are encountered which cannot be feasibly worked around and retained, the Project Arboriculturist will liaise with the PA to agree appropriate action.

Pipes must be constructed to resist future incursion by tree roots.

All spoil/arisings from excavation will be placed onto ground protection boards to prevent compaction, ground level changes and to assist in removal or reinstatement. Backfill is to utilise the excavated parent material where feasible, applied to restore the soil profile to its original structure (i.e. topsoil will be installed last) and must be lightly hand-tamped only

Services shall be installed following the principles set out in the National Joint Utilities Group (NJUG) Vol 4: Guidelines for the planning, installation, and maintenance of utility apparatus in proximity to trees (issue 2).

C.23 Redundant utilities

Where existing services are to be removed these must be winched out from an access/inspection chamber located outside of an RPA or left in situ.

Redundant pipe work will be sealed off and will not be removed via excavation within the RPA of a retained tree. Redundant pipe work can be filled with an inert material or if confirmed to be fully watertight may be filled with foamed concrete applied from an access point located outside the RPA of all retained trees. Concrete must be managed in accordance with section C18 of this Method Statement.

C.24 Dismantling of tree protection measures

All protective fencing and ground protection must remain in place until all significant site works for a given location have been completed and approval has been obtained from the Project Arboriculturist.

Appendix D Example Site Monitoring Form

Appointed Site Arboricultural Consultant: Company: Consultant's name: Tel: Mob:	
Development site address:	Planning Authority (PA):
Developer's details: Company: Developer's name: Tel:	

Stage of Development (x)

Pre-construction works		**Construction works**		**Post-construction works**			
Tree works	☐	Demolition	☐	Rectifying tree damage/pruning			☐
Protective fencing/tape	☐	Grading/muck away	☐	Hard landscaping/walls/drives			☐
Fencing signage	☐	Placing portacabin	☐	Removal of protective fencing etc			☐
Ground protection	☐	Excavation/services	☐	Soft landscaping			☐
Temporary haul road	☐	Construction work	☐	Special surfacing	☐	Tree planting	☐

Comments:

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