Cottam Parkway Railway Station

Arboricultural Impact Assessment Report

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Lancashire County Council

5932

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Contents

Executive Summary

This executive summary is based upon the design information supplied at the time of writing this report.

- Due to the design associated with the scheme, it is expected approximately 28% of all features surveyed will require either total or partial removal. An additional 20% of features have been identified as encroached with retention potential and a remaining 52% of features surveyed are considered not impacted by the scheme, therefore the arboricultural impact is considered to be moderate significance.
- It is recommended that the appointed contractor submit a Site-Specific Arboricultural Method Statement (SS-AMS) as part of the tendering process to detail how they will protect existing trees within temporary working areas, as well as detailing their construction techniques to be used where construction activity is to occur within an RPA (Root Protection Area). The SS-AMS should be submitted in conjunction with a Tree Protection Plan.
- It is recommended that a competent arboriculturist is present during any works that occur within an RPA of a retained tree. The arboriculturist will ensure the AMS is being followed and provide further guidance to contractors on tree related issues.
- A Tree Preservation Order (TPO) check has been conducted. No TPOs shown on Preston City Council interactive map appear within the Site Boundary, however multiple TPOs are present in the neighbouring land immediately east of Lea Road. TPO numbers are listed as TPO/2009/0016, TPO/2008/0002, TPO/2000/0001. These trees are not within the Site Boundary but are located approximately 20 metres from its eastern edge. Therefore, their presence should be noted.
- The Ancient Tree Inventory (Woodland Trust, 2012) was checked for the presence of verified veteran/ancient trees. No trees within the schemes Site Boundary appeared within this inventory.

1. Introduction

1.1 Purpose of Report

Jacobs UK Ltd. (Jacobs) were commissioned by Lancashire County Council (LCC) to undertake a tree survey and provide an Arboricultural Impact Assessment (AIA) report for the Cottam Parkway Railway Station (hereafter known as the Scheme). The AIA has been produced with reference to 'BS5837:2012 – Trees in relation to design, demolition and construction – Recommendations' (BSI, 2012).

The requirements of the survey were to:

- record information about trees within proximity to the Scheme;
- assess the potential impact on those trees likely to be affected by the Scheme, including potential tree loss; and
- provide recommendations where tree protection measures may be required for retained trees.

1.2 The Scheme

LCC is applying for planning permission for the construction of a railway station, known as 'Cottam Parkway'. The railway station would be sited on the Preston to Fylde junction to Blackpool North Line in northwest Preston.

Cottam Parkway was considered as part of the Central Lancashire Transport Masterplan, which represents a plan to deliver the infrastructure required for major housing and employment growth in northwest Preston.

The station is to be sited adjacent to the Preston Western Distributor Road (PWDR) which links directly to the M55 and is currently being constructed.

The development would include: a station platform, ticket office building, associated structures (such as cycle parking, signage and barriers), footbridge over the railway, a 250-space car park (with passive provision to expand), an access road, a road bridge crossing over the canal as well as associated earthworks.

The Site Boundary and the Scheme design is shown in Appendix G (Tree Constraints Plan) and H (Tree Removals Plan).

1.3 Methodology and Scope

The tree survey was conducted in line with the methodology detailed within BS 5837:2012 (BSI, 2012) and involved the surveying of trees as individuals or groups of trees within the Site Boundary supplied by LCC. The information collected and methodology used is summarised in Appendix A (Tree Survey Methodology).

Trees are reported as individuals or groups. Tree locations were determined on site using a combination of aerial imagery and Global Position System (GPS).

Trees were categorised using BS 5837 (BSI, 2012) into four categories (A, B, C, U) and for trees in categories A-C, they also qualified under three subcategories (1, 2, 3). A summary of this classification can be seen in Appendix D.

The survey data is shown in Appendix F (Tree Survey Schedule) and was used to produce a Tree Constraints Plan (TCP) in Appendix G, which depicts the existing rooting area and canopy constraints posed by the trees within the Site Boundary.

The Tree Constraints Plan was used in conjunction with the Scheme design, to inform the AIA and the Tree Removals Plan in Appendix H.

There are no published criteria, guidance or methodologies for the assessment of effects of development on forestry, trees or woodland, therefore this assessment has been based upon professional judgment of the arboriculturist and the criteria contained within the Environmental Impact Assessment for Forestry Projects (Forestry Commission, 2019). More information pertaining to this can be found in Section 5.

1.4 Limitations and Assumptions

Limitations to the tree survey and AIA include the following key points:

- Indicative Root Protection Areas (RPAs) have been calculated for tree groups based on the maximum stem diameter taken for each group.
- No data for individual trees within surveyed groups was recorded. An exception to this is when a tree was deemed notable within a group.
- Crown height and first branch height and direction was not recorded for groups. This is more appropriate at detailed design stage.
- Where access was restricted due to areas of dense vegetation, roadside verges and / or localised flooding, tree measurement data has been estimated. This has been indicated within the Tree Survey Schedule (Appendix F) with the use of an '#' next to the tree number.
- The health and condition of trees can change rapidly and all trees, even healthy ones, are at risk from unpredictable climatic and man-made events. This report is based on the observed health and structural condition of the trees at the time of survey by suitably qualified inspectors. The health, condition and safety of trees should be checked on a basis commensurate with the level of risk and preferably on an annual basis, as recommended in Common Sense Risk Management of Trees (National Tree Safety Group, 2011). The tree survey conducted for this report is not a tree health and safety survey and should not be used as such.
- Plotting the location of trees is based predominantly on using a GPS active mapping system. The location is displayed on a tablet layered on top of OS data and aerial photography. GPS is considered accurate to a location within a 5m accuracy at best.
- An RPA provides a notional circular buffer around a given stem based on the stem diameter taken at 1.5m. However, this is not necessarily representative of a tree root system e.g. the roots may extend beyond the RPA boundary on one side and remain inside it on the opposite. The root network extent is dependent on many factors including species, age, soil conditions, topography and exposure etc. The assessment has taken consideration of these above factors together with root morphology and observations of buttress root formation.
- This document is prepared as an AIA to represent the impact on trees of the Scheme. However, actual impacts on trees will not be fully known until a detailed design is proposed and mitigation is applied on site. This assessment is indicative and the results of which largely depend on the contractor's assumed working methods. Using this document as reference, the contractor(s) ideally shall re-assess the features on site and deliver site-specific mitigation as detailed in Section 5 (Conclusion and Recommendations) to ensure appropriate tree protection.

2. Site Observations and the Tree Survey

2.1 Site Location

The site boundary is located on various land parcels either side of Sidgreaves Lane, Preston. To the north is the village of Salwick, to the east Ingol, to the south and west is Lea. The site is intersected by the Lancaster Canal. The surveys were conducted in September 2020 by Jacobs by two suitably qualified arboriculturists.

2.2 Site Observations

The land parcels surveyed are predominantly livestock fields, separated either by hedgerows or watercourses running in / out of the Lancaster Canal. Part of the Ashton and Lea Golf Club was also surveyed as well as the boundaries of the existing PWDR construction site.

2.3 Tree Preservation Orders

A Tree Preservation Order (TPO) check was conducted using the interactive map found on the Preston City Council website (Preston City Council, undated) on 13th October 2021 to identify the presence of TPOs within the Scheme extents. No TPOs listed on this interactive map appear within the Site Boundary. Multiple TPOs are present in the neighbouring land immediately east of Lea Road: TPO/2009/0016, TPO/2008/0002 and TPO/2000/0001. These trees are not within the Scheme extents but are located approximately 20 metres from its eastern edge. Therefore, their presence should be noted.

2.4 Ancient and Veteran Trees

The Ancient Tree Inventory (Woodland Trust, 2021) was checked on 13th October 2021 for the presence of verified veteran / ancient trees within the survey area. The National Planning Policy Framework (Ministry of Housing, Communities & Local Government, 2021) (NPPF) refers to veteran trees as "*irreplaceable habitat*" which due to their "*age, size and condition, is of exceptional biodiversity, cultural or heritage value*". No trees within the Site Boundary appeared within this inventory.

2.5 Tree Survey Results and Plans

Table 1 shows the total number of trees surveyed and their relative grading categories.

Table 1: Grading and amounts of arboricultural features included in the survey

BS5837:2012 grades	Trees	Tree Groups	Hedges	SUB TOTALS
A	3	0	0	**3**
B	69	19	1	**89**
C	26	21	26	**73**
U	3	0	0	**3**
SUB TOTALS	**101**	**40**	**27**	**168**

- 'A' grade trees are of high quality and value and should be retained.
- 'B' grade trees are of moderate quality and value and should be considered for retention where possible, although care should be taken to avoid misplaced retention. Any scheme should consider the retention and protection of trees, but also the tree's future growth.
- The 'C' grade trees are of low quality and value and should not place a constraint on the proposals.

- From an arboricultural point of view, the 'U' grade trees cannot realistically be considered for retention as a living tree in the context of the current land use due to their low life expectancy of less than 10 years in their current poor condition.

3. Arboricultural Impact Assessment

An assessment of impacts was made using the Tree Constraints Plan (Appendix G) and the Scheme design footprint. Tables 2-4 display the results from the AIA, showing which individual trees, tree groups and hedges are considered likely to be affected by the current Scheme design.

A Tree Removals Plan is shown in Appendix H.

The 'Partial Removal' impact relates only to groups of trees and hedgerows requiring only some of the feature to be removed to facilitate the Scheme.

The 'Encroached' impact relates to trees that can be retained during and after the implementation of the design proposals but may require protection / mitigation measures to be employed prior to the construction phase of the Scheme. Trees located within the 'Temporary Working Areas' as shown in the Tree Removals Plan (Appendix H) have been assessed as encroached in this AIA.

Table 2: Individually surveyed tree impacts (AIA Results)

BS5837:2012 Grades	Removals	Encroached	No Impacts	SUB TOTALS
A	0	1	2	**3**
B	21	19	29	**69**
C	4	3	19	**26**
U	0	1	2	**3**
SUB TOTALS	**25**	**24**	**52**	**101**

Table 3: Surveyed tree group impacts (AIA Results)

BS5837:2012 Grades	Removals	Partial Removal	Encroached	No Impacts	SUB TOTALS
B	2	2	5	10	**19**
C	3	4	3	11	**20**
SUB TOTALS	**5**	**6**	**8**	**21**	**40**

Table 4: Surveyed hedge impacts (AIA Results)

BS5837:2012 Grades	Removals	Partial Removal	Encroached	No Impacts	SUB TOTALS
B	0	1	0	0	**1**
C	6	3	3	14	**26**
SUB TOTALS	**6**	**4**	**3**	**14**	**27**

3.1 General Recommendations

It is the view of Jacobs arboriculturists that trees reported as encroached are viable for retention if provided with adequate protection prior to and / or during construction. To ensure these trees are protected, it is recommended that contractors should submit a Site Specific Arboricultural Method Statement (SS-AMS) detailing how they intend to protect those trees within temporary working areas as part of the tendering process.

The Scheme also houses a single high and multiple moderate grade features that will be encroached by the construction work. This is most common in the vicinity of the railway station car park. It is the understanding of Jacobs arboriculturists that efforts have been made in the early stage of design to move the position of the car park north to reduce the encroachment. Specialist construction techniques should be used in the construction of this car park to limit the impacts on existing high and moderate grade trees. As above, it is recommended that as part of the tendering process contractors should submit a SS-AMS detailing their construction techniques for areas where RPAs are encroached by the works. Works in this area should also be supervised by a competent arboriculturist.

Please refer to Section 4.3 for more information regarding the SS-AMS.

Allowances should be made for site visits both during and post construction. Visits during construction would ensure the protection of trees is consistent with the submitted method statement, this should occur on a quarterly basis. Once construction is complete it recommended that those trees encroached by the Scheme are monitored. These visits should occur for four years on a yearly basis, with each visit being conducted during a different season so that any structural and / or physiology defects are identified.

4. Discussion

4.1 Tree Removals

No high value A grade features have been assessed for removal at this stage, however it is anticipated that approximately 26% of surveyed B grade features are to be removed to accommodate the Scheme. A portion of these is explored below.

Image 1: Tree T009

T009 (Image 1) is recorded as an early mature roadside oak set within the existing hedge line. This has been assessed as removed as it sits directly under the highway footprint.

Image 2: Tree T063

T063 (Image 2) is recorded as a mature oak tree, this tree has been assessed for removal as it currently sits under the railway station car park design, and associated access road footprint.

4.2 Tree Encroachment

As discussed previously multiple trees have been identified as encroached by the Scheme. A selection of these are discussed as follows:

Image 3: Tree T057

T057 (Image 3) is recorded as a B grade mature oak tree. Located in an agricultural field, this tree has been assessed as encroached as it sits within the 'Temporary Working Area'. As this area is temporary, it is viable that this tree could be retained. However, retention will only be possible provided that protective measures are put in place to protect this tree (and others listed as encroached within this report). This should require the contactor to submit a SS-AMS and associated Tree Protection Plan prior to works commencing which should reduce the likelihood of direct / indirect impacts to these features.

Image 4: Tree T018

T018 (Image 4) is a lapsed hornbeam coppice located adjacent to the public footpath that runs along the existing public right of way between Lea Road and Sidgreaves Lane. This high value tree has an RPA of approximately 12 metres, and as such is encroached on its northern margin by the railway station design. As mentioned above, it is the understanding of Jacobs arboriculturists that efforts have been made to move the position of the car park further north to reduce the encroachment. It is recommended that the appointed contractor submits a SS-AMS to indicate how construction will consider this existing tree.

4.3 Emergency Access

Due to the emergency access requirement identified to the south of the existing rail line, multiple B and C grade groups will be either partially or completely removed to facilitate this requirement. Access to this area was limited during the survey due to dense vegetation and limitations on accessing network rail land.

4.4 Site-Specific Arboricultural Method Statement

The submission of a SS-AMS by the contractor has been recommended within this report in the interest of protecting those trees assessed as encroached. Specifications within the submitted SS-AMS should include but are not limited to the following:

- Location of protective fencing to protect retained features.;
- Specification of protective fencing;
- Specification of ground protection to prevent root asphyxiation and/or direct damage to roots;
- Construction Exclusion Zones;
- Facilitation pruning (if appropriate) and
- Incorporation of a cellular confinement system to be installed using 'no dig' construction techniques, where design encroaches RPA's.

Additional information that can be used to inform the SS-AMS can be found within the Preliminary Arboricultural Method Statement in Appendix B.

5. Significance of Impact

5.1.1 Method

A BS5837 arboricultural impact assessment has been carried out for trees present across the Site. This methodology evaluates the direct and indirect effects of the Proposed Development and where necessary recommends mitigation.

BS5837:2012 is the accepted standard for the management of trees on development sites. The standard offers advice on the assessment of impacts of a scheme on trees, based on a tree survey carried out to the same BS5837 specifications. However, the standard gives no guidance on the assessment of the significance of any arboricultural impact.

To ensure clarity and consistency Jacobs has adopted a similar approach to evaluating impacts on the arboricultural resource present on site as would be used in undertaking an Environmental Impact Assessment (EIA). The methodology used assesses the sensitivity of the receptor and the magnitude of change to give a significance of any affect.

There are no published criteria, guidance or methodologies for the assessment of effects of development on forestry, trees or woodland. The Forestry Commission published 'Environmental Impact Assessment for Forestry Projects' in February 2019 however this is concerned with forestry operations and is not relevant to trees on development sites. As a result, the assessment of effects is based on professional judgement, with reference to:

- The sensitivity of the tree population present in the study area taking account of the degree and rate of change in the tree population, both in the recent past and that anticipated in the near future, and therefore the susceptibility/vulnerability of the tree population to change; the quality of the tree population (based on the categorisation method outline in BS5837:2012 broadly based on amenity value and useful life expectancy) and the extent to which it is rare or distinctive, the value attributed to the tree population through designations;
- Magnitude of change and extent of tree removal, impact of proposed development on retained trees and impact of any required tree work;
- Duration and reversibility - timescale of effect (days/weeks/months/years) until recovery. Permanent effects are described as such, and likelihood of recovery (the ability of the feature to recover form any construction damage, determined by professional judgement) is detailed where appropriate; and
- Adverse/beneficial - if the effect will be beneficial or detrimental to the feature.

The definitions of sensitivity, magnitude of change and the significance matrix are presented in Tables 5 to 7.

The effect of tree removal is normally considered to be of an adverse nature; however indirect beneficial effects in some areas may arise where the introduction of a proposed development allows for the removal of ecologically habitat-poor or discretionary trees. This may be followed up by detailed landscape masterplans, ecological and woodland management plans or schemes of compensatory planting to replace lost trees with more beneficial individuals.

Table 5-Definitions of Sensitivity Levels of Trees/Woodland/Forestry

Value	Definition
Very High	- Receptor has little or no ability to absorb change without altering its present character, is of very high environmental value (supporting large population of European protected species), or of international importance (red data list species). - Predominantly A category trees - Tree species which have no tolerance to disturbance or pruning
High	- Highly valued, subject of national designation e.g. Ancient Woodland Category, veteran and heritage trees

Value	Definition
	- Memorial trees planted by the community to commemorate specific events or people (depending on tree's age and condition) - Particularly rare or distinctive in a national context (such as registered parklands or major memorial plantings); or - Considered susceptible to low levels of disturbance and pruning. - Mainly A category trees
Medium	- Valued more locally, subject to local designation; - Memorial trees planted by the community to commemorate specific events or people (depending on trees age and condition) - Mainly B and C category trees - Rare or distinctive in a regional context; and/or - Are tolerant of medium levels of pruning and disturbance
Low	- Generally, more commonplace, not designated; - Mainly C category trees - Considered potentially tolerant of noticeable change; or - Undergoing substantial modification/physiological change such that their character is one of change. - Resilient tree species which respond well to pruning or are tolerant of root damage/disturbance
Negligible	- Low quality, insignificant trees, mainly C and U category - Considered tolerant of noticeable change; or - Trees affected by pest, disease or other forms of damage, with very limited useful life expectancy

Table 6-Definitions of Magnitude of Change Levels

Magnitude	Definition
High	A noticeable change to the tree population over a wide area or an intensive change over a limited area or (for an individual) significant canopy pruning or root loss (pruning beyond guidance given in BS3998:2010 or root damage beyond guidance given in BS5837:2012).
Medium	Small changes to the tree population over a wide area or noticeable change over a limited area or (for an individual) pruning up to the maximum suggested in BS3998:2010.
Low	Very small changes to the tree population over a wide area or small changes over a limited area or (for an individual) small levels of pruning to an individual tree or minor impact on rhizosphere.
Negligible	No discernible change to the tree population or individuals

Table 7-Framework for Assessment of the Significance of Effect

Magnitude of Change	Sensitivity of Receptor				
	Very High	**High**	**Medium**	**Low**	**Negligible**
High	Major	Major	Moderate	Moderate	Minor
Medium	Major	Moderate	Moderate	Minor	Negligible
Low	Moderate	Moderate	Minor	Negligible	Negligible

Negligible	Minor	Minor	Negligible	Negligible	Negligible

5.1.2 Discussion and Conclusion of Significance

The sensitivity of the tree population within the survey area is considered to be of medium value. No Category A trees have been assessed for removal, however a total of 23 Category B trees and groups have been assessed for removal or partial removal, and a total of 13 Category C trees and groups assessed for removal. This will result in a noticeable change in tree population over a limited area, in this instance within the Site Boundary. Therefore, the Scheme has been assessed as having moderate adverse impact to the area's tree population. With a suitably robust and well maintained replanting scheme the impact would be medium term, as large trees take a significant time to replace with young planting.

6. Conclusions and Recommendations

The Scheme would result in either the total, or partial removal of approximately 28% of all features surveyed. An additional 20% of features have been identified as encroached with retention potential and a remaining 52% of features surveyed are considered not impacted by the Scheme, therefore the arboricultural impact is considered to be of moderate adverse significance.

It is acknowledged that potential impacts are likely to change during detailed design and this AIA should be updated with this information when known. Opportunities to retain trees at later stages of design should be fully explored. Consideration should be given to established trees of mature (or above) age class together with trees offering screening.

It is recommended that, in consideration of this AIA and the Tree Constraints Plan (Appendix G) and Tree Removals Plan (Appendix H), the appointed contractor submit a Site-Specific Arboricultural Method Statement (AMS) as part of the tendering process to detail how they will protect existing trees within temporary working areas, as well as detailing their construction techniques to be used where construction activity is to occur within an RPA. The contractor should only remove trees that are absolutely necessary to facilitate the Scheme, as shown on the Tree Removals Plan (Appendix H).

A competent arboriculturist should be present on site at suitable times to monitor the adoption of the AMS and ensure the appropriate protection of trees.

Additional visits are recommended post construction to identify any physiological and/or structural defect that may have been caused by the works. This should occur on a yearly basis for four years, with each visit being conducted during a different season.

6.1 Arboricultural Action Required - Next Steps

Table 8 lists the standard elements, as referenced in BS 5837:2012 (BSI, 2012), recommended to satisfy planning concerns for this Scheme and to ensure appropriate tree protection is considered and applied throughout the duration of the works.

Table 8: Follow up Arboricultural input relating to this scheme

Recommended arboricultural input	Purpose	Timing
Re-assessment of impacts to trees during detailed design and once construction information is available.	Technical advice provided during the detailed design phase to avoid tree impacts.	Following any major design changes or advance works design development.
Site specific Arboricultural Method Statement (AMS)	Work information package designed to provide contractors with details on how specific operations need to be performed to protect trees including use of ground protection.	Following final design agreement and usually as a part of planning conditions. Produced by the contractor for review by the client and/or Local Planning Authority following agreement.
Tree Protection Plan	Provide schematic details of how protective fencing shall be installed and any other pre-planned targeted tree protection.	Following final design agreement in conjunction with the site-specific AMS
AIA revisions	Further detail of impacts on key areas. OR	Following any change in the design. The process could be either desktop based or require further

Recommended arboricultural input	Purpose	Timing
	Whenever a design change/addition is finalised or proposed.	site visits, depending on the scope of the original survey.
On site monitoring	To ensure protection measures and the method statement are being implemented correctly.	At agreed intervals before and during the construction phase of the project.

It is recommended to maintain contact with the project arboriculturist throughout the planning and design stage for the relevant additional input to be addressed at the appropriate point.

Impacts to the trees, as outlined within this AIA report, could alter with any changes to the current design proposals. Tree impacts should therefore be reviewed as the design process progresses with all relevant parties informed of the changes, where appropriate.

7. Legal Considerations

Prior to the removal of the trees or groups listed in this report, or any tree surgery works being undertaken, it is essential that the trees are assessed again for legal protected status. These include TPOs and Conservation Areas (CA), Sites of Special Scientific Interest, locally or nationally designated sites, designed landscapes and ancient woodland.

Works (either above or below ground) to trees protected by TPO or CA is an offence under the Town and Country Planning Act 1990 (as amended), and in the Town and Country Planning (Tree Preservation) (England) Regulations 2012 and Section 192 of the Planning Act 2008.

Bats are afforded special protection by law. If a roost is discovered, all work in the vicinity should cease immediately and the appropriate authorities informed (Natural England). Roosts need to be inspected by a project Ecologist before work can recommence.

Under the Wildlife and Countryside Act 1981 (as amended) it is an offence to take, disturb or destroy the nest or eggs of any wild bird during its breeding season.

8. References

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Appendix A. **Survey Methodology**

Table A.1: Methodology

Parameters Recorded	**Collection Methodology**
Tree location	Handheld tablet with GPS functionality.
Crown spread, clearance and first branch break/direction	Metres estimated from ground level
Height and diameter	Clinometer and diameter tape at 1.5 meters above ground
Structural and physiological condition	External visual tree assessment (from the ground) – The Body Language of Trees, Research for Amenity Trees No 4 (Mattheck and Breloer, 1994)
Root Protection Area (RPA)	Calculation method in BS 5837 (BSI, 2012)

Appendix B. **Preliminary Generic Arboricultural Method Statement**

Trees to be retained should be adequately protected by stout fencing, 'fit for purpose' and preferably as prescribed in BS 5837:2012 (BSI, 2012), section 6.2. This would provide an adequate Root Protection Area (RPA)/Construction Exclusion Zone that would allow its successful retention during and after the proposed works. All fencing barriers should be secured using above ground stabilising techniques.

Areas of retained hard surfacing would act as sufficient protection for RPAs beneath and require no additional level of exclusion. Any soft ground within RPA areas should be suitably protected as described in section 64.2.3 of BS 5837:2012 (BSI, 2012).

All excavation work within RPAs during construction must proceed with caution with hand tools only. Tree roots should be protected for the duration of the works period. In the event roots over 25mm diameter are exposed, excavation works would cease immediately and the appointed arboriculturist contacted.

Should roots between 10-25mm in diameter be encountered, these would be retained undamaged wherever possible, and protected from desiccation/frost by damp hessian sacking or a similar protective material until the excavation is back filled. Roots below 10mm in diameter may be trimmed back neatly in line with the edge of the excavation trench using secateurs.

Tree stems and buttress roots should be protected when proposed works are located within 1.5m of the main stem. Ideally the entire stem would be protected by robust solid timber boards forming a rigid structure. In the event a continuous rigid frame cannot be achieved, solid boards should be utilised to provide sufficient stem protection for the duration of the works.

The delivery, storage, mixing and discharge of concrete and all other cement-based materials shall be carried out so that there is no run-off and spillage near the RPAs of retained trees. No substances that are potentially injurious to plant tissue (including diesel, bitumen, concrete, mortar and other phyto-toxic materials) shall be stored, discharged, prepared or used, where direct contact, infiltration or run-off might reasonably be considered liable to harmfully affect existing root growth or other parts of retained trees. Where chemicals are stored, it is now standard practice to have emergency spillage kits available to minimise the impacts of any accidental spillages to the local environment. All cement mixing, vehicle washing or any other activity where toxic chemicals are used shall have the provision to contain any accidental spillage. This can be achieved using suitable soil bunding or using a supporting timber framework sealed with heavy duty plastic sheeting.

In the event any tree canopy pruning is required to facilitate the works these are to be undertaken by qualified and competent staff working to BS 3998:2010 Tree work – Recommendations (BSI, 2010). The Local Planning Authority would be notified of any tree pruning required to enable the works to proceed prior to the pruning occurring.

Appendix C. **Comprehensive Glossary of Arboricultural Terms**

AIA: Arboricultural Impact Assessment.

AMS: Arboricultural Method Statement.

Ancient tree: An ancient tree is exceptionally valuable attributed with great age/size/cultural heritage/biodiversity value as a result of significant wood decay and the habitat created from the ageing process. All ancient trees are veteran trees with very few trees of any species reaching the ancient life-stage.

Bark: A term usually applied to all the tissues of a woody plant lying outside the vascular cambium.

Buttress zone: The region at the base of a tree where the major lateral roots join the stem, with buttress-like formations on the upper side of their junction.

Canker: A lesion formed by the death of bark and cambium often due to fungal or bacterial infection.

Condition: An indication of the physiological vitality of the tree. Where the term 'condition' is used in a report, it should not be taken as an indication of the stability of the tree.

Conservation Area: A designated area that requires notice (currently six weeks) to be given to the local planning authority prior to the commencement of any tree works.

Construction exclusion zone: Area based on the Root Protection Area (in square metres) to be protected during development, by the use of barriers and/or ground protection.

Crown/Canopy: The main foliage bearing section of the tree.

Crown lifting: A term used to describe the removal of limbs and small branches to a specified height above ground level.

Deadwood: Branch or stem wood bearing no live tissues. Retention of deadwood provides valuable habitat for a wide range of species and seldom represents a threat to the health of the tree. Removal of deadwood can result in the ingress of decay to otherwise sound tissues and climbing operations to access deadwood can cause significant damage to a tree. Removal of deadwood is generally recommended only where it represents an unacceptable level of hazard.

Dieback: The death of parts of a woody plant, starting at shoot-tips or root-tips.

Diameter at Breast Height (DBH): Stem diameter measured at a height of 1.5 metres (UK) or the nearest measurable point. Where measurement at a height of 1.5 metres is not possible, another height may be specified.

Feature: Collective term covering trees, groups of trees and hedgerows.

Habit: The overall growth characteristics, shape of the tree and branch structure.

Hazard beam: An upwardly curved part of a tree in which strong internal stresses may occur without being reduced by adaptive growth; prone to longitudinal splitting.

Minor deadwood: Dead wood of a diameter less than 25mm and or unlikely to cause significant harm or damage upon impact with a target beneath the tree.

Notable: Notable trees are usually mature trees which may stand out in the local environment because they are large in comparison with other trees around them

Pollarding: is the removal of the tree canopy, back to the stem or primary branches. Pollarding may involve the removal of the entire canopy in one operation or may be phased over several years. The period of safe retention of trees having been pollarded varies with species and individuals. It is usually necessary to re-pollard on a regular basis, annually in the case of some species.

Primary branch: A major branch, generally having a basal diameter greater than 0.25 x stem diameter.

Pruning: The removal or cutting back of twigs or branches, sometimes applied to twigs or small branches only, but often used to describe most activities involving the cutting of trees or shrubs.

Root protection area (RPA): An area of ground surrounding a tree that contains sufficient rooting volume to ensure the tree's survival, calculated with reference to Table 2 of BS5837 (2005).

Snag/stub: In woody plants, a portion of a cut or broken stem, branch or root which extends beyond any growing-point or dormant bud; a snag usually tends to die back to the nearest growing point.

Stem/s: The main supporting structure/s, from ground level up to the first major division into branches.

Topping: In arboriculture it is the removal of the crown of a tree, or of a major proportion of it.

Tree Preservation Order (TPO): Is an order made by the local authority and placed upon individual trees, groups of trees or areas of trees. The local authority must usually grant permission prior to any works undertaken to affected trees.

Veteran tree: A loosely defined term for an old specimen that is of interest biologically, culturally or aesthetically because of its age, size or condition and which has usually lived longer than the typical upper age range for the species concerned.

Appendix D. **Cascade Chart of Tree Quality Assessment (taken from BS 5837:2012)**

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

Appendix E. **Tree Survey Schedule Key**

Column Header	Explanation
Tree ID	T – Tree G – Group/Hedgerow/Woodland H- Hedgerow
Diameter at breast height (DBH)	Tree stem diameter measured at 1.5m from the ground. This reported figure relates to either single stemmed trees or the calculated DBH for multi-stemmed trees. In some instances, DBH will be taken from a different height as specified in 'Observations'.
Canopy spread – N E S W	Canopy extents from main stem of individual tree will be shown using cardinal points in metres i.e. N (north) 7, E (east) 6, S (south) 5, W (west)7. Single largest canopy extent reported for groups/woodland/hedgerows.
Height of first significant branch and direction of growth	To inform on ground clearance.
Age Class	Young (Y) – A tree in the first quarter of its life span. Semi Mature (SM) – A tree in the latter stages of its first quarter, well established. Early Mature (EM) – A tree halfway through its life span, significant further growth potential. Mature (M) – A tree at or near its potential maximum size which is still growing vigorously in its third quarter of life span. Over Mature (OM) – A tree in decline in its final quarter of life span. Potential Veteran (V) – A tree which, because of its age, size, and condition, is of exceptional biodiversity, cultural or heritage value
Structural condition (S)	Good (G) - No signs of decay or structural weakness. Fair (F) - Minor defects not causing structural weakness. Poor (P) - Severe decay in the main stem or branches/structurally weak.
Physiological condition (P)	Good (G) - Showing no adverse risk of failure/defects. Fair (F) - Showing minor signs of deterioration. Poor (P) - Unlikely to recover to a good condition.
Estimated Remaining Contribution (ERC)	<10 - Less than 10 years of normal life expectancy remaining. 10+ - Between 10 and 20 years of normal life expectancy remaining. 20+ - Between 20 and 40 years of normal life expectancy remaining.

	40+ - Tree would normally expect to live for more than 40 more years.
Root Protection Area (RPA)	Root Protection Area dimensions as calculated using formulae in BS5837:2012. Applied as either radially from an individual tree stem (individually surveyed trees) or as an offset from the canopy extents of a collective feature (tree group, hedgerow, or woodland).
AIA	R - Remove P – Partial removal E - Encroached RPA/canopy N - No impact

Appendix F. **Tree Survey Schedule**

Table F.1: Full results of tree survey

Tree Reference Number	Bat Tree Reference Number	Species	Height (m)	DBH (mm)	Canopy spread				First Branch Height and Direction	Age Class	Struc-tural Cond.	Physio-logical Cond.	General Observations and Comments	ERC	Category Grading	RPA Radius (m)	AIA (R, P, E, N)
					N	E	S	W									
T001#	-	Oak	15	590	6	6	6	5	3N	SM	Fair	Fair	In hedge line	20+	B2	7.1	R
T002#	-	Oak	16	720	6	8	6	6	3S	M	Fair	Fair	In hedge line prolific ivy	20+	B2	8.6	R
T003#	-	Oak	16	580	6	8	6	6	3S	M	Fair	Fair	In hedge line prolific ivy	20+	B2	7.0	R
T004#	T45	Oak	20	800	8	10	10	8	4N	M	Fair	Fair	In headline prolific ivy major dead wood. Abiotic damage. Open canopy. Tip dieback	20+	B2	9.6	R
T005	-	Hawthorn	9	420	4	1	4	4	1S	EM	Fair	Fair	Prolific ivy on access gate to canal	10+	C2	5.0	E
T006	-	Ash	14	300	6	6	6	6	3S	EM	Fair	Fair	In hedge line estimated	20+	B2	3.6	R
T007	-	Ash	14	500	6	6	5	1	3N	EM	Poor	Poor	Ivy clad stem. Minor to mod dead wood throughout. Historic tear outs. Bacterial gals. Western side over road dead	10+	C2	6.0	R
T008	-	Ash	20	740	7	7	7	6	3N	EM	Poor	Poor	Ivy clad stem. Minor to mod dead wood throughout.	10+	C2	8.9	R

Tree Reference Number	Bat Tree Reference Number	Species	Height (m)	DBH (mm)	Canopy spread				First Branch Height and Direction	Age Class	Struc-tural Cond.	Physio-logical Cond.	General Observations and Comments	ERC	Category Grading	RPA Radius (m)	AIA (R, P, E, N)
					N	E	S	W									
													Historic tear outs. Reduced vigour				
T009	-	Oak	19	820	6	5	8	5	4S	EM	Fair	Fair	In hedge line. Full canopy	20+	B2	9.8	R
T010	T43	Oak	16	790	8	8	8	6	3W	SM	Fair	Fair	In field. Historic tear out at 2m stem bulges. Cavity in northern side	20+	B2	9.5	E
T011	-	Ash	16	580	7	7	7	7	3W	SM	Fair	Fair	In hawthorn group. Dieback lower branches. On canal field border. Lateral root to field side. Thigh size	20+	B2	7.0	N
T012#	-	Oak	14	750	6	12	6	6	4N	EM	Fair	Fair	Prolific ivy. In hedge line. Early retrenchment. Sparse inner canopy	20+	B2	9.0	E
T013	-	Ash	9	700	4	13	5	3	1S	M	Poor	Poor	In flooded area. Collapsed	<10	U	8.4	E
T014	-	Alder	8	350	4	4	4	2	3E	SM	Fair	Fair	Prolific ivy	10+	C2	4.2	N
T015	-	Sycamore	10	370	6	4	4	4	4N	SM	Fair	Fair	-	10+	C2	4.4	R
T016	-	Sycamore	18	620	6	5	5	6	4S	SM	Fair	Fair	Bigger than rest of group	20+	B2	7.4	E
T017	-	Beech	20	930	8	8	8	8	6S	M	Fair	Fair	Leaning towards field multiple arborglphys (carvings of shapes or words) on stem.	20+	B2	11.2	R

Tree Reference Number	Bat Tree Reference Number	Species	Height (m)	DBH (mm)	Canopy spread				First Branch Height and Direction	Age Class	Struc-tural Cond.	Physio-logical Cond.	General Observations and Comments	ERC	Category Grading	RPA Radius (m)	AIA (R, P, E, N)
					N	E	S	W									
													On embankment. 0.5m away from existing public right of way				
T018	-	Hornbeam	20#	980	13	13	9	13	5S	OM	Fair	Fair	Old coppice 920 DBH at ground level. Minor dead wood. Discarded tarmac at base on field side	40+	A2	11.8	E
T019	-	Beech	19#	740	8	6	2	6	4E	M	Fair	Poor	Dieback around crown. Major dieback in top historic root pruning bat monitoring mic on field side hollowing at base. Swelling and canker on limbs	10+	C3	8.9	R
T020	-	Ash	17	680	5	6	9	6	5E	EM	Fair	Fair	10% foliage. Ivy on main stem. Ash dieback observed	10+	C2	8.2	N
T021	T50	Oak	15	800	8	8	9	8	6N	SM	Fair	Fair	Wire occluded onto main stem	20+	B2	9.6	N
T022	T51	Unknown	9	0	5	5	6	4	N/A	OM	Dead	Dead	Dead tree	<10	U	0.0	N
T023	-	Sycamore	10	320	3	4	5	6	2N	SM	Fair	Fair	In hedge line	20+	B2	3.8	N
T024	T53	Oak	14	1320	8	6	7	4	6S	M	Fair	Fair	Stem bulges through trunk. First DBH taken from below 1160 and at	40+	A2	15.8	N

Tree Reference Number	Bat Tree Reference Number	Species	Height (m)	DBH (mm)	Canopy spread				First Branch Height and Direction	Age Class	Struc-tural Cond.	Physio-logical Cond.	General Observations and Comments	ERC	Category Grading	RPA Radius (m)	AIA (R, P, E, N)
					N	E	S	W									
													1.4 1320. Deadwood throughout. Snags				
T025	T52	Ash	23	870	10	13	12	0	6S	M	Fair	Fair		40+	A2	10.4	N
T026	-	Willow	15	890	4	4	4	4	3W	M	Fair	Fair	Other side of watercourse that intersects group	20+	B2	10.7	N
T027	-	Willow	5	275	4	3	4	4	3N	SM	Fair	Fair	On railway land overhanging existing fence	10+	C2	3.3	N
T028#	-	Ash	16	540	6	4	6	6	5S	EM	Fair	Fair	In hedge line prolific ivy	20+	B2	6.5	N
T029	-	Ash	16	720	6	6	7	6	4N	EM	Fair	Fair	Ash dieback observed	10+	C2	8.6	N
T030	-	Sycamore	11	500	3	5	5	5	6S	EM	Fair	Fair	Prolific ivy. Set within hedge line	10+	C2	6.0	N
T031	-	Hawthorn	5	180	2	2	2	2	2N	SM	Fair	Fair	On canal	10+	C2	2.2	N
T032#	-	Willow	23	1095	10	10	10	8	4W	OM	Fair	Fair	Recently lifted on path side with brash left. 1070 at ground level on top of bund	20+	B2	13.1	N
T033	T24	Ash	14	500	1	8	8	6	2E	SM	Poor	Poor	Ash dieback observed, giant ash bracket, bacterial canker	10+	C3	6.0	N
T034	-	Sycamore	11	420	4	4	4	4	4W	SM	Fair	Fair	Prolific ivy in slope with ditch running in front of tree	10+	C2	5.0	N

Tree Reference Number	Bat Tree Reference Number	Species	Height (m)	DBH (mm)	Canopy spread				First Branch Height and Direction	Age Class	Struc-tural Cond.	Physio-logical Cond.	General Observations and Comments	ERC	Category Grading	RPA Radius (m)	AIA (R, P, E, N)
					N	E	S	W									
T035	-	Oak	16	624	6	6	6	6	5S	EM	Fair	Fair	Prolific ivy. In woodland group ditch in front of tree to electricity pylon side. Occluded wire	20+	B2	7.5	N
T036	-	Ash	16	528	7	6	6	5	2N	EM	Fair	Fair	In hedge line separating field	20+	B2	6.3	N
T037	-	Oak	8	673	4	9	4	0	4E	EM	Fair	Fair	Historically failed root plate	20+	B3	8.1	N
T038	-	Hawthorn	7	162	3	3	3	3	6E	SM	Fair	Fair	Railway land	10+	C2	1.9	N
T039	-	Willow	9	260	4	4	4	4	3N	SM	Fair	Fair	Railway land	10+	C2	3.1	N
T040	-	Oak	6	150	3	3	3	3	4S	Y	Fair	Fair	On railway land	10+	C2	1.8	N
T041	-	Oak	11	447	4	5	4	4	5N	SM	Fair	Fair	Flooded area cavity on western side. Slight lean over watercourse	20+	B2	5.4	N
T042#	-	Oak	8	280	2	2	2	3	N/A	EM	Dead	Dead	Dead oak on island	<10	U	3.4	N
T043#	-	Ash	9	350	4	3	4	3	3S	SM	Fair	Fair	In PWDR site. Estimated from road	10+	C2	4.2	N
T044#	-	Oak	9	240	4	4	4	4	4S	SM	Fair	Fair	Wire occluded. Behind barb wire in shrub layer	20+	B2	2.9	N
T045#	-	Sycamore	11	380	5	5	5	5	2N	EM	Fair	Fair	In boggy layer	20+	B2	4.6	N
T046	-	Oak	11	550	3	7	9	3	3S	EM	Fair	Fair	-	20+	B2	6.6	N
T047	-	Oak	18	820	12	12	6	6	4E	EM	Fair	Fair	Lean towards east. In ditch	20+	B2	9.8	N

Tree Reference Number	Bat Tree Reference Number	Species	Height (m)	DBH (mm)	Canopy spread				First Branch Height and Direction	Age Class	Struc-tural Cond.	Physio-logical Cond.	General Observations and Comments	ERC	Category Grading	RPA Radius (m)	AIA (R, P, E, N)
					N	E	S	W									
T048#	-	Oak	6	150	1	1	1	1	4W	EM	Fair	Fair	Behind railway fence	10+	C2	1.8	N
T049	-	Oak	6	160	3	3	3	3	2N	Y	Fair	Fair	Behind railway fence	10+	C2	1.9	N
T050	-	Ash	5	100	1	1	1	1	3W	Y	Fair	Fair	Amongst undersize group	10+	C2	1.2	N
T051	T54	Sycamore	10	500	3	3	3	3	2N	EM	Fair	Fair	-	20+	B2	6.0	N
T052	-	Ash	19	770	10	12	8	8	4S	EM	Fair	Fair	Prolific ivy. Historic snap outs	20+	B2	9.2	N
T053	-	Oak	10	670	6	5	6	6	6N	EM	Fair	Fair	Squat form oak basal flare. Livestock damage	20+	B2	8.0	E
T054	-	Hawthorn	4	320	2	2	2	2	4N	SM	Fair	Fair	-	10+	C2	3.8	E
T055	T20	Oak	14	800	7	7	7	7	5S	M	Fair	Fair	Stem wounds minor dead wood	20+	B2	9.6	R
T056	T56	Oak	14#	910	8	8	12	9	3W	M	Fair	Fair	Historic crown clearance. Lean to south. Historic tear out to east. Historic chicken of the woods - fungi found in tree	20+	B2	10.9	E
T057	T55	Oak	12	820	8	9	8	8	6S	M	Fair	Fair	Major wood. Large cavity on northern side. Stem bulges.	20+	B3	9.8	E
T058	T21	Oak	16	630	4	6	6	4	7W	M	Fair	Fair	Historic drainage ditch to south of tree	20+	B2	7.6	N
T059#	-	Sycamore	15	500	4	5	4	5	3W	EM	Fair	Fair	In stream	20+	B2	6.0	N

Tree Reference Number	Bat Tree Reference Number	Species	Height (m)	DBH (mm)	Canopy spread				First Branch Height and Direction	Age Class	Struc-tural Cond.	Physio-logical Cond.	General Observations and Comments	ERC	Category Grading	RPA Radius (m)	AIA (R, P, E, N)
					N	E	S	W									
T060	T22	Oak	17	1100	6	12	5	8	4S	M	Fair	Fair	In stream. Large limbs on eastern side approx. 400 DBH, approx. 1.5m ground level. Several limbs touching ground	20+	B3	13.2	N
T061	-	Hawthorn	10	411	5	6	3	1	4N	EM	Fair	Fair	Situated on eastern edge of group	20+	B3	4.9	N
T062#	-	Oak	18	920	6	9	9	9	5N	M	Fair	Fair	In stream. Large surface roots situated away from steam. Stream to east of tree	20+	B2	11.0	N
T063	T17	Oak	16	800	8	9	10	8	4S	M	Fair	Fair	Open canopy. Minor deadwood. Basal flare. Snags knot holes	20+	B2	9.6	R
T064	T18	Oak	20	970	8	10	8	7	4E	M	Fair	Fair	Major snap out on north side	20+	B2	11.6	N
T065	T19	Oak	21	103	8	8	12	11	6W	M	Fair	Fair	Hazard beam on south side. Snags. Historic tear outs. Major dead wood	20+	B2	1.2	N
T066	-	Oak	18	770	7	8	9	8	6N	M	Fair	Fair	Moderate dead wood	20+	B2	9.2	N
T067#	-	Hawthorn	8	200	3	3	3	3	3W	SM	Fair	Fair	Access not possible. Livestock in field	10+	C2	2.4	N
T068#	-	Hawthorn	3	100	2	2	2	2	4W	EM	Fair	Fair	Railway vegetation	10+	C2	1.2	N

Tree Reference Number	Bat Tree Reference Number	Species	Height (m)	DBH (mm)	Canopy spread				First Branch Height and Direction	Age Class	Struc-tural Cond.	Physio-logical Cond.	General Observations and Comments	ERC	Category Grading	RPA Radius (m)	AIA (R, P, E, N)
					N	E	S	W									
T069#	-	Hawthorn	6	100	2	2	2	2	4N	EM	Fair	Fair	Railway vegetation	10+	C2	1.2	N
T070	-	Lime	22	451	6	6	6	6	5E	M	Fair	Fair	-	20+	B2	5.4	N
T071	-	Sycamore	22	820	7	7	4	7	6S	M	Fair	Fair	-	20+	B2	9.8	E
T072	-	Sycamore	22	580	6	5	6	7	7E	M	Fair	Fair	-	20+	B2	7.0	E
T073	-	Oak	22	740	7	6	4	9	4N	M	Fair	Fair	-	20+	B2	8.9	E
T074	-	Sycamore	20	220	6	6	4	6	3S	M	Fair	Fair	-	20+	B2	2.6	E
T075	-	Sycamore	22	640	5	5	3	5	8S	M	Fair	Fair	-	20+	B2	7.7	E
T076	-	Lime	22	660	7	7	3	3	7W	M	Fair	Fair	-	20+	B2	7.9	E
T077	-	Hornbeam	22	650	5	6	3	6	4W	M	Fair	Fair	-	20+	B2	7.8	E
T078	-	Lime	22	590	6	7	5	7	5S	M	Fair	Fair	-	20+	B2	7.1	E
T079	T49	Hornbeam	22	601	6	9	3	6	6N	M	Fair	Fair	-	20+	B2	7.2	N
T080	-	Oak	22	500	6	6	3	6	7N	EM	Fair	Fair	-	20+	B2	6.0	N
T081	-	Sycamore	22	450	6	4	2	6	6N	EM	Fair	Fair	-	20+	B2	5.4	E
T082	-	Beech	22	710	11	9	4	8	6N	M	Fair	Fair	-	20+	B2	8.5	E
T083	T48	Horse chestnut	22	530	6	6	3	7	6N	M	Fair	Fair	-	20+	B2	6.4	E
T084	-	Alder	22	620	6	7	4	6	6N	M	Fair	Fair	-	20+	B2	7.4	E
T085	-	Horse chestnut	22	620	7	7	3	7	8W	M	Fair	Fair	-	20+	B2	7.4	E
T086	-	Horse chestnut	22	680	8	8	3	7	6W	M	Fair	Fair	--	20+	B2	8.2	R
T087	-	Beech	22	750	6	8	3	8	3W	M	Fair	Fair	Ditch running along field. Root extension beyond ditch unlikely	20+	B2	9.0	R

Tree Reference Number	Bat Tree Reference Number	Species	Height (m)	DBH (mm)	Canopy spread				First Branch Height and Direction	Age Class	Struc-tural Cond.	Physio-logical Cond.	General Observations and Comments	ERC	Category Grading	RPA Radius (m)	AIA (R, P, E, N)
					N	E	S	W									
T088	-	Oak	21	760	9	10	5	9	6S	M	Fair	Fair	-	20+	B2	9.1	R
T089	-	Sycamore	22	440	6	5	4	6	6N	M	Fair	Fair	-	20+	B2	5.3	R
T090	-	Oak	22	510	7	7	6	8	3N	M	Fair	Fair	-	20+	B2	6.1	R
T091	T47	Sycamore	22	750	9	9	4	9	4W	M	Fair	Fair	-	20+	B2	9.0	R
T092	-	Beech	22	710	9	9	5	9	7N	M	Fair	Fair	-	20+	B2	8.5	R
T093	-	Oak	22	640	8	8	5	8	6N	M	Fair	Fair	-	20+	B2	7.7	R
T094	-	Hazel	14	262	5	6	5	6	5S	SM	Fair	Fair		20+	B2	3.1	R
T095	-	Beech	22	640	8	8	5	8	4S	M	Fair	Fair	-	20+	B2	7.7	R
T096	-	Ash	22	720	8	8	5	8	5S	M	Fair	Fair	--	20+	B2	8.6	R
T097	-	Sycamore	22	380	6	6	6	6	6W	M	Fair	Fair		20+	B2	4.6	R
T098	-	Oak	19	980	8	10	10	10	1N	EM	Fair	Fair	Chicken of the woods and historic bracket on stem. Deadwood over highway. Low limb on west side partially detached and touching ground. Hazard beams. Livestock damage to base.	20+	B3	11.8	N
T099	-	Hawthorn	5	173	2	2	2	2	4N	SM	Fair	Fair	-	10+	C2	2.1	E
T100	-	Hawthorn	8	231	3	2	2	2	4S		Fair	Fair	-	10+	C2	2.8	N
T101	T57	Oak	11	830	4	4	6	7	4E	M	Fair	Fair	Major dead wood. Flooding around base. Historic tear	20+	B3	10.0	N

Tree Reference Number	Bat Tree Reference Number	Species	Height (m)	DBH (mm)	Canopy spread				First Branch Height and Direction	Age Class	Struc-tural Cond.	Physio-logical Cond.	General Observations and Comments	ERC	Category Grading	RPA Radius (m)	AIA (R, P, E, N)
					N	E	S	W									
													out. Flaking bark. Livestock damage				
H102	-	Elm, hawthorn, blackthorn, ash	2	75	1	1	1	1	N/A	EM	Fair	Fair	-	10+	C3	0.9	R
H103	-	Blackthorn, hawthorn	2	80	1	1	1	1	N/A	Y	Fair	Fair	-	10+	C3	1.0	R
H104	-	Elm, hawthorn, blackthorn, ash	2	75	1	1	1	1	N/A	EM	Fair	Fair	Maintained.	10+	C3	0.9	R
H105	-	Hawthorn, sycamore, ash, hazel	2	80	1	1	1	1	N/A	EM	Fair	Fair	-	10+	C3	1.0	R
G106	-	Oak	19	820	9	9	9	9	N/A	EM	Fair	Fair	DBH taken from southern oak 569 DBH on northern tree. Tear out of main leader on north tree. Manhole cover north east of north oak in RPA (Root Protection Area)	40+	B2	9.8	R
G107	-	Hawthorn, ash	12	390	4	4	4	4	N/A	EM	Fair	Fair	Possible old boundary. Occluded fence wire. Ash to north end. Hawthorn stem cavities	20+	B2	4.7	N

Tree Reference Number	Bat Tree Reference Number	Species	Height (m)	DBH (mm)	Canopy spread				First Branch Height and Direction	Age Class	Struc-tural Cond.	Physio-logical Cond.	General Observations and Comments	ERC	Category Grading	RPA Radius (m)	AIA (R, P, E, N)
					N	E	S	W									
G108#	-	Hawthorn, yew, holly, sycamore,	12	220	2	2	2	2	N/A	EM	Fair	Fair	Ivy clad stems. Screening feature. Separates canal to field	10+	C2	2.6	N
H109	-	Hawthorn, oak sycamore, ash	2	90	1	1	1	1	N/A	EM	Fair	Fair	-	10+	C3	1.1	R
H110	-	Hawthorn, blackthorn	2	75	1	1	1	1	N/A	Y	Fair	Fair	-	10+	C3	0.9	N
H111	-	Hawthorn, blackthorn, elder, hedge	2	100	1	1	1	1	N/A	Y	Fair	Fair	Old laid hedge	10+	C3	1.2	E
G112#	T44	Oak and alder	0	550	4	4	4	4	N/A	SM	Fair	Fair	In flooded area. Flail wounds	40+	B2	6.6	E
G113	T46	Sycamore, horse chestnut	12	450	3	3	3	3	N/A	EM	Fair	Fair	450 on sycamore to railway line. 1 metre spacing	10+	C2	5.4	R
G114	-	Hawthorn, sycamore, horse chestnut	12	500	1	1	1	1	N/A	EM	Fair	Fair	-	10+	C2	6.0	P
G115	-	Hawthorn, elm	6	120	2	2	2	2	N/A	EM	Fair	Fair	-	10+	C2	1.4	N
G116	T31	Sycamore, horse chestnut, hazel, hornbeam, beech, ash,	18	510	3	3	3	3	N/A	SM	Fair	Fair	Ditch between two groups. Long linear group made up of smaller specimens. Max taken from sycamore of 510	40+	B2	6.1	E

Tree Reference Number	Bat Tree Reference Number	Species	Height (m)	DBH (mm)	Canopy spread				First Branch Height and Direction	Age Class	Struc-tural Cond.	Physio-logical Cond.	General Observations and Comments	ERC	Category Grading	RPA Radius (m)	AIA (R, P, E, N)
					N	E	S	W									
		hawthorn, elm, cherry											which is 2m from margin on west. Typical range of undergrowth range from 180 to 250				
G117	T26 T27 T28 T29 T30	Hornbeam, beech, sycamore, horse chestnut, cherry, ash, lime, elm, sweet chestnut	0	1000	6	6	6	6	N/A	M	Fair	Fair	7 stems per 0.1 ha-. Group made up of larger specimens of 800 DBH plus. All with overlapping RPA. DBH taken from oak nearest to lea road. Understory of holly hazel bramble yew elm. Deadwood throughout canopy screening feature	40+	B2	12.0	E
H118	-	Beech sycamore hawthorn elm scrub group hazel yew	10	250	3	3	3	3	N/A	SM	Fair	Fair	Behind railway fence on railway land scrub group	10+	C2	3.0	E
G119	-	Hawthorn, elm	14	380	4	4	4	4	N/A	EM	Fair	Fair	-	10+	C2	4.6	E
G119a#	-	Hawthorn, Elm	4	120	2	2	2	2	N/A	SM	Fair	Fair	Scrub group in pasture field near railway (part continuation of G119)	10+	C2	1.4	P

Tree Reference Number	Bat Tree Reference Number	Species	Height (m)	DBH (mm)	Canopy spread				First Branch Height and Direction	Age Class	Struc-tural Cond.	Physio-logical Cond.	General Observations and Comments	ERC	Category Grading	RPA Radius (m)	AIA (R, P, E, N)
					N	E	S	W									
H120	-	Hazel, hawthorn, holly, yew, elm, blackthorn.	22	380	8	8	8	8	N/A	EM	Fair	Fair	Group feature screening railway line forming undergrowth under mature trees of separate points. Separate observation points taken of larger trees	10+	C2	4.6	E
G121	-	Ash, sycamore, beech	21	710	5	3	4	3	N/A	M	Fair	Fair	DBH taken from beech . Signs of ash dieback observed	20+	B2	8.5	R
H122	-	Hazel, apple, elm, blackthorn, sycamore, hawthorn	14	340	4	4	4	4	N/A	SM	Fair	Fair	Understory group on existing bank next to footpath	10+	C3	4.1	N
H123	-	Sycamore, oak, beech	18	710	6	6	6	6	N/A	M	Fair	Fair	-	40+	B2	8.5	P
G124	-	Hawthorn	6	150	2	3	3	3	N/A	SM	Fair	Fair	Railways land behind fence	10+	C3	1.8	N
G125#	-	Hawthorn	6	220	3	3	3	3	N/A	EM	Fair	Fair	Railway land	10+	C2	2.6	N
G126#	-	Poplar, alder, Italian alder, aspen, goat willow, oak	23	500	6	6	5	6	N/A	SM	Fair	Fair	Set in unmanaged hawthorn group access not possible	40+	B2	6.0	P
G127#	-	Hawthorn	8	350	4	4	4	4	N/A	SM	Fair	Fair	Estimated as behind railway line	10+	C2	4.2	R

Tree Reference Number	Bat Tree Reference Number	Species	Height (m)	DBH (mm)	Canopy spread				First Branch Height and Direction	Age Class	Struc-tural Cond.	Physio-logical Cond.	General Observations and Comments	ERC	Category Grading	RPA Radius (m)	AIA (R, P, E, N)
					N	E	S	W									
G128	-	Blackthorn elder, alder, oak, hazel	12	350	3	3	3	3	N/A	EM	Fair	Fair	-	10+	C2	4.2	R
G129	-	Apple, hawthorn, Leyland cypress, ash,	7	260	2	2	2	2	N/A	EM	Fair	Fair	Estimated from road. Third party trees in rear gardens next to existing railway	10+	C2	3.1	N
H130	-	Hawthorn, holly, blackthorn, sycamore	1	150	1	1	1	1	N/A	SM	Fair	Fair	Managed hedge. Historically layered	10+	C2	1.8	P
G131	-	Sycamore	16	480	4	3	3	5	N/A	SM	Fair	Fair	-	40+	B2	5.8	N
G132	-	Ash, sycamore, cherry, crack willow, alder	15	350	4	4	4	4	N/A	SM	Fair	Fair	1m spacing dried stream in centre of group. Ash dieback observed	40+	B2	4.2	N
G133	-	Sycamore, alder, cherry, elm	10	850	6	6	6	6	N/A	SM	Fair	Fair	Separate group west side of ditch	40+	B2	10.2	N
G134	-	Hawthorn, elder, blackthorn	7	75	2	2	2	2	N/A	SM	Fair	Fair	-	10+	C2	0.9	N
G135	-	Hawthorn, elder, blackthorn	7	75	2	2	2	2	N/A	SM	Fair	Fair	-	10+	C2	0.9	N
G136	-	Leyland cypress.	16	480	3	3	3	3	N/A	EM	Fair	Fair	Third party tree behind	40+	B2	5.8	N

Tree Reference Number	Bat Tree Reference Number	Species	Height (m)	DBH (mm)	Canopy spread				First Branch Height and Direction	Age Class	Struc-tural Cond.	Physio-logical Cond.	General Observations and Comments	ERC	Category Grading	RPA Radius (m)	AIA (R, P, E, N)
					N	E	S	W									
H137	-	Hawthorn, blackthorn	8	260	2	2	2	2	N/A	SM	Fair	Fair	Historic layered hedge. DBH taken from ash	10+	C3	3.1	N
H138	-	Hawthorn, ash, blackthorn	8	80	2	2	2	2	N/A	SM	Fair	Fair	Layered hedge historically managed	10+	C3	1.0	N
H139	-	Hawthorn, sycamore	2	80	1	1	1	1	N/A	SM	Fair	Fair	Managed hedge recently flailed	10+	C2	1.0	P
G140	-	Ash, sycamore, alder	16	720	6	6	7	6	N/A	M	Fair	Fair	Prolific ivy. Existing ditch south of group. Outlet in centre of group	40+	B2	8.6	N
H141	-	Hawthorn	2	80	1	1	1	1	N/A	EM	Fair	Fair	Managed hedge	10+	C2	1.0	N
H142	-	Hawthorn, elder	2	80	1	1	1	1	N/A	SM	Fair	Fair	Hawthorn hedge leading to canal	10+	C2	1.0	N
G143#	-	Willow, alder	25	600	4	4	4	4	N/A	M	Fair	Fair	In boggy area. Estimated	20+	B2	7.2	N
G144	-	Alder, elder, hawthorn, hazel, sycamore	12	346	4	4	4	4	N/A	EM	Fair	Fair	Next to willow group	40+	B2	4.2	N
H145	-	Hawthorn, ash elder	2	80	1	1	1	1	N/A	EM	Fair	Fair	Under electric lines	10+	C3	1.0	N
H146	-	Hawthorn, hazel, elder	1	75	1	1	1	1	N/A	SM	Fair	Fair	-	10+	C2	0.9	N
H147	-	Hawthorn	6	180	3	3	3	3	N/A	SM	Fair	Fair	Partially managed. Hawthorn towards canal forming understory group.	10+	C2	2.2	N

Tree Reference Number	Bat Tree Reference Number	Species	Height (m)	DBH (mm)	Canopy spread				First Branch Height and Direction	Age Class	Struc-tural Cond.	Physio-logical Cond.	General Observations and Comments	ERC	Category Grading	RPA Radius (m)	AIA (R, P, E, N)
					N	E	S	W									
													Area away from canal managed hedge				
H148	-	Hawthorn, blackthorn	0	120	1	0	1	1	N/A	EM	Fair	Fair	Recently flailed	10+	C2	1.4	N
G149	-	Silver birch, lime, maple, hornbeam, hawthorn, alder, sycamore, hazel, larch, Italian alder, sorbus, turkey oak	24	750	6	6	6	6	N/A	EM	Fair	Fair	8 per 0.1 hectares. Fence for railway to rear of group. Rear of golf course. Height taken from aspen	20+	B2	9.0	P
G150	-	Sycamore, hawthorn	6	250	2	2	2	2	N/A	EM	Fair	Fair	On network rail land	10+	C2	3.0	P
G151#	-	Hawthorn, sycamore, elder, silver birch, elm	12	120	3	3	3	3	N/A	SM	Fair	Fair	Railway land. Estimated	10+	C2	1.4	E
G152#	-	Hornbeam, sycamore, beech	13	450	6	6	6	6	N/A	EM	Fair	Fair	In the PWDR works access site on grasses area of construction road. Deadwood at approx. 7m. No access to site. Estimated from outside works area	40+	B2	5.4	N

Tree Reference Number	Bat Tree Reference Number	Species	Height (m)	DBH (mm)	Canopy spread				First Branch Height and Direction	Age Class	Struc-tural Cond.	Physio-logical Cond.	General Observations and Comments	ERC	Category Grading	RPA Radius (m)	AIA (R, P, E, N)
					N	E	S	W									
G153	-	Hawthorn, sycamore	8	240	2	2	2	2	N/A	SM	Fair	Fair	Some recently flailed	10+	C2	2.9	N
H154	-	Hawthorn, sycamore, elder	8	250	1	3	1	3	N/A	SM	Fair	Fair	Unmanaged linear group dividing fields. DBH taken from max hawthorn next to individual oak	10+	C2	3.0	N
H155	-	Hawthorn	6	120	2	2	2	2	N/A	SM	Fair	Fair	Patchy group	10+	C2	1.4	N
H156	-	Hawthorn, apple, goat willow, ash	6	150	1	1	1	1	N/A	SM	Fair	Fair	Railways veg	10+	C2	1.8	N
G157#	-	Hawthorn	0	250	2	2	2	2	N/A	SM	Fair	Fair	Behind railway fence	10+	C2	3.0	N
G158	-	Sycamore, hawthorn, ash	19	500	3	3	3	3	N/A	EM	Fair	Fair	Boundary feature on east side of stream hawthorn undergrowth. Larger stems isolated to east side of stream	20+	B2	6.0	E
G159	-	Holly, hawthorn, elder	7	200	3	3	3	3	N/A	EM	Fair	Fair	Partially managed. Between field and canal	10+	C2	2.4	P
G160	-	Ash, hawthorn	5	120	1	1	1	1	N/A	EM	Fair	Fair	Partially managed	10+	C2	1.4	E
G161	T23	Sycamore, oak, mixed broadleaf species	18	900	6	9	6	9	N/A	M	Fair	Fair	Stream to east side of group. Sycamore self-set. RPA	20+	B2	10.8	E

Tree Reference Number	Bat Tree Reference Number	Species	Height (m)	DBH (mm)	Canopy spread				First Branch Height and Direction	Age Class	Struc-tural Cond.	Physio-logical Cond.	General Observations and Comments	ERC	Category Grading	RPA Radius (m)	AIA (R, P, E, N)
					N	E	S	W									
													overlap. Hawthorn willow under layer				
G162	-	Hawthorn, willow, ash	6	550	3	3	3	3	N/A	EM	Fair	Fair	Undergrowth group. Stream intersecting group	20+	B2	6.6	N
H163	-	Hawthorn, elder, sycamore, blackthorn	2	75	1	1	1	1	N/A	SM	Fair	Fair	Managed hedge boundary feature between parcels	10+	C3	0.9	P
G164	-	Hawthorn, ash	8	220	3	3	3	3	N/A	EM	Fair	Fair	Borders canal on built up soil level. Prolific ivy. Old stones near hawthorn.	10+	C2	2.6	N
G165	-	Sycamore	16	550	4	4	4	4	N/A	EM	Fair	Fair	On boundary of railway	10+	C2	6.6	N
H166#	-	Hawthorn, blackthorn, sycamore	2	80	1	1	1	1	N/A	SM	Fair	Fair	Access not possible. Bull in field	10+	C2	1.0	N
H167	-	Hawthorn, sycamore, hazel, oak, elder, blackthorn, privet.	2	75	2	2	2	2	N/A	SM	Fair	Fair	-	10+	C2	0.9	R

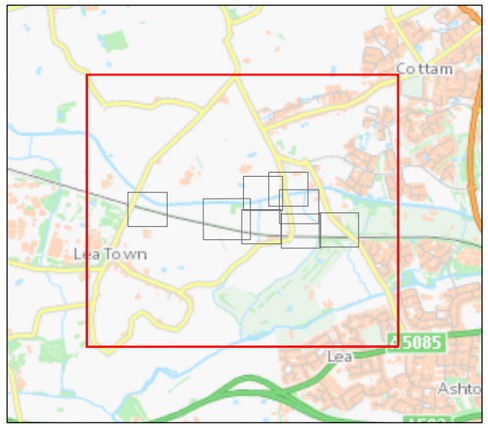
Appendix G. **Tree Constraints Plan**

FIGURE 1

Legend

- Site Boundary
- Site Boundary 15m Buffer
- Individual Trees
- Category A Canopy
- Category B Canopy
- Category C Canopy
- Category U Canopy
- Root Protection Area

Sheet 2
Sheet 3
Sheet 4
Sheet 5
Sheet 6
Sheet 7
Sheet 8
Sheet 9



P03	JUN 2022	Final Issue	RW	DK	MS	PH
P02	NOV 2021	Updated following comments	RW	DK	MS	PH
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FIGURE 1

N
W E
S

G152

T043

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Metres

Legend

- Site Boundary
- Site Boundary 15m Buffer
- Individual Trees
- Category A Canopy
- Category B Canopy
- Category C Canopy
- Category U Canopy
- Root Protection Area

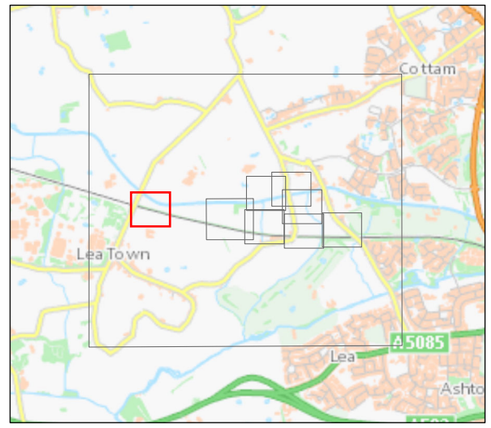

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FIGURE 1

Legend

- Site Boundary
- Site Boundary 15m Buffer
- Individual Trees
- Category A Canopy
- Category B Canopy
- Category C Canopy
- Category U Canopy
- Root Protection Area

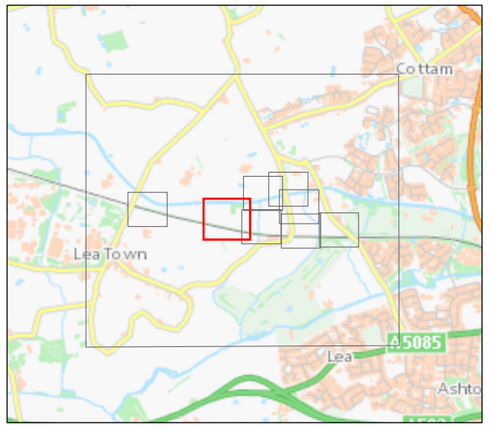

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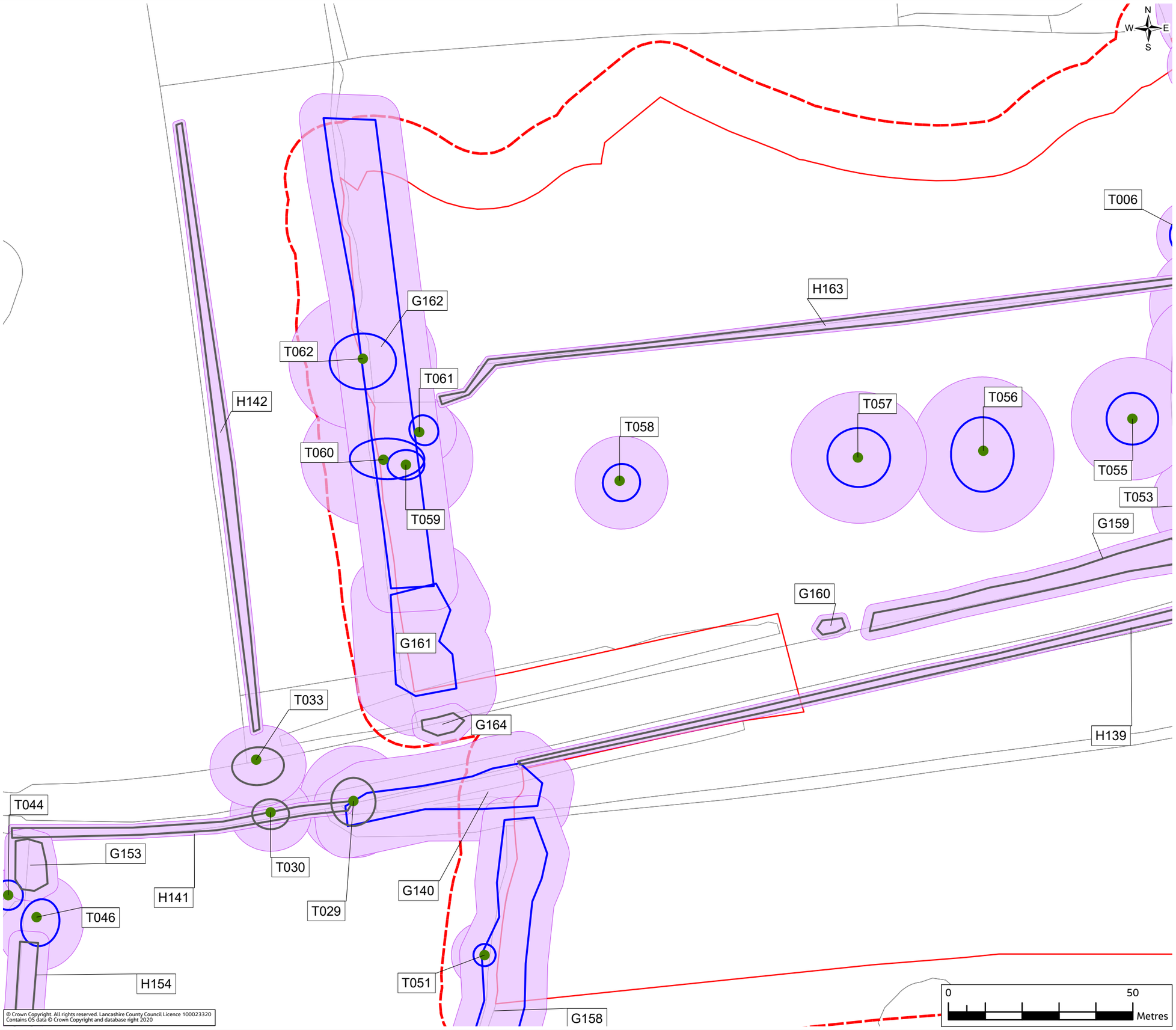
FIGURE 1



Legend

- Site Boundary
- Site Boundary 15m Buffer
- Individual Trees
- Category A Canopy
- Category B Canopy
- Category C Canopy
- Category U Canopy
- Root Protection Area

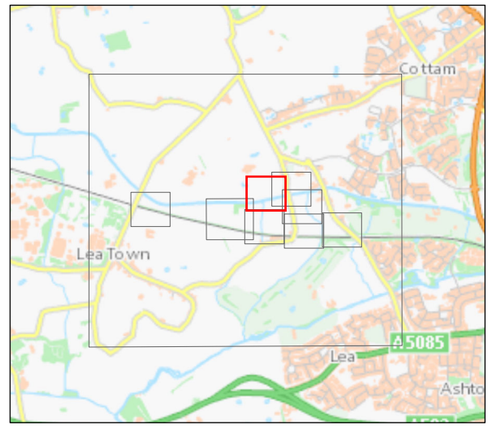


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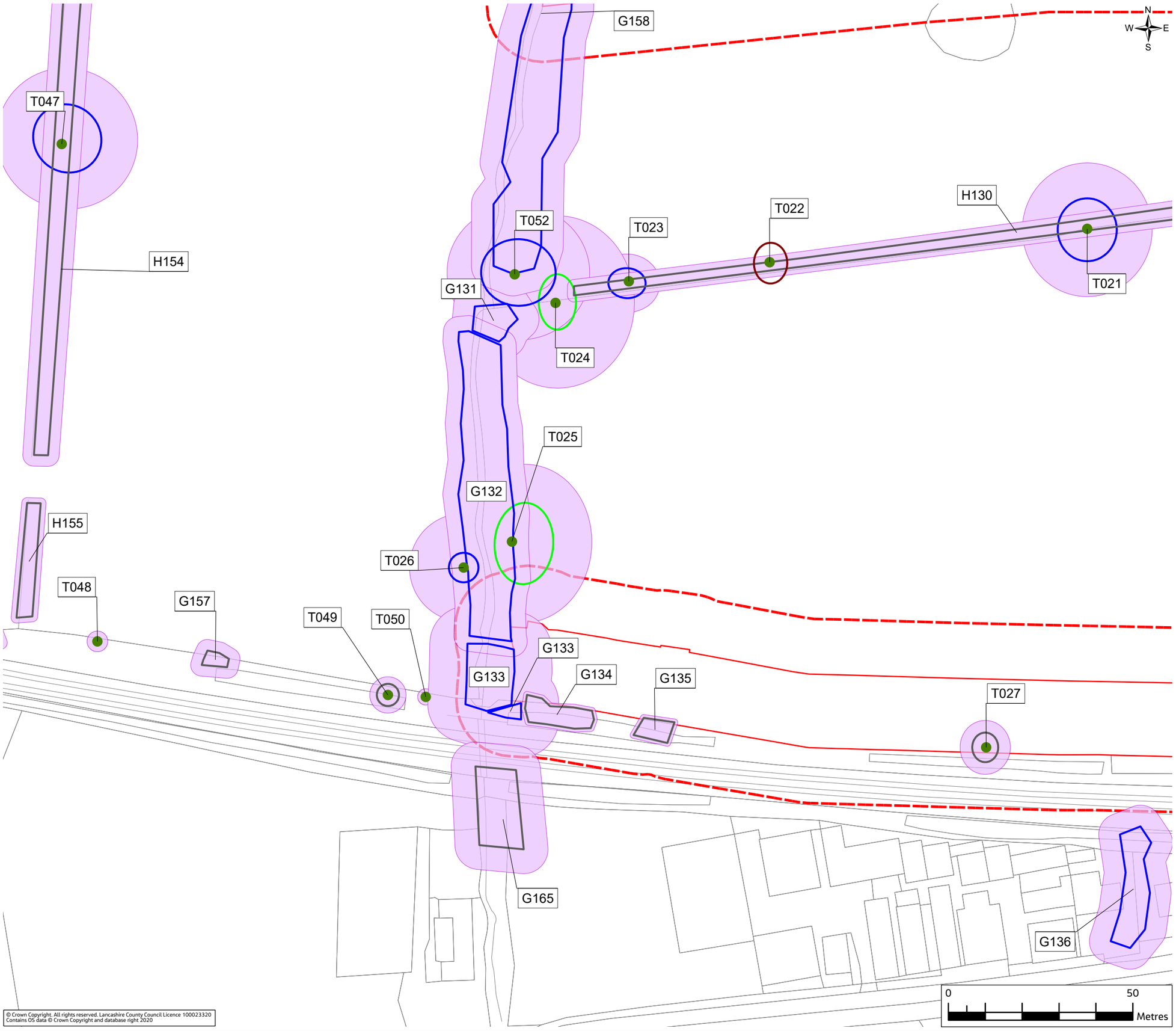
FIGURE 1



Legend

- Site Boundary
- Site Boundary 15m Buffer
- Individual Trees
- Category A Canopy
- Category B Canopy
- Category C Canopy
- Category U Canopy
- Root Protection Area

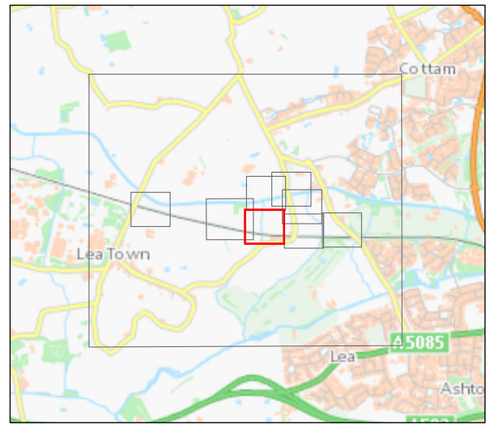


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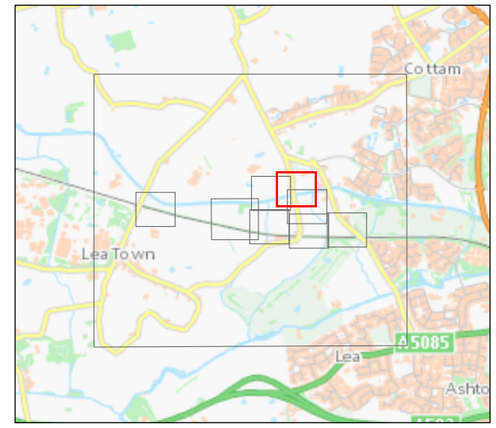
FIGURE 1

Legend

- Site Boundary
- Site Boundary 15m Buffer
- Individual Trees
- Category A Canopy
- Category B Canopy
- Category C Canopy
- Category U Canopy
- Root Protection Area



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Drawing Title: TREE CONSTRAINTS PLAN
SHEET 6 OF 9

Drawing Status: FINAL

Scale @ A3	1:1,000	DO NOT SCALE
Jacobs No.	B2327FEF	
Client No.		

Drawing No.: B2327FEF-JAC-ELS-00-DR-ENV-0002

0 50 Metres

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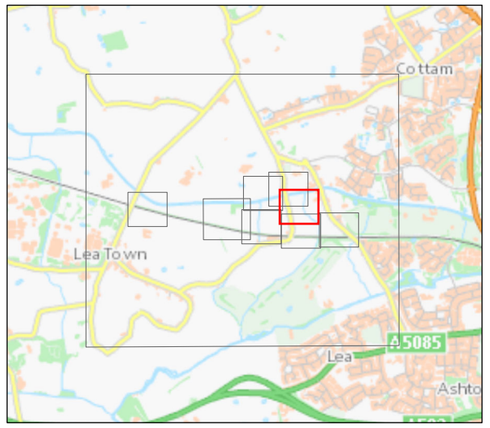
FIGURE 1

Legend

- Site Boundary
- Site Boundary 15m Buffer
- Individual Trees
- Category A Canopy
- Category B Canopy
- Category C Canopy
- Category U Canopy
- Root Protection Area



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SHEET 7 OF 9

Drawing Status: FINAL

Scale @ A3	1:1,000	DO NOT SCALE
Jacobs No.	B2327FEF	
Client No.		

Drawing No.: B2327FEF-JAC-ELS-00-DR-ENV-0002

0 50 Metres

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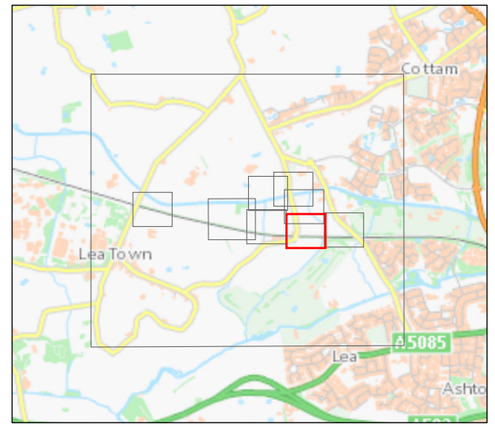
FIGURE 1

Legend

- Site Boundary
- Site Boundary 15m Buffer
- Individual Trees
- Category A Canopy
- Category B Canopy
- Category C Canopy
- Category U Canopy
- Root Protection Area



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SHEET 8 OF 9

Drawing Status: FINAL

Scale @ A3	1:1,000	DO NOT SCALE
Jacobs No.	B2327FEF	
Client No.		

Drawing No.: B2327FEF-JAC-ELS-00-DR-ENV-0002

0 50 Metres

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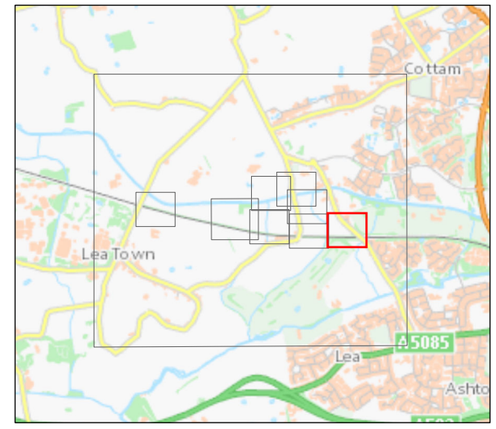
FIGURE 1

Legend

- Site Boundary
- Site Boundary 15m Buffer
- Individual Trees
- Category A Canopy
- Category B Canopy
- Category C Canopy
- Category U Canopy
- Root Protection Area



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SHEET 9 OF 9

Drawing Status: FINAL

Scale @ A3	1:1,000	DO NOT SCALE
Jacobs No.	B2327FEF	
Client No.		

Drawing No.: B2327FEF-JAC-ELS-00-DR-ENV-0002

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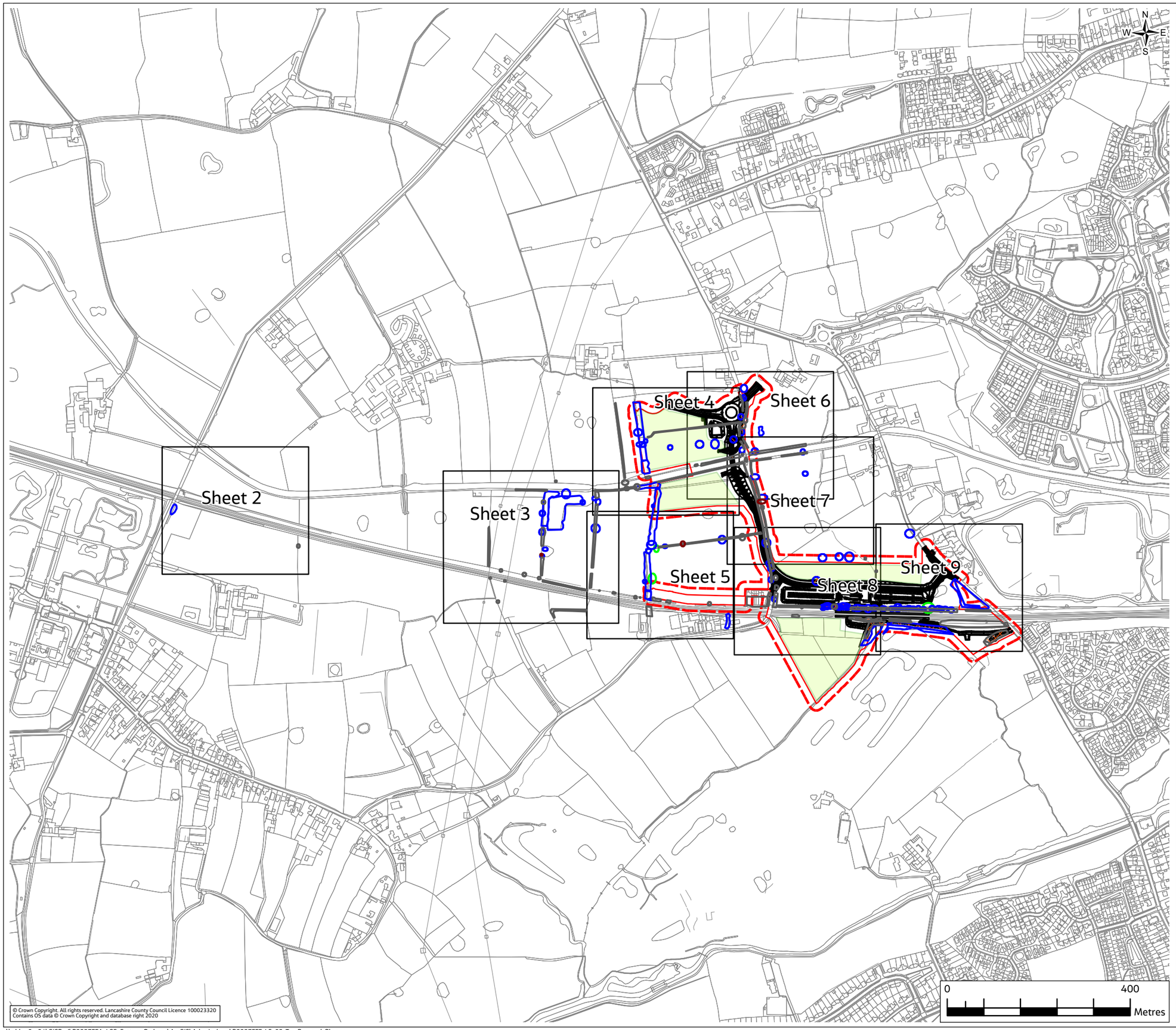
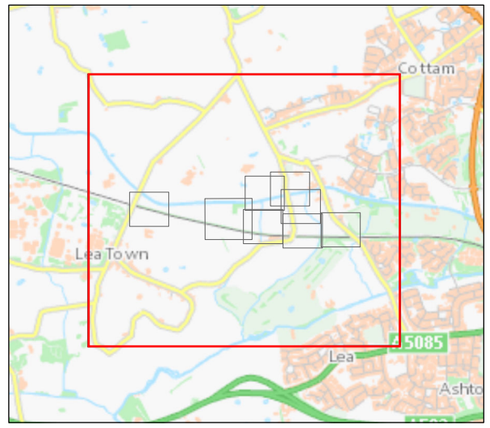
Appendix H. **Tree Removal Plan**

FIGURE 2



Legend

- Scheme Design
- Site Boundary
- Site Boundary 15m Buffer
- Temporary Working Areas
- Individual Trees
- Category A Canopy to be retained
- Category B Canopy to be retained
- Category B Canopy to be removed
- Category C Canopy to be retained
- Category C Canopy to be removed
- Category U Canopy to be retained
- Root Protection Area



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SHEET 1 OF 9

Drawing Status: FINAL

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Client No.	5932	

Drawing No.: B2327FEF-JAC-ELS-00-DR-ENV-0004

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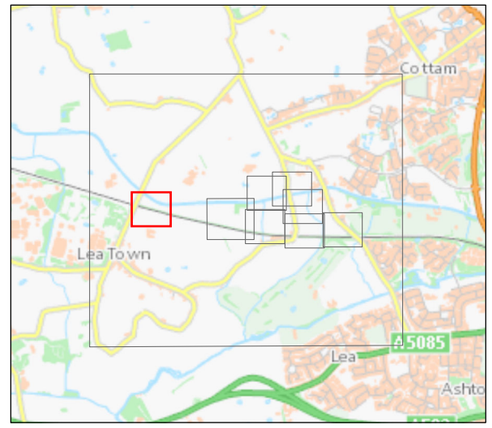
FIGURE 2

Legend

- Individual Trees
- Category B Canopy to be retained
- Category C Canopy to be retained
- Root Protection Area



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SHEET 2 OF 9

Drawing Status: FINAL

Scale @ A3	1:1,000	DO NOT SCALE
Jacobs No.	B2327FEF	
Client No.	5932	

Drawing No.: B2327FEF-JAC-ELS-00-DR-ENV-0004

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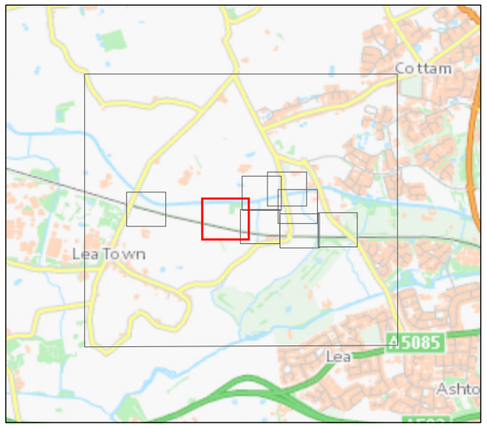
FIGURE 2

Legend

- Individual Trees
- Category B Canopy to be retained
- Category C Canopy to be retained
- Category U Canopy to be retained
- Root Protection Area



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SHEET 3 OF 9

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Drawing No.: B2327FEF-JAC-ELS-00-DR-ENV-0004

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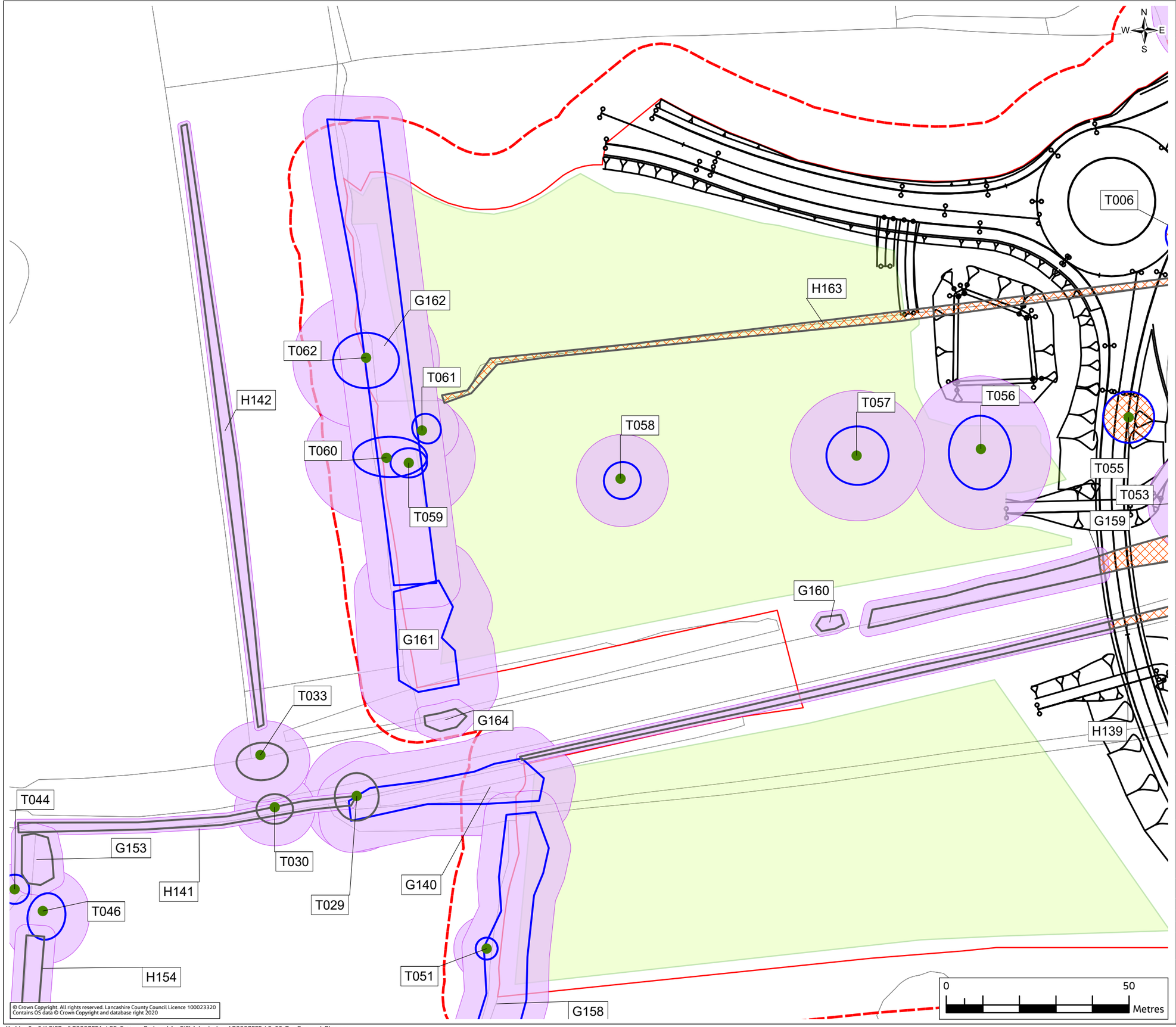
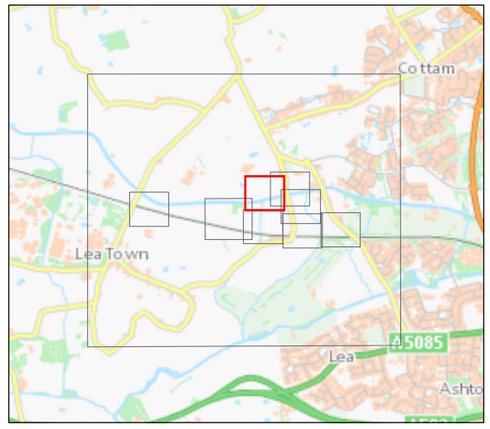
FIGURE 2



Legend

- Scheme Design
- Site Boundary
- Site Boundary 15m Buffer
- Temporary Working Areas
- Individual Trees
- Category B Canopy to be retained
- Category B Canopy to be removed
- Category C Canopy to be retained
- Category C Canopy to be removed
- Root Protection Area



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SHEET 4 OF 9

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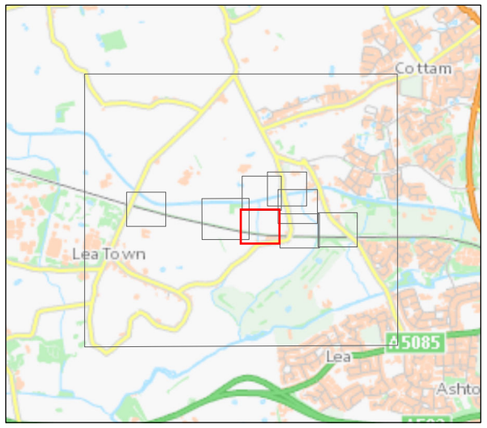
FIGURE 2

Legend

- Site Boundary
- Site Boundary 15m Buffer
- Individual Trees
- Category A Canopy to be retained
- Category B Canopy to be retained
- Category C Canopy to be retained
- Category U Canopy to be retained
- Root Protection Area



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Drawing Title: TREE REMOVALS PLAN
SHEET 5 OF 9

Drawing Status: FINAL

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Client No.	5932	

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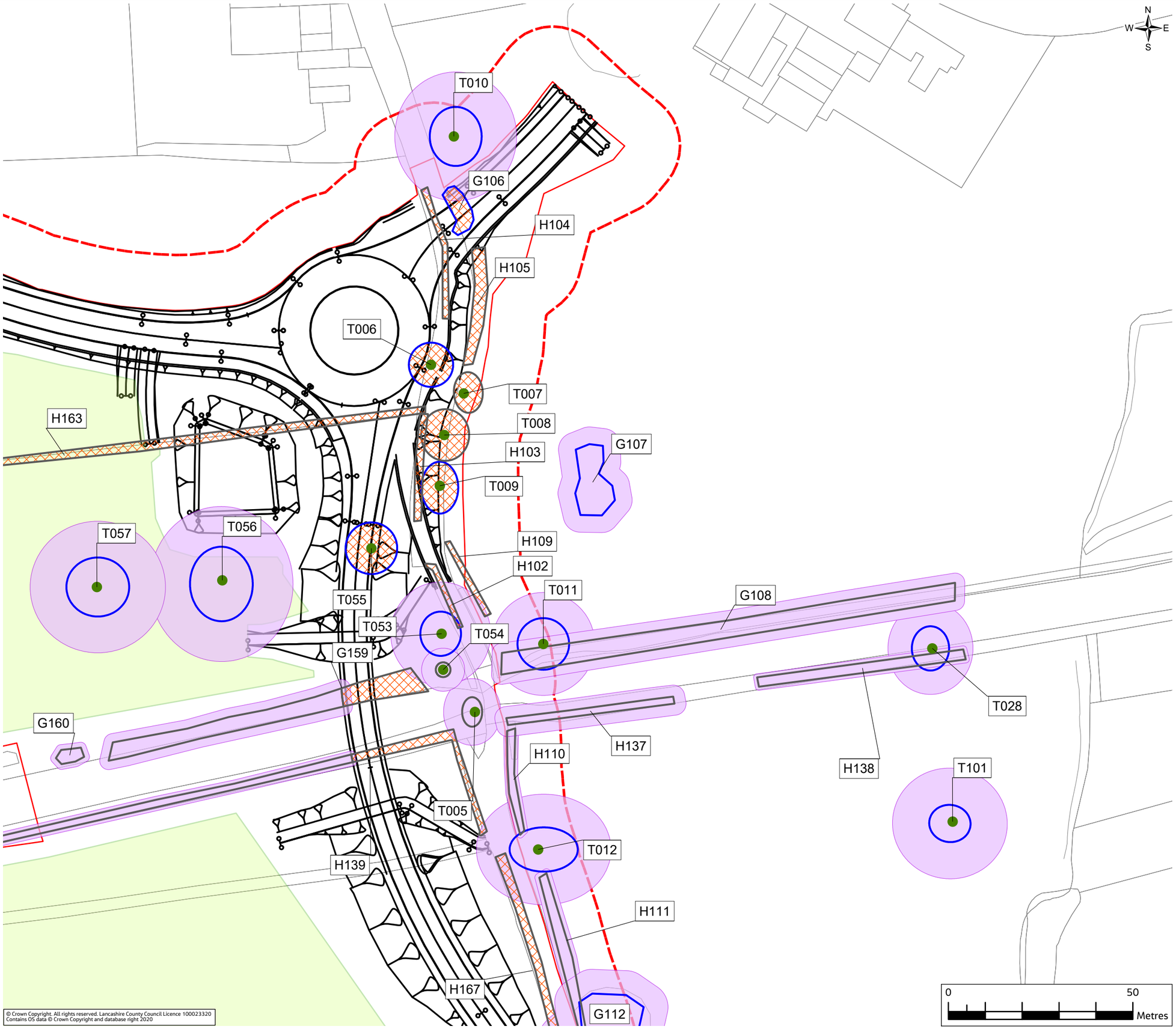
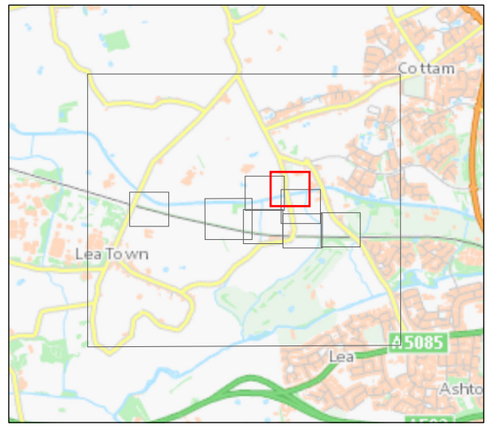
FIGURE 2



Legend

- Scheme Design
- Site Boundary
- Site Boundary 15m Buffer
- Temporary Working Areas
- Individual Trees
- Category B Canopy to be retained
- Category B Canopy to be removed
- Category C Canopy to be retained
- Category C Canopy to be removed
- Root Protection Area



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SHEET 6 OF 9

Drawing Status: FINAL

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Client No.	5932	

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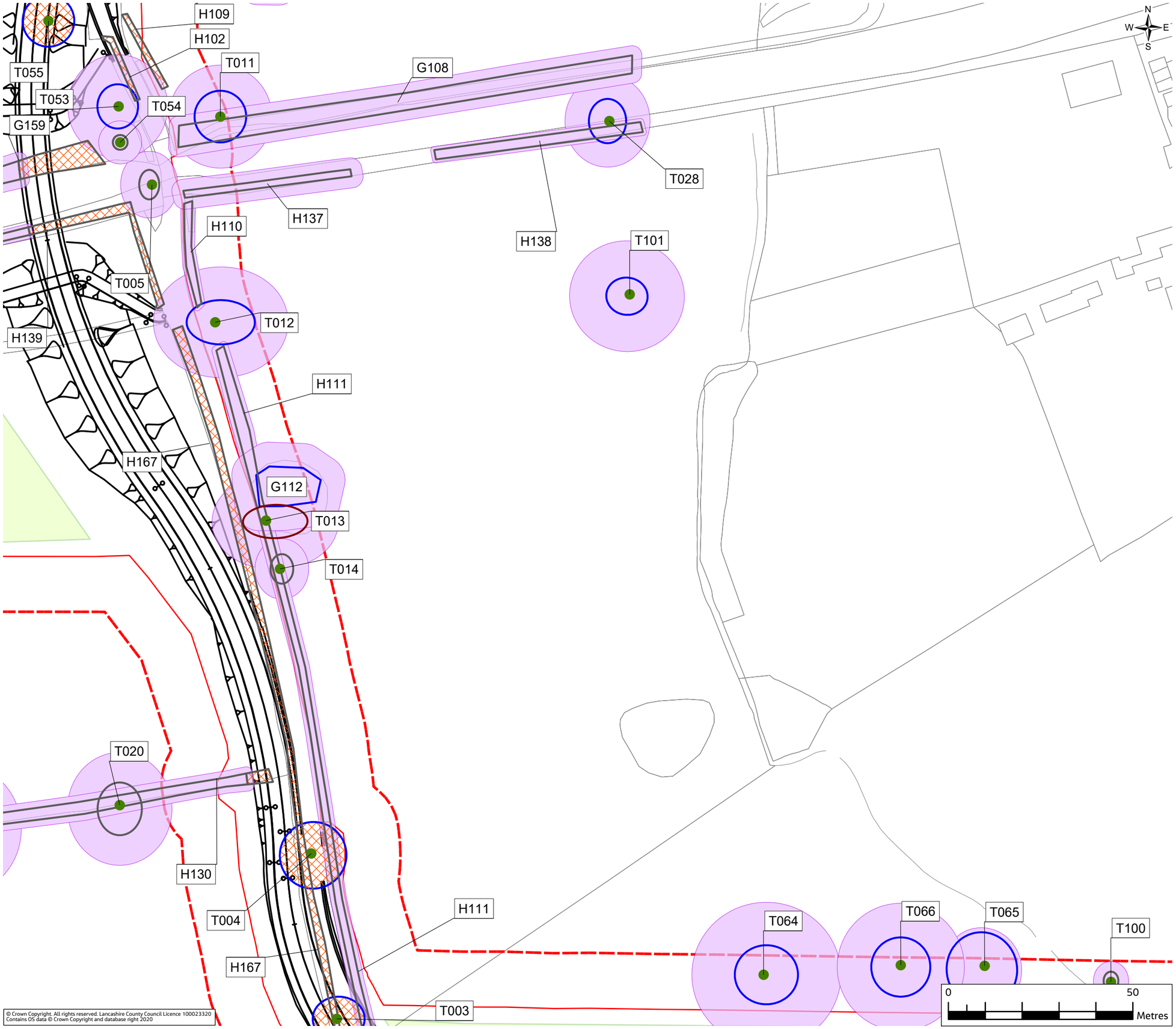

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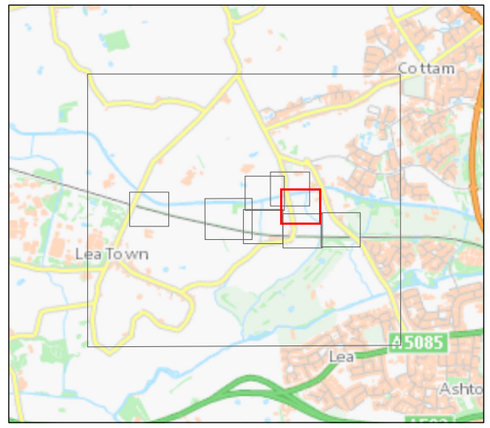
FIGURE 2

Legend

- Scheme Design
- Site Boundary
- Site Boundary 15m Buffer
- Temporary Working Areas
- Individual Trees
- Category B Canopy to be retained
- Category B Canopy to be removed
- Category C Canopy to be retained
- Category C Canopy to be removed
- Category U Canopy to be retained
- Root Protection Area



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SHEET 7 OF 9

Drawing Status: FINAL

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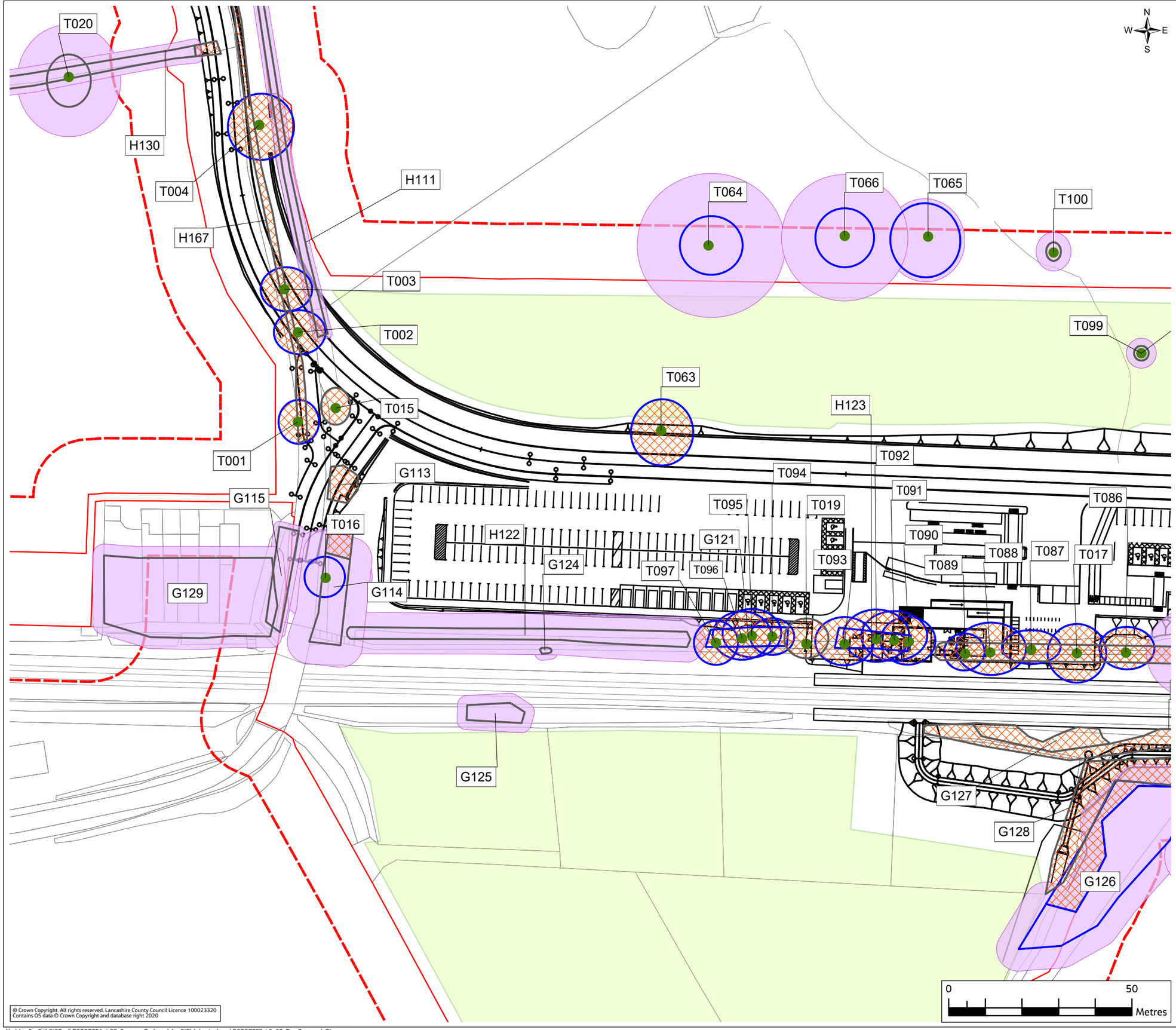
Client No.	5932	

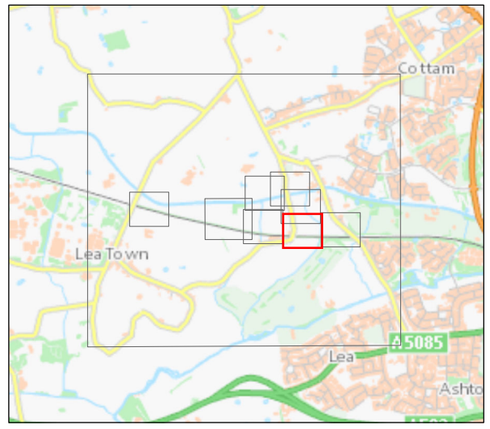
Drawing No.: B2327FEF-JAC-ELS-00-DR-ENV-0004

FIGURE 2



Legend

- Scheme Design
- Site Boundary
- Site Boundary 15m Buffer
- Temporary Working Areas
- Individual Trees
- Category B Canopy to be retained
- Category B Canopy to be removed
- Category C Canopy to be retained
- Category C Canopy to be removed
- Root Protection Area



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SHEET 8 OF 9

Drawing Status: FINAL

Scale @ A3	1:1,000	DO NOT SCALE
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Client No.	5932	

Drawing No.: B2327FEF-JAC-ELS-00-DR-ENV-0004

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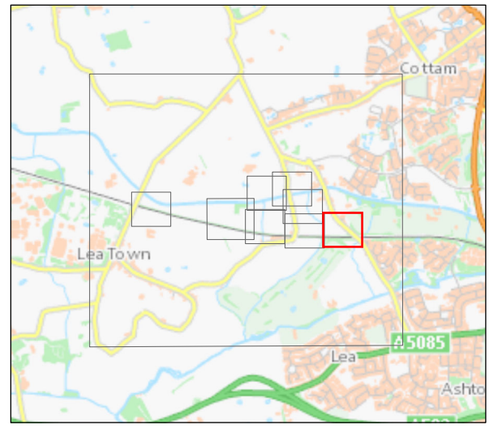
FIGURE 2

Legend

- Scheme Design
- Site Boundary
- Site Boundary 15m Buffer
- Temporary Working Areas
- Individual Trees
- Category A Canopy to be retained
- Category B Canopy to be retained
- Category B Canopy to be removed
- Category C Canopy to be retained
- Category C Canopy to be removed
- Root Protection Area



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SHEET 9 OF 9

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Scale @ A3	1:1,000	DO NOT SCALE
Jacobs No.	B2327FEF	
Client No.	5932	

Drawing No.: B2327FEF-JAC-ELS-00-DR-ENV-0004

0 50 Metres

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