



TECHNICAL NOTE

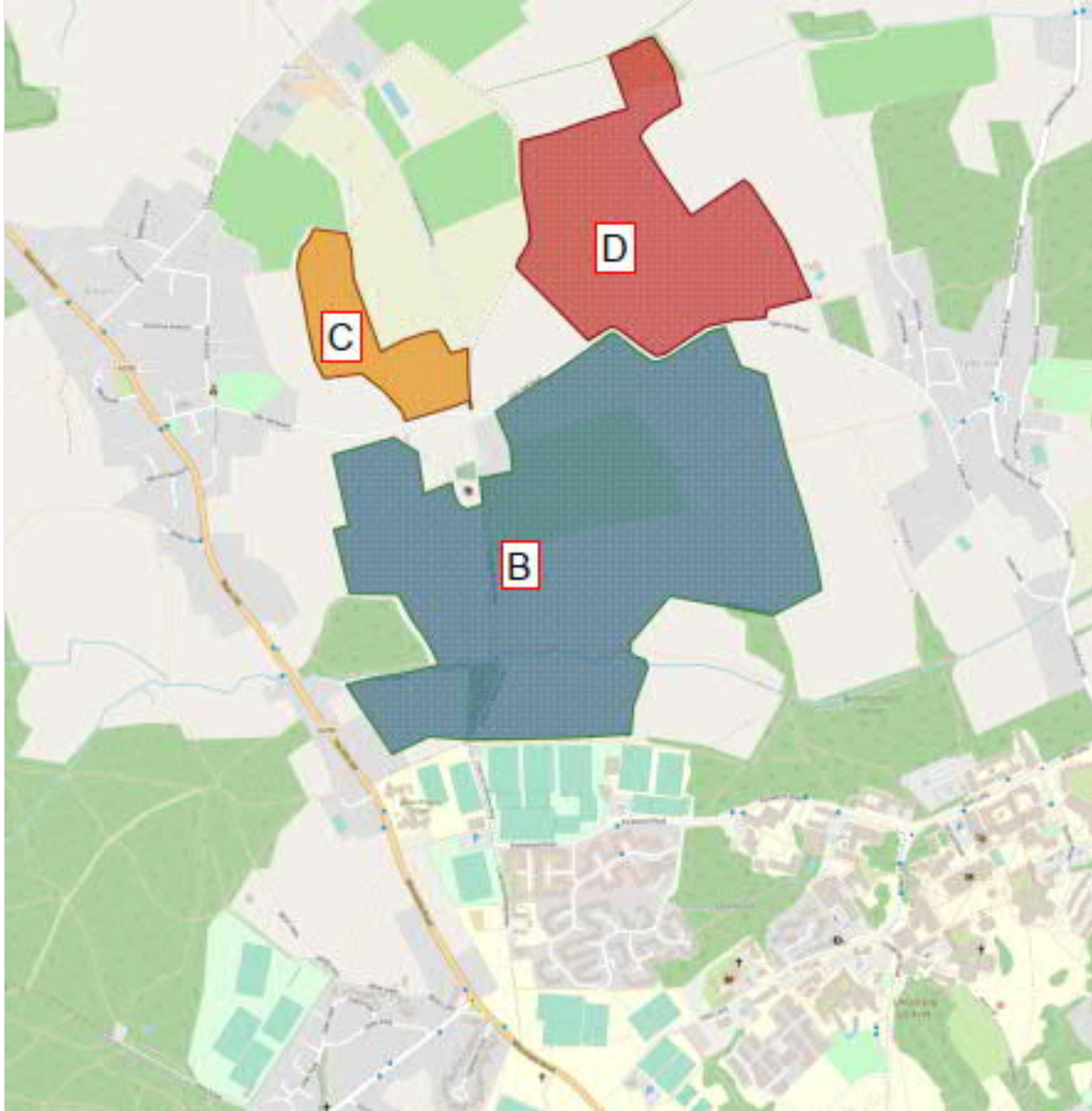
DATE:	11 February 2022	CONFIDENTIALITY:	Public
SUBJECT:	University of Kent, Canterbury Campus Access Road Alignment Woodland Impact Review		
PROJECT:	70080896	AUTHOR:	Justin Sherlock
CHECKED:	Howard Booth	APPROVED:	Justin Sherlock

INTRODUCTION

WSP has been commissioned by the University of Kent (UoK) to provide transport and environmental advice for the development of proposals at various sites in and around their Canterbury Campus.

In August 2021 UoK submitted representations to Canterbury City Council's (CCC) Preferred Options Local Plan Consultation. This submission included proposals for development of a residential led new community on land to the north of the University's Campus referred to as Sites BCD. A location plan for Sites BCD is shown in **Figure 1**.

Figure 1 – Sites BCD Location Plan



Within the southern section of Site B lies two areas of woodland included on Natural England's Ancient Woodland Inventory. The access strategy for the site proposes to take access through one of these areas of woodland and pass in close proximity to the other.

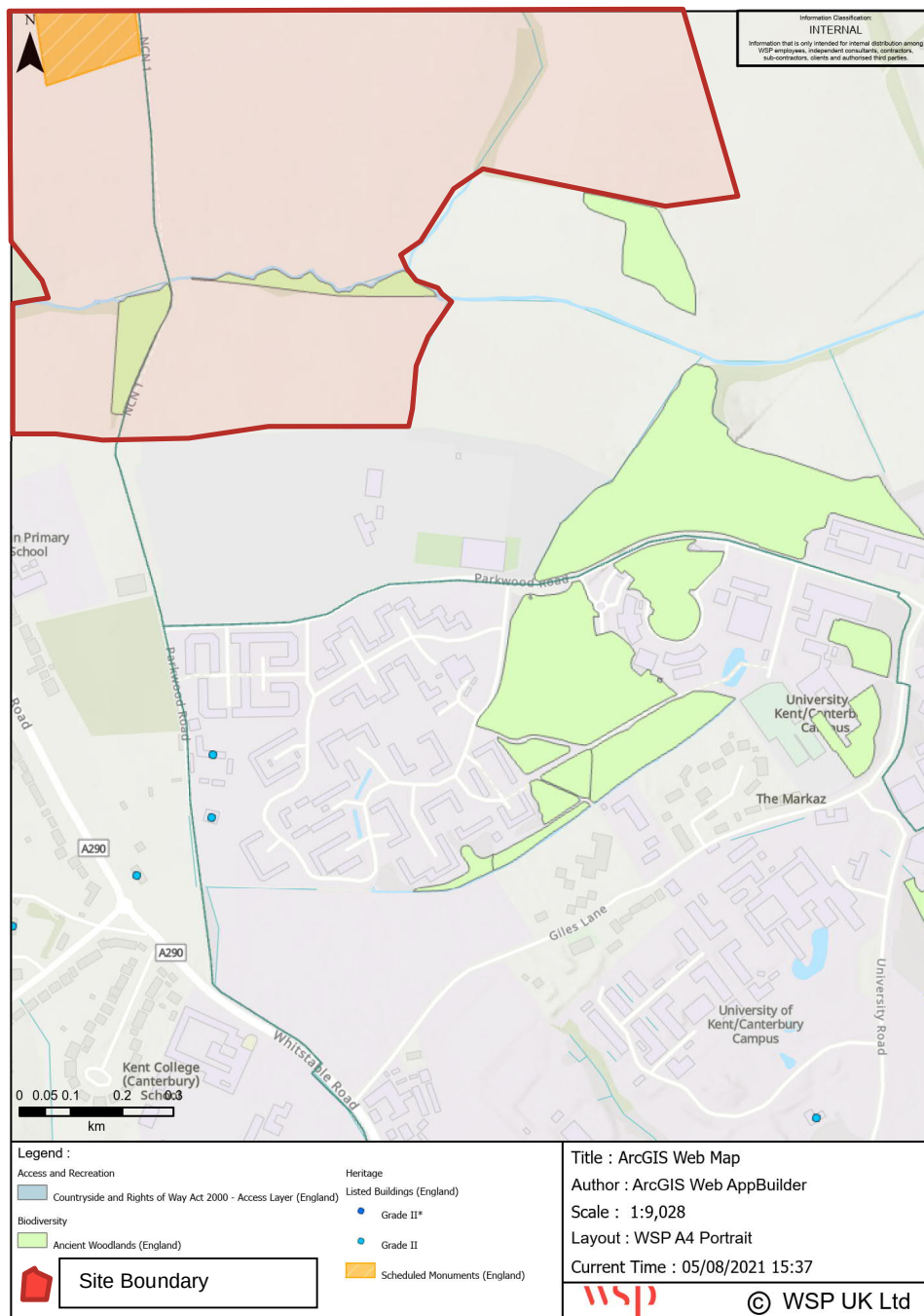
Various studies have been undertaken by WSP following submission of the representations to understand in more detail the potential impact on the woodland arising from the Development Proposals and to identify if the woodland areas should be included in Natural England's Ancient Woodland Inventory.

This Technical Note provides a summary of the work undertaken to date with the various studies included as appendices.

BACKGROUND

During initial consideration of land identified by UoK as suitable for disposal, a detailed environmental constraints and opportunities study¹ identified the potential presence of ancient woodland within Site B. The location of this potential ancient woodland is shown in **Figure 2**.

Figure 2 – Constraints Plan showing Ancient Woodland



¹ WSP Environmental Constraints and Opportunities Summary Report: Disposal Sites (July 2021)

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When considering vehicular access to Sites BCD the starting point was to investigate where the current sites connect with the public highway. The only existing point of connection to the public highway is Tyler Hill Road. Tyler Hill Road is a single carriageway road that connects the A290 Whitstable Road in the west with the village of Tyler Hill and Hackington Road in the east. In the vicinity of Sites BCD Tyler Hill Road is subject to national speed limit (60mph), varies in width between approximately 4m and 6m, is subject to a 7.5t weight restriction and in places features limited forward visibility.

In its current form Tyler Hill Road is not currently considered suitable to accommodate a significant increase in volumes of traffic. Due to the University's limited frontage onto Tyler Hill Road, constrained highway boundary extents and multiple land ownerships fronting the highway, the University has limited potential within its own land ownership to improve the existing Tyler Hill Road.

Consideration was given to whether access could be achieved through third party land acquisition. However, the multiple land ownerships restrict the ability to achieve this at this early stage (although opportunities may arise in due course). In addition, significantly increasing traffic volumes on this road could result in unacceptable impacts on the neighbouring village of Tyler Hill and upon the two junctions at either end (A290 and Hackington Road) which have been highlighted by Kent County Council during initial discussions as a concern.

On the basis of the above, the access strategy for unlocking Sites BCD recommended developing a new north-south route through the University Campus achieving access onto Whitstable Road. To discourage increased usage of Tyler Hill Road it was recommended that the existing road was downgraded where it passed through University owned land and the highway incorporated into the masterplan where design measures could be incorporated to manage through traffic and limit access from the development out onto the retained sections of road. Further benefits would be the ability to re-prioritise Tyler Hill Road as a sustainable transport link and improve crossing conditions for the Crab and Winkle Way. Further information on this access strategy is provided within the accompanying WSP Transport Strategy² and Preliminary Transport Appraisal³.

ACCESS ROAD CONSTRAINTS

Discussions with the UoK and outputs from the environmental constraints and opportunities analysis informed the constraints to provision of a new north-south access road through the University Campus. The key constraints identified and considered in the alignment options developed were as follows:

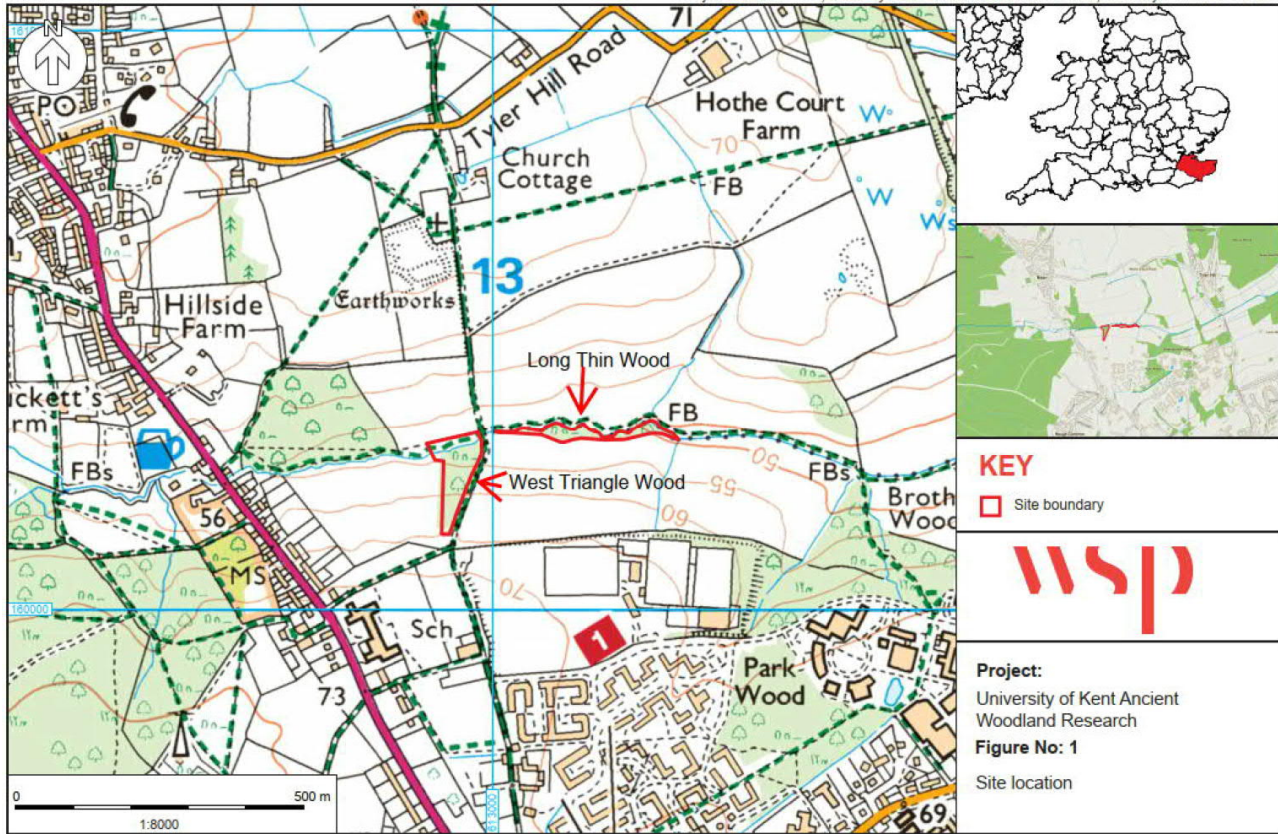
- Two areas of potential ancient woodland were identified in the south of Site B. The location of the two areas of potential ancient woodland are shown in **Figure 3**;
- The Crab and Winkle Way which forms part of National Cycle Route 1;
- The watercourse that runs adjacent to the ancient woodland and would need to be either bridged or culverted to achieve access through Site B;
- The sports pitches on the University Campus which form part of the University of Kent Sports Centre;
- The various buildings and land uses on the University Campus to the south of Park Wood Road that might be impacted by provision of a new access road;
- The Oaks Nursery and adjacent car park;
- The playing fields to the south of The Oaks Nursery which are identified in the University Masterplan for car and coach parking; and
- The listed buildings of Hothe Court, Barn Adjoining Hothe Court and Blean House.

² WSP Transport Strategy: Disposal Sites (August 2021)

³ WSP Preliminary Transport Appraisal: Disposal Sites BCD (February 2022)

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Figure 3 – Potential Ancient Woodland Location Plan



WSP 2022

ACCESS ROAD OPTIONS

Taking account of the constraints identified above a range of alignments were considered for the new access road to determine the potential impacts these may have on the existing University Campus and other constraints identified as part of the environmental studies such as the potential ancient woodland and watercourse. These access road options are shown in **Figure 4**.

Figure 4 – Access Road Alignment Options



Option 3 was identified as being the preferred alignment for the access road through the University and across the proposed development site for the following reasons:

- Minimised impacts on the University Campus including the Sports Pitches;
- Facilitated the University Masterplan by providing an access from Whitstable Road for provision of new car parks and amended bus routes;
- Minimised potential impacts on listed buildings when compared to other options explored;
- The road alignment, once consideration was given to likely earthworks could maintain a buffer to the potential ancient woodland of West Triangle Wood; and
- Through refinement of the design the road could potentially cross through the gap between the West Triangle Wood and the Long Thin Wood. To further minimise impacts in the vicinity of the potential ancient woodland a bridge could be used rather than a cheaper culvert type solution to narrow the alignment of the highway and potentially prevent loss of potential ancient woodland.

ANCIENT WOODLAND STUDIES

All of the options identified for the road involved passing through the area of potential ancient woodland that runs parallel to the watercourse within Site B (Long Thin Wood). In Summer 2021 an initial review of the potential ancient woodland was undertaken by WSP's Arboriculture and Ecology Teams to identify the potential status of the woodland. This review is contained within **Appendix A**. Whilst their review did not identify any trees that would indicate the woodland was ancient (defined as an area of woodland which has been continuously treed from before 1600AD) several trees were noted to have potential veteran characteristics, and these were located throughout the band of woodland.

Further work has now been carried out to consider the impacts of the access road on the potential ancient woodland.

A topographic survey was completed in December 2021 and January 2022 to accurately map the tree features across the proposed access road alignment and to provide more detailed information to enable refinement of the access road design.

An Arboricultural Impact Assessment (**Appendix B**) was subsequently undertaken to determine in detail the impact of the proposed access road on arboricultural assets. This study concluded that no veteran trees would be affected by the access road. In addition, the alignment of the access road as it passes through Long Thin Wood would be the optimum location to minimise impacts on the potential ancient woodland. The greatest area of impact on trees would be within the University's Campus but further work could be undertaken in due course to refine the proposals for the access road with the aim of further reducing impacts.

One of the conclusions of the Arboricultural Impact Assessment was that the status of whether Long Thin Wood is an ancient woodland or not should be confirmed. Separately historic map research has been undertaken by WSP's Heritage Team to further establish whether any evidence exists to indicate that the West Triangle Wood and Long Thin Wood should be classified as ancient woodland. The results of this research is contained in **Appendix C**.

Based on historic mapping research it seems highly likely that Long Thin Wood was not present before the 19th Century. However, it was more likely that West Triangle Wood had been in existence for longer.

SUMMARY AND CONCLUSIONS

The further work that has been undertaken on the areas of potential ancient woodland has demonstrated that the proposed alignment of the access road seeks to minimise impacts on Long Thin Wood whilst maintaining a buffer to West Triangle Wood that would seek to eliminate any impacts on that area of woodland.

The initial survey undertaken in Summer 2021 did not identify any trees that would indicate the woodland was ancient albeit some trees exhibited the potential to be veteran and some potential indicator species were identified in the ecology review.

The tree survey undertaken in 2022 has confirmed that no veteran trees will be impacted by the access road.

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The separate historic record search did not find evidence that the Long Thin Wood had been in existence before the 19th Century. However, it was more likely that West Triangle Wood had been in existence for longer.

It is therefore concluded that there is limited evidence to indicate that Long Thin Wood is ancient woodland (defined as an area of woodland which has been continuously treed from before 1600AD) and the design of the access road aims to minimise impacts on arboricultural features as well as avoiding West Triangle Wood.

The evidence gathered would not support the inclusion of Long Thin Wood on Natural England's Ancient Woodland Inventory.



TECHNICAL NOTE

Appendix A – Woodland Site Visit Technical Note

TECHNICAL NOTE

DATE:	05 August 2021	CONFIDENTIALITY:	Public
SUBJECT:	University of Kent: Long Thin Wood – Technical Summary		
PROJECT:	70080896	AUTHOR:	Howard Booth and Daniel Stewart
CHECKED:	Alan Heatley	APPROVED:	Justin Sherlock

INTRODUCTION

WSP has been appointed by the University of Kent (UoK) to provide transport and environmental advice for the development of proposals on land at their Canterbury Campus that has been identified as being surplus to requirement.

The access strategy for the masterplan identifies that an area of potential ancient woodland, referenced as Long Thin Wood could be impacted by the Proposed Development. This Technical Note provides a summary of the findings from a walkover survey undertaken on 16 July 2021 by Howard Booth and Daniel Stewart of WSP to assess the general characteristics of the woodland.

The walkover survey was a general survey of the site without sample plots. Throughout the walkover survey observations were made and evidence of past management such as earthworks were looked for along with recording tree species, size and evidence of tree work. The survey was not detailed and only sizes of the largest trees were recorded.

Long Thin Wood runs east west along the alignment of a stream. Woodland extends both side of the stream. As the woodland area to the south of the stream is potential ancient woodland this area is the main focus of this Technical Note.

LOCATION AND SCOPE OF SURVEY

Figure 1 illustrates the areas of Woodland surrounding and within the University Sites known as BCD. Long Thin Wood is identified as area two on **Figure 1**.

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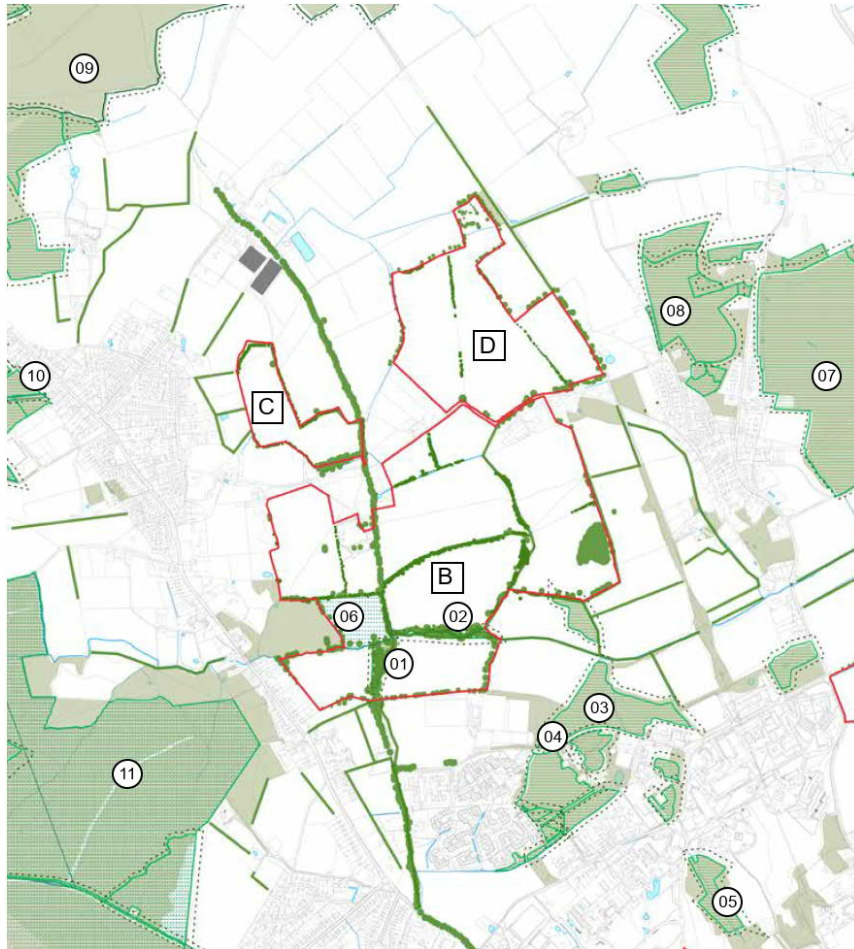


Figure 1: Woodland within vicinity of Site (Source: PRP)

The survey focused on the area of Long Thin Wood within the boundary of Site B only.

TREES

SPECIES

The woodland south of the stream is predominantly oak and ash. Common through the woodland is hazel and holly. Other trees present within the woodland include hawthorn, field maple, wild cherry, sweet chestnut, downy birch, willow, yew and alder.

Woodland north of the stream is dominated by willow and ash, other trees include oak, hazel, poplar, wild cherry, downy birch, hawthorn, field maple and elder.

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PAST MANAGEMENT

The oaks are maiden trees with the exception of one that was multi-stemmed at ground level and had probably been coppiced. Several ash trees have been coppiced but not for many years and these trees form part of the closed canopy of the mature woodland.

Along the southern edge of the woodland is evidence of hedge planting. These trees are suppressed by the larger woodland and herbaceous weeds from the field perimeter, the relatively small size of these plants and style of planting indicates this hedge is relatively modern.

Within the woodland there are several large trees that have collapsed, typically with root plate failure. Some have fallen across the stream and remain in-situ. There are two areas along the southern edge where wood chips were present within the woodland, it is assumed that these are arisings from branches that fell into the field and may have been in-situ for only a few years.

Along the southern side of the woodland there were two sections where barbed wire was present and attached to trees. No earth banks or mounds indicating historic boundaries or earth work were observed.

The ash trees appear to be infected with ash dieback. One stem of a coppiced tree is dead and other ash have sparse crowns. This disease could cause gaps within the woodland should more ash die or develop secondary infections reducing their safe retention.

Long Thin Wood is included within a Tree Preservation Order (TPO) which was made in 1970 and protects the site with an Area designation. Species scheduled in the TPO are oak, ash, poplar and willow, trees of these species present in 1970 are protected by the TPO. Work to those trees is restricted and would require consent from the local planning authority.

AGE

Establishing the age of trees can accurately be done if there are records of tree planting or core samples taken of the tree. In the absence of accurate information, estimates for age can be made based on the girth (circumference) of the tree. A method developed by Alan Mitchell assumes an average tree increases girth by 25mm each year for an open grown maiden tree. For trees in woodlands that value would be halved as they grow more slowly.

In the southern side of the woodland the oak were the largest diameter trees. The tree that appeared the largest was measured to have a girth at 1.5m above ground of 3420mm. The age of this tree would therefore be between 137 and 274 years old.

As the oak trees in Long Thin Wood typically have full crowns they are not typical of closed canopy woodland trees, that is to say their growth has only been slightly restricted. The nature of the site is such that using the woodland growth rate would overestimate their age, a more likely age range is in the region of 150 to 200 years old.

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Establishing the age of coppice stools is complicated by the centre of the stool having decayed away many years ago and unknown coppicing cycles. In his book *Trees and Woodland in the British Landscape* Oliver Rackham references aging of coppice stools. He gives an example of an ash stool on a poor quality waterlogged site being 0.6m diameter and 300 years old whereas an ash on a good site at 300 year old could be 1.5m diameter.

The ash coppice were approx. 1m in diameter, this was estimated as shapes were irregular and vegetation obstructed access around the base. Ground conditions on site appear to be good and based on the examples of Oliver Rackham the age of the ash coppice stools is likely to be much younger than 300 years, potentially younger than 200 years.

Other less common trees with multiple stems from the ground and indicative of coppice management were one sweet chestnut and a field maple. The sweet chestnut and field maple are of a similar size to the ash at approx. 1m diameter and may therefore be of a similar age to the ash.

Other tree species on site, given their sizes, are younger than the oak and ash. For example, a wild cherry is between 43 and 87 years old. Yew trees are particularly slow growing species, the two yew trees have diameters of 50mm and are relatively young.

ANCIENT WOODLAND

Ancient woodland in England is a classification used for an area of woodland that has been in continuous existence from before 1600AD.

Natural England owns the Ancient Woodland Inventory which is publicly accessible on DEFRA's MAGIC website and it was first developed in the 1980s and 1990s. In 2018 Natural England published *Ancient Woodland Inventory Handbook for England* which provides an overview of the inventory, its history and methods for improving its accuracy. At several points through the handbook it is referenced that the inventory is provisional by the nature in which it was compiled. It should therefore not be assumed that because a woodland is in the Ancient Woodland Inventory that it must be ancient and pre-date 1600AD.

Archives such as maps or estate records could be used to establish whether the site was woodland at different points of history.

It should be noted that if the site is confirmed not to be ancient woodland that there are several trees within it, especially the oak and ash that have some characteristics of being veteran trees. Further inspection is required to establish if they are veteran trees.

QUALITY ACROSS THE WOODLAND

Long Thin Wood does not appear in the Forestry Commission's woodland inventory as its area is less than 0.5ha. With regard to the area recorded as potentially ancient woodland, this only covers the south side of the stream and does not extend to the full extent of trees to the west.

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The woodland varies in width along its length and this appears to be influenced by the route of the stream. The narrowest part of the woodland is the western end and the widest is towards the middle.

While there is some variation in species and tree size through the woodland the general quality is relatively consistent. Areas of particular note highlighted in Image 1 are:

- A- The narrowest point of the woodland, the frequency of trees is reduced with gaps in the woodland canopy on the south of the stream
- B- Several coppiced ash with some veteran characteristics but also evidence of decline and disease
- C- Area of greatest variety of tree species

It should be noted that throughout the woodland, in areas A, B and C there are trees which have some veteran characteristics. There are several factors that influence whether a tree is a veteran; it is not based solely on size or age. A more detailed inspection of these potentially veteran trees is required to establish whether they should be classified as veteran trees.

Image 1 – Woodland overview



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SUMMARY AND CONCLUSIONS

Long Thin Wood has a mixture of native broadleaf trees with ash and oak the dominant species. There is evidence of past management of Long Thin Wood with coppice stools of predominantly ash. A more recent intervention was the planting of a hedge along the southern edge.

There is variation in the size of trees across the site and the largest oak are likely to be between 150 and 200 years old. There are several coppiced ash stools, the age of which is more difficult establish than maiden trees and those present are likely to be much younger than 300 years.

Long Thin Wood is shown in the Ancient Woodland Inventory, an inventory that records sites that have potential of being ancient. An ancient woodland is an area of woodland which has been continuously treed from before 1600AD. None of the trees within the woodland show signs of being in-situ prior to 1600AD. Other evidence such as maps or estate records Would be needed to confirm the status of Long Thin Wood as an ancient woodland.

Irrespective of the status of the woodland as ancient or not it has several trees which have some veteran characteristics. Further assessment of these trees is advised to ensure they are suitably considered in any potential work in or near the woodland.

Long Thin Wood is a mature woodland with typically closed canopy and the woodland varies in width. The western end of the woodland has the lowest frequency of trees relative to the rest of the woodland and includes trees which have some veteran characteristics.

ECOLOGY

Ground flora of the woodland habitat was not very diverse or had much variation throughout the site, mostly made up of ground Ivy. However, ground flora north of the watercourse running across the woodland had greater species diversity and flora cover than the habitat south of the watercourse. Although mostly dominated by ground ivy there were two small sections of *Hyacinthoides* sp in the south of the woodland. Due to the time of year and the plant not being in flower, it cannot definitely be identified down to species level, with it possibly being Common bluebell *Hyacinthoides non-scripta* which is an ancient woodland indicator or Spanish bluebell *Hyacinthoides hispanica* and *Hyacinthoides hispanica* x *non-scripta* (the most common hybrid) which have little ecological value as they are not native. Red campion which is also a species which is an ancient woodland indicator was also recorded throughout the Site in all areas. In addition to this another ancient woodland indicator Guelder rose was located on the woodland border on the south of the Site in very small quantities.

Throughout most of the habitat and at the woodland edge bramble and cleavers were present while garlic mustard was seen closer to the watercourse south west of the woodland. Areas of bracken made up the interior of the wood close to the watercourse embankment. As previously mentioned, Ash dieback was

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evident in the north and east of the Site, but as of present was not seen in the ash trees in the south and east of the site. Species were mostly native with Himalayan balsam heavily present in the north east of the Site which has replaced most of the native ground flora present within the inhabited area.

During the site visit a number of rabbit warrens and birds were observed throughout the site. There were multiple nests observed throughout the woodland in the canopy. In addition to this the woodland could support roosting bats due to splits, cracks and rot holes in the trunks and limbs, and ivy on the trees. Further information on protected species is found within the Preliminary Ecological Appraisal (PEA).

OTHER CONSIDERATIONS

A review of publicly accessible historical mapping has been undertaken to supplement the site visit and the recommendation to review historical records to determine whether the woodland pre-dates 1600AD. The review of publicly available sources identified a map produced by William Faden and published in 1809. Interpretation of this map¹ by WSP did not indicate the Long Thin Wood but does indicate wooded areas both to the east and west.

An older map published in 1769² by A. Dury and W. Herbert also does not indicate the woodland's presence at that time.

Further analysis of mapping available from the National Library of Scotland³ identified a map produced by Ordnance Survey that was surveyed between 1872-73 and published in 1877. This map⁴ does indicate the area of woodland referred to as Long Thin Wood.

The review of publicly accessible historic mapping indicates that the woodland dates back to at least the 1870s and this finding is commensurate with findings of the site visit. The earlier maps do not necessarily confirm the absence of the woodland as the scale of the mapping and cartography do not permit detailed analysis. However, they do suggest that the woodland may not have been present prior to the 1870s. Further work would be required to confirm this.

1

<https://www.davidrumsey.com/ll/detailView.html?&manifestUrl=https%3A%2F%2Fwww.davidrumsey.com%2Ffluna%2FServlet%2Fiiif%2Fm%2FRUMSEY~8~1~253703~5519088%2Fmanifest&os=0&lc=RUMSEY~8~1&baseUrl=%2F%2Fwww.davidrumsey.com%2Ffluna%2FServlet%2Fas%2Fsearch&mediaType=Image#?c=0&m=0&s=0&cv=0&r=0&xywh=29397%2C11263%2C3071%2C1307> accessed 21/07/2021

² https://biblio.unibe.ch/web-apps/maps/zoomify.php?pic=Ryh_1806_34.jpg&col=ryh accessed 22/07/2021

³ <https://maps.nls.uk/geo/find/#zoom=14&lat=51.27718&lon=1.09406&layers=102&b=1&z=1&point=51.28003,1.08025>
accessed 21/07/2021

⁴ <https://maps.nls.uk/view/102343537> accessed 21/07/2021

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SUMMARY

WSP has been appointed by the University of Kent (UoK) to provide transport and environmental advice for the development of proposals on land at their Canterbury Campus that has been identified as being surplus to requirement.

A potential area of ancient woodland located within Site B has been identified as being impacted by the masterplan proposals.

A site visit was undertaken to help establish the quality of the woodland (both from an arboricultural and ecological perspective) and the likely age.

The site visit found that the oldest tree (an oak) was likely to be between 150 and 200 years old, whilst coppiced ash stools are likely to be less than 300 years old.

Long Thin Wood is shown in the Ancient Woodland Inventory, an inventory that records sites that have potential of being ancient. An ancient woodland is an area of woodland which has been continuously treed from before 1600AD. None of the trees within the woodland show signs of being in-situ prior to 1600AD. Other evidence such as maps or estate records would be needed to confirm the status of Long Thin Wood as an ancient woodland. The review of publicly accessible historic maps confirms that the woodland was in existence around 1870 but may have not been present prior to this. Further work will be required to confirm this.

Irrespective of the status of the woodland as ancient or not it has several trees which have some veteran characteristics. This will need to be taken into account as the proposals are developed further.



TECHNICAL NOTE

Appendix B – Arboricultural Impact Assessment



University of Kent

CANTERBURY CAMPUS ACCESS ROAD ALIGNMENT

Arboricultural Impact Assessment Report





University of Kent

CANTERBURY CAMPUS ACCESS ROAD ALIGNMENT

Arboricultural Impact Assessment Report

TYPE OF DOCUMENT (VERSION) PUBLIC

PROJECT NO. 70080896

OUR REF. NO. 70080896-WSP-ARB-001

DATE: FEBRUARY 2022



University of Kent

CANTERBURY CAMPUS ACCESS ROAD ALIGNMENT

Arboricultural Impact Assessment Report

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QUALITY CONTROL

Issue/revision	First issue	Revision 1	Revision 2	Revision 3
Remarks	First issue	Final		
Date	February 2022	February 2022		
Prepared by	Mark Watson	Mark Watson		
Signature				
Checked by	Howard Booth	Mark Watson		
Signature				
Authorised by	Howard Booth	Howard Booth		
Signature				
Project number	70080896	70080896		
Report number	70080896-WSP-ARB-001			

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TREE PRESERVATION ORDERS

1 INTRODUCTION

1.1 PROJECT BACKGROUND

- 1.1.1. WSP UK Ltd has been appointed by University of Kent (UoK) to provide transport and environmental advice for the development of proposal on land at their Canterbury Campus that has been identified as being surplus to requirement. Disposal sites BCD lie to the immediate north of the University Campus. The access strategy proposes a new access road (hereafter referred to as 'The Proposed Development') through the University's Campus forming a junction on A290 Whitstable Road. A number of alignments for this road have been considered which have responded to various environmental and operational constraints identified as part of work undertaken to date.
- 1.1.2. The current route alignment is displayed below in Figure 1. The alignment seeks to follow the Crab and Winkle Way through the University Campus to Park Wood Road where a new junction would be formed. It then continues north on an alignment immediately to the east of the Crab and Winkle Way to minimise impacts on the UoK sports pitches before heading into the agricultural fields maintaining a buffer to the north-south aligned section of potential ancient woodland known as West Triangle Wood. The road then seeks to cross the east-west section of potential ancient woodland known as Long Thin Wood at the western end where the woodland is at its thinnest. North of the watercourse the alignment heads north east across agricultural fields and ties into Tyler Hill Road.

Figure 1- Site BCD Access Road Alignment



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1.2 SCOPE OF REPORT

- 1.2.1. The purpose of this report is to identify all trees which may be affected by the Proposed Development, to assess the impact of the Proposed Development upon those trees and to recommend such protection measures as are necessary to ensure the health of retained trees.
- 1.2.2. The scope and level of detail included within this report is commensurate with that required for the adequate consideration of arboricultural features as part of the Proposed Development.
- 1.2.3. Information provided complies with the requirements of British Standard BS 5837:2012 Trees in relation to design, demolition and construction – Recommendations and includes reference to:
 - results of a BS 5837 walkover survey;
 - an Arboricultural Impact Assessment (AIA); and,
 - an Outline Arboricultural Method Statement (AMS).
- 1.2.4. Impacts should be defined as an assessment of arboricultural removals and identification of matters to be addressed within an AMS.

1.3 LIMITATIONS

- 1.3.1. Provisional Tree Preservation Orders (TPOs) may be made whenever a local planning authority deems it appropriate with only those persons interested in the land served with a copy of the Order. Because of this, any reference to the presence of TPOs is only valid on the date at which the desk study search was undertaken. In instances where works unspecified in this report are to be undertaken, and which may impact trees, a further search for the presence of TPOs should be carried out prior to commencement.
- 1.3.2. Trees are dynamic organisms which are influenced by a variety of environmental variables and whose health and condition can rapidly change. Because of this, any recommendations made within this report are valid for a period of 24 months from the date of survey, when any site conditions change or pruning or other works unspecified in the report are carried out to, or affecting, the subject trees, whichever is the sooner.
- 1.3.3. This report does not constitute a health and safety survey. Where concerns for tree health and safety exist then necessary and appropriate tree inspections should be carried out.

1.4 RELEVANT LEGISLATION, POLICY AND GUIDANCE

- 1.4.1. This report has been compiled with reference to the following legislation, policy and guidance.

LEGISLATION

- *The Town and Country Planning Act 1990*

POLICY

- National Planning Policy Framework (NPPF) (revised 20 July 2021)
- Canterbury District Local Plan (July 2017)

GUIDANCE

- British Standards Institute. BS 5837: 2012 *Trees in relation to design, demolition and construction – Recommendations*. London: BSI

1.5 ABBREVIATIONS OF TERMS USED

Table 1-1 – List of abbreviations used within this report

Acronym	Definition
AIA	Arboricultural Impact Assessment
AMS	Arboricultural Method Statement - A methodology for the implementation of any aspect of development which is within the root protection area, or has the capacity to adversely affect, any retained tree.
BS 5837	British Standard BS 5837:2012 'Trees in relation to design, demolition and construction – Recommendations'. This standard <i>'gives recommendations and guidance on the relationship between trees and the design, demolition and construction process. It sets out the principles and procedures to be applied to achieve a harmonious and sustainable relationship between trees and structures'</i> .
CEZ	Construction Exclusion Zone - An area within which all site clearance and construction activities, access and storage of materials are prohibited.
RPA	Root Protection Area - Layout design tool indicating the minimum area around a tree deemed to contain sufficient roots and rooting volume to maintain the tree's vitality.
TPO	Tree Preservation Orders - An order made by the Local Planning Authority to protect specific trees, groups of trees or woodlands in the interests of amenity.

2 METHODS

2.1 STUDY AREA

- 2.1.1. The study area comprises land within the site extent shown in Appendix C and a buffer of up to 15m. The purpose of the 15m buffer is to ensure compliance with BS 5837 which recommends that all arboricultural features whose Root Protection Areas (RPAs) may be impacted are identified, surveyed and included within the assessment. The British Standard caps RPAs to a maximum radius of 15m, hence the extent of the buffer. Trees outside of the Proposed Development but within the 15m buffer which are small have not been included within this assessment report.

2.2 DESK STUDY

- 2.2.1. A desk study has been undertaken on 27 January 2022 as a means of identifying any statutory and non-statutory arboricultural constraints which may apply to arboricultural features within the study area.
- 2.2.2. The desk study review, details of the method are set out in Appendix A, was undertaken to establish the following statutory and non-statutory arboricultural constraints:
- tree preservation orders;
 - conservation areas;
 - ancient woodland; and
 - ancient or veteran trees.

2.3 WALKOVER SURVEY

- 2.3.1. A walkover survey of trees within the study area was undertaken between the 12 and 14 January 2022. The survey was undertaken to comply with BS 5837 and details of the method used are presented in Appendix A.
- 2.3.2. Where access was restricted, mainly due to vegetation or being on adjoining private land, dimensions have been estimated.

2.4 PROVIDED DESIGN INFORMATION

- 2.4.1. The following documents and plans have been viewed and used to formulate this report and arboricultural assessment:
- UoK Access Strategy Technical Note (Document Reference: 210806)
 - Access Road Horizontal Alignments Plan (Drawing Number: 0896-SK-0002)
 - Long Thin Wood Technical Note (Document Reference: 210722).
 - Topographical survey

3 ARBORICULTURAL SURVEY FINDINGS

3.1 DESK STUDY FINDINGS

- 3.1.1. The desk study established that the Proposed Development intersects two conservation areas; Blean Conservation Area and Hothe Court Conservation Area. Both of these conservation areas are located towards the southern end of the Proposed Development.
- 3.1.2. There are two TPOs in the study area protecting trees as individuals and within groups and area designations. A summary is shown in Table 3-1 of trees protected and the original TPO plans are shown in Appendix E.

Table 3-1 – Details of TPOs within the study area

TPO Reference	TPO Location	TPO Description	WSP Reference
2/1970/BLE	Hothe Court Park Wood Road Canterbury CT2 7SR	T1 - Maple	Not matched
		T2 - Holm oak	Not matched
		T3 - Scots pine	Not matched
		T6 - Scots pine	Not matched
		G1 - Group consisting of 3 Holm Oak, 3 Maple and 1 Sycamore	G107 (Norway maple, Sycamore) G111 (holm oak)
		G2 - Group consisting of 2 False Acacia, 2 Holly, 1 Horse Chestnut, 1 Lawsons Cypress, 2 Lime, 2 Maple, 1	G113 (horse chestnut, sycamore) G115 (false acacia)
		G3 - Group consisting of 1 Maple, 1 Oak, 4 Scots Pine and 1 Sycamore	G117 (oak) G118 (sycamore, Norway maple)
4/1970/BLE	Land To The Rear Of Even Numbered Properties Of Tile Kiln Hill Blean CT2 9EE	A1 - The several Ash, Birch, Gean, Hornbeam, Horse Chestnut, Oak and Poplar trees standing in the area numbered A1 on the map	W52
		A2 - The several Oak, Ash, Poplar and Willow trees standing in the area numbered A2	W62

- 3.1.3. The desk study established that there is woodland recorded by Natural England within the Ancient Woodland Inventory. The woodland areas are known as West Triangle Wood and Long Thin Wood which are recorded as W52 and W62 respectively, within the arboricultural survey schedule in Appendix B.

- 3.1.4. The desk study found no records of ancient or veteran trees listed on the Ancient Tree Inventory within the study area. The survey found trees displaying some veteran characteristics, however no trees were assessed as possessing sufficient characteristics to meet the National Planning Policy Framework criteria of ancient or veteran trees.

3.2 WALKOVER SURVEY FINDINGS

- 3.2.1. The Proposed Development comprises predominantly of public greenspace and agricultural arable land. Some of the study area is located within and adjacent to student accommodation residential areas. A public footpath and National Cycle Network Route 1 runs the length of the scheme connecting Whitstable Road to the agricultural fields in the north.
- 3.2.2. The arboricultural survey schedule at Appendix B details the trees in the study area, a summary of tree quality categories is in Table 3-2. The locations of arboricultural features are shown on the Tree Constraints Plan at Appendix C.

Table 3-2 – Summary of tree quality categories

BS 5837 Category	Quality	Individual Trees	Groups	Woodland	Totals
Category B	Moderate	67	47	2	116
Category C	Low	9	9	0	18
Category U	None	1	0	0	1
Totals	-	77	57	1	135

4 ARBORICULTURAL IMPACT ASSESSMENT

4.1 SCOPE OF ASSESSMENT

- 4.1.1. The scope of this assessment has been established with reference to BS 5837. The scope of assessment is to evaluate the likely effects of the Proposed Development on arboricultural features and where necessary recommend mitigation.
- 4.1.2. The assessment includes specific reference to the effects of tree loss and other potentially damaging activities which could foreseeably occur in the vicinity of retained trees. Further reference is made concerning recommendations for mitigation, including those matters which require inclusion within an AMS.

4.2 ASSUMPTIONS AND LIMITATIONS

- 4.2.1. This AIA report has been compiled on the basis of the following assumptions:
 - All construction activities will be confined to within the boundaries of the Proposed Development;
 - Areas of hard surfacing will be utilised wherever possible for haulage routes, site compounds and material storage; and
 - That no access or tree removal on third party land will be required to facilitate the Proposed Development.
- 4.2.2. The following limitation applies to this AIA report:
 - Enabling works (such as the installation or diversion of services by statutory undertakers beyond the study area) have not been considered.

4.3 ARBORICULTURAL FEATURES TO BE REMOVED

- 4.3.1. The Proposed Development is shown in relation to arboricultural features in drawing number 70080896-WSP-ARB-002 in Appendix D.
- 4.3.2. The Proposed Development will result in the loss of ten arboricultural features (T21, G40, T41, T42, T64, G99, G101, T125, T128 and T130) and the partial removal of ten arboricultural features (G4, G14, G15, G22, G45, W62, G95, G98, G100 and G116).
- 4.3.3. The Long Thin Wood (W62) is recorded by Natural England potential ancient woodland but this has not been confirmed. The Proposed Development alignment is designed to go through Long Thin Wood at the narrowest section of woodland to reduce impact. As it is in close proximity to the existing river crossing that could be used during construction to further reduce impact of construction works.
- 4.3.4. National Planning Policy Framework states that developments resulting in deterioration of ancient woodland should be refused unless there are wholly exceptional reasons. The woodland is potential ancient woodland and the status of whether it is ancient woodland should be confirmed to enable the impact to be confirmed. Assessing ancient woodland status could be undertaken by checking historic maps and records, assessment of tree age and botanical survey looking for indicator species.

4.4 OTHER ARBORICULTURAL IMPACTS

- 4.4.1. Other identified arboricultural impacts associated with the construction work for the Proposed Development are recorded in Table 4-1. These arboricultural impacts are activities which have the potential, if uncontrolled, to cause damage to arboricultural features which are retained.
- 4.4.2. Table 4-1 also provides details of the arboricultural features which are at risk of damage, the likely cause of damage and the mitigatory measures which are required. Implementation of the recommended mitigatory measures will be sufficient to ensure that arboricultural features can be retained without significant loss of value or a notable reduction in health or longevity.

Table 4-1 – Other identified arboricultural impacts, proposed mitigation and likely effects

Features	Cause of Impact (construction of)	Potential Impact	Mitigatory Measures
All retained features	Contractor spatial working requirements during demolition and construction (below ground impact).	Soil compaction and root damage for contractor spatial working requirements. Loss of vitality and decline in health. Reduction in quality of trees / potential death of trees.	Establish a construction exclusion zone (CEZ) within an AMS for duration of demolition which is demarcated by a tree protection fence. Where access only is required temporary ground protection measures could be installed to prevent soil compaction and root damage.
All retained features	Contractor spatial working requirements during demolition and construction. (above ground impact).	Injurious contact with above ground elements of retained trees. Loss of vitality and decline in health. Reduction in quality of trees / potential death of trees.	Establish a CEZ within an AMS for duration of demolition and construction and arboricultural supervision during demolition and construction near trees. Requirements for formative pruning to avoid injurious contact are to be determined with arboricultural supervision prior to commencing all activities. These are likely to include canopy lifting of trees along the western boundary.

- 4.4.3. The indicative RPAs used for design are based on a symmetrical circle and are shown in the Tree Constraints Plan drawing number 70080896-WSP-ARB-001 (see Appendix C). The shape of RPAs can be adjusted to ensure that sufficient area, and therefore soil volume is protected. An adjusted RPA has not been drawn but the location of the tree protection fence provides sufficient area around the retained trees to ensure protection during construction.
- 4.4.4. The Preliminary Tree Removals Plan 70080896-WSP-ARB-002 (see Appendix D) indicates the arboricultural features assessed as requiring full or partial removal to facilitate the Proposed Development.
- 4.4.5. As the design develops, CEZs should be established and tree protection measures detailed within an AMS.

4.5 MITIGATION

- 4.5.1. Through implementing appropriate tree protection measures, all retained trees can be kept without detrimental impact on them. With regard to W52 and W62 which are potential ancient woodland should be a buffer zone of at least 15m to protect the habitat of the woodlands from the Proposed Development.
- 4.5.2. New tree planting to offset the tree loss associated with implementing the Proposed Development should be considered within a proposed landscape design in line with local policy LB10 (Trees, Hedgerows and Woodland).
- 4.5.3. Management of woodland could enhance the river corridor within areas recorded as G59 and W62 in line with local policy LB8 (Landscape Scale Biodiversity Networks).

4.6 ARBORICULTURAL METHOD STATEMENT

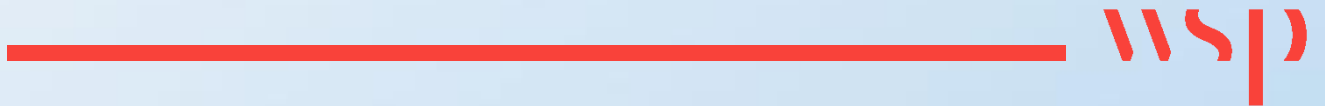
- 4.6.1. The following matters should be addressed within an AMS once the detailed design has been established.
 - arboricultural monitoring;
 - tree protection fencing; and
 - temporary hard surfaces in RPAs.
- 4.6.2. It is recommended that this AMS be viewed as a 'living document'. It should therefore be reviewed, and if necessary updated as and when required. It is anticipated that a pre-commencement site meeting would be required with the Local Planning Authority Tree Officer to confirm tree protection measures.
- 4.6.3. All tree works undertaken must comply with British Standard 3998:2010 – Tree Work Recommendations and should therefore be carried out by skilled tree surgery contractors.

5 SUMMARY AND CONCLUSIONS

- 5.1.1. The Proposed Development would require the full or partial removal of 17 arboricultural features including within Long Thin Wood.
- 5.1.2. The current alignment of the access road through Long Thin Wood would require partial removal of W62 and the full removal of the oak tree T64.
- 5.1.3. The proposed crossing point for the stream is considered to be the best location in terms of minimising tree removals within Long Thin Wood. To establish whether National Planning Policy Framework is satisfied with regard to the removal it should be confirmed whether the potential ancient woodland is ancient woodland.
- 5.1.4. The highest arboricultural impact is assessed in the vicinity of Park Wood Road.
- 5.1.5. As detailed design developments an AMS should be produced to detail mitigation measures for retained trees, this should include a tree protection plan indicating the alignment of protection fencing and areas requiring special measures during the construction phase.

Appendix A

ARBORICULTURAL SURVEY METHOD



SURVEY METHODOLOGY

METHOD OF BASELINE DATA COLLECTION

Baseline data collection has been undertaken with reference to BS 5837 and uses the following data sources:

- An environmental desk study, and;
- A walkover survey of all arboricultural features within the study area.

DESK STUDY

The arboricultural desk study for the Proposed Development was undertaken to accompany the previous planning application. The desk study reviewed arboricultural information available in the public domain.

The desk study considered tree preservation order, conservation areas, ancient woodland and ancient/veteran trees.

WALKOVER SURVEY

A walkover survey was undertaken between 12 and 15 January 2022.

The walkover survey was undertaken in accordance with the following criteria:

- Arboricultural features have been recorded as individual trees or tree groups where this has been deemed appropriate. Tree groups have been recorded on the basis that they form distinct arboricultural features either aerodynamically, visually or because they contain trees of similar cultural and biodiversity value.
- The trees have been visually inspected from ground level only.
- No tissue samples were taken nor was any internal investigation of the subject trees undertaken.
- Tree heights and crown spreads have been estimated to the nearest 1m.
- Notes have been recorded where they relate to the quality of the arboricultural feature.
- Management recommendations have been provided where work is necessary for the abatement of a hazard which presents a high level of risk to persons or property.

Stem diameters have been measured in accordance with Annex C of BS 5837. Diameters of single stem trees on level ground have been measured at 1.5m above ground level. The diameters of other commonly encountered stems have been measured as per the guidance. The combined stem diameters for multi-stemmed trees have been calculated in accordance with BS 5837 paragraph 4.6.1.

By default, Root Protection Areas (RPAs) are calculated as an area equivalent to a circle with a radius 12 times the stem diameter.

QUALITY ASSESSMENT

The quality of arboricultural features has been determined in accordance with BS 5837 Table 1 a copy of which is provided in Figure 1-A. The purpose of the quality assessment is

to enable informed decisions to be made regarding the removal and retention of arboricultural features in the context of development. For an arboricultural feature to be included within a particular quality category it should accord with the description provided.

The quality of each arboricultural feature is defined based on its sub-category. Sub-categories carry equal weight, do not influence retention priority and are simply included to indicate the primary value associated with each surveyed item. Sub-categories 1, 2 and 3 are intended to reflect arboricultural, landscape and cultural values, respectively.

The quality and sub-category assigned to each arboricultural feature are identified within the Arboricultural Survey Schedule included in Appendix B of this report.

Figure A-1 - BS 5837 Table 1 - Cascade Chart for Tree Quality Assessment

Table 1 Cascade chart for tree quality assessment

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

NOTES AND LIMITATIONS

Arboricultural survey data is of a preliminary nature and has been collected based on a walkover survey.

Only defects visible from the ground have been noted and each individual feature may not have been inspected closely due to access difficulties, the presence of dense ivy, other vegetation or safety constraints. Safety related features have not been recorded on the basis that the arboricultural features will be subject to a normal programme of tree hazard assessment and only those features which materially affect the quality of the feature or pose a real and immediate safety concern have been recorded.

Arboricultural survey data is typically valid for a period of two years unless otherwise stated. Significant environmental events (such as extreme weather conditions) or changes within the study area may render it invalid within a shorter timescale.

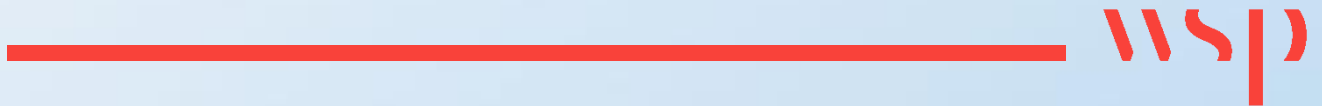
Whilst arboricultural surveys are not seasonally limited it is the case that certain pests and diseases may be more or less evident at different times of the year. This is especially true of certain wood decaying fungi such as the Giant Polypore (*Meripilus giganteus*) where fruiting bodies are short-lived, and the early stages of root decay may not result in other identifiable symptoms. Walkover survey data is therefore based upon observations made at the time of the site visit and may be subject to change should further or more detailed inspections be undertaken.

The survey has only been undertaken from land within the client's ownership, from public land or from areas where formal access has been arranged.

The position of arboricultural features has been estimated using aerial photography and topographical information within provided plans.

Appendix B

ARBORICULTURAL SURVEY SCHEDULE



KEY - ARBORICULTURAL SURVEY SCHEDULE

REFERENCE ABBREVIATIONS

- G – Group
- T – Tree
- W – Woodland

MEASUREMENTS

Height is estimated to provide a relative indication of tree size.

Stem Diameter measurements are in accordance with BS 5837:2012. Abbreviations used:

- av – mean average
- e – estimated

Crown spread for individual trees was estimated in the four cardinal points.

LCH is the lowest canopy height. It is an estimate of the lowest point of foliage above ground level of the tree indicating the clearance below the tree.

LBH is the lowest branch height and is the height above ground level of the first branch union.

ASSESSMENTS

Life stage:

- Y – Young – planted within the last three years (unless heavy/extra heavy standard
- SM – Semi-mature – <25% estimated life expectancy
- EM – Early Mature – < 50% estimated life expectancy
- M – Mature – >50% estimated life expectancy

Physiological condition:

- G – Good
- F – Fair
- P – Poor
- D – Dead

Structural condition:

- G – Good
- F – Fair
- P – Poor
- U – Unstable

Estimated remaining contribution - <10 years, 10+ years, 20+ years or 40+ years.

BS 5837 Category – A, B, C or U with a single sub-category recorded as 1, 2 or 3.

ROOT PROTECTION AREA

RPA is the radius of a circular Root Protection Area associated with the tree as measured from the centre of the stem. For arboricultural features where more than one stem diameter is recorded the RPA radius is calculated using the largest dimension.

Ref.	Species	Height (m)	Stem Dia. (mm)	Crown Spread N, E, S, W	LCH (m)	LBH (m)	Life Stage	Physiological Condition	Structural Condition	Tree Condition Notes & Observations	RPA Rad. (m)	Estimated Remaining Contribution	BS5837 Category
T1	Leyland cypress	17	650e	4 - 5 - 6 - 6	2	1	M	F	F	In front garden of house. 2m from edge of pavement.	7.8	20+	B1
T2	Beech	20	750e	9 - 9 - 9 - 9	3	2.5	M	F	F	Front garden of no1 Highfield Close. 4m from pavement.	9	20+	B1
G3	Leyland cypress	15	670av	5 - 5 - 5 - 5	2	1	M	F	F	Front garden of house no1 Highfield Close.	8	20+	B2
G4	Hawthorn, English elm	7	180e	3 - 3 - 3 - 3	0	0	EM	F	F	Prolific ivy. Some dead standing Elm stems. Unmanaged group. Located on slight road embankment.	2.2	10+	C2
T5	Field maple	11	350e	6 - 6 - 4 - 5	2	2	EM	F	F	Prolific ivy to mid canopy. Pruning on west side next to road.	4.2	20+	C1
T6	Red oak	20	640	3 - 3 - 8 - 8	2	2	M	F	F	Minor deadwood. Open canopy.	7.7	40+	B1
T7	Red oak	20	730	10 - 10 - 10 - 10	3	2	M	F	F	Moderate deadwood. Open canopy.	8.8	40+	B1
T8	Red oak	20	720	10 - 10 - 10 - 10	3	2	M	F	F	Moderate deadwood. Open canopy. Unidentified fungi at base appears to be a puff ball.	8.6	40+	B1
T9	Sycamore	14	400av	6 - 6 - 6 - 6	3	0	EM	F	F	3 stemmed. Largest 450mm dbh.	4.8	40+	B1
T10	Sycamore	16	350av	7 - 7 - 7 - 7	4	2	EM	F	F	Dual stem from base. Minor deadwood < than 75mm diameter	4.2	40+	B1
T11	Ash	15	610	7 - 7 - 7 - 7	3	2	EM	F	F	Bark canker. Uncharacteristic epicormic response.	7.3	20+	B1
T12	Sycamore	15	420e	6 - 6 - 6 - 6	4	4	EM	F	F	Offsite behind fence.	5	40+	B1
T13	Sycamore	13	300e	4 - 4 - 4 - 4	4	4	SM	F	F	Offsite behind fence.	3.6	40+	B1
G14	English oak, sycamore, silver birch	16	510av	6 - 6 - 6 - 6	3	2	EM	F	F	Line of trees. Some stems with ivy. Hedge planting of evergreen shrubs.	6.1	40+	B2
G15	Leyland cypress	6	330av	2 - 2 - 2 - 2	0	0	EM	F	F	Reduced in past at 3m.	4	10+	C2
G16	Norway maple, sycamore, scots pine, crack willow, common walnut, hornbeam, ash	13	390av	5 - 5 - 5 - 5	1	1	SM	F	F	Some bark damage from track.	4.7	40+	B2
T17	Crack willow	16	500av	7 - 7 - 7 - 7	3	2	M	F	F	Minor deadwood. Small branch failures. Dual stem.	6	40+	B1
G18	Sycamore, silver birch	13	170av	3 - 3 - 3 - 3	2	1	SM	F	F	Located within allotment area. Self seeded.	2	40+	C2
G19	Leyland cypress	7	420av	2 - 2 - 2 - 2	0	0	EM	F	F	Heavily reduced.	5	20+	C2
G20	Norway maple, western red cedar	13	330av	5 - 5 - 5 - 5	2	1	SM	F	F	Minor deadwood.	4	40+	B2
T21	Silver birch	14	380e	6 - 6 - 6 - 6	3	2	M	F	F	Planted in hedge.	4.6	20+	B1

Ref.	Species	Height (m)	Stem Dia. (mm)	Crown Spread N, E, S, W	LCH (m)	LBH (m)	Life Stage	Physiological Condition	Structural Condition	Tree Condition Notes & Observations	RPA Rad. (m)	Estimated Remaining Contribution	BS5837 Category
G22	Beech, hazel, laurel	7	110av	2 - 2 - 2 - 2	0	0	SM	F	F	Pyracantha present.	1.3	40+	B2
T23	Eucalyptus	17	1000	6 - 6 - 6 - 6	0.5	2	M	F	F	Minor deadwood. Old pruning wounds. 3 stems from 2m. DBH measured at 1m.	12	40+	B1
G24	Apple, pear, plum, hazel, damson, English oak	7	310av	3 - 3 - 3 - 3	0	1	M	F	F	Mature orchard with self set Oak.	3.7	40+	B2
T25	English oak	14	480e	5 - 5 - 5 - 5	4	2	EM	F	F	Prolific ivy. Minor deadwood.	5.8	40+	B1
T26	Sycamore	15	350av	7 - 7 - 7 - 7	3	0	M	F	F	Moderate deadwood. 6 stems. Slime flux.	4.2	40+	B1
T27	Hawthorn	8	170av	3 - 3 - 3 - 3	2	2	EM	F	F	Prolific ivy.	2	20+	C1
T28	English oak	13	440e	5 - 5 - 5 - 5	3	4	EM	F	F	Minor deadwood.	5.3	40+	B1
T29	Silver birch	15	310	5 - 5 - 5 - 5	4	2	EM	F	F		3.7	40+	B1
G30	English oak, hawthorn, holly, blackthorn, hazel, elder	22	900av	7 - 7 - 7 - 7	0	0	M	F	F	Predominately mature Oaks with potential to be historic field boundary of hedge. Prolific ivy to upper canopies. Minor deadwood. Cavities at base.	10.8	40+	B2
G31	Silver birch, ash	17	410av	7 - 7 - 7 - 7	4	6	EM	F	F	2 moderate sized (75-150mm diameter size) snapped branches in Ash. Minor deadwood.	4.9	20+	B2
G32	Ash	20	470av	7 - 7 - 7 - 7	4	3	EM	F	F	Tree tag on one tree 0723. Minor deadwood.	5.6	40+	B2
G33	Silver birch, English oak, field maple	16	540av	8 - 8 - 8 - 8	3	2	M	F	F	3 field maples are mature and the rest are early mature. Minor deadwood.	6.5	40+	B2
G34	Silver birch, field maple, rowan	15	450av	7 - 7 - 7 - 7	3	1	M	F	F	4 field maples are mature and the rest semi mature. 7 trees in total. Minor deadwood.	5.4	40+	B2
G35	Silver birch, field maple, horse chestnut	17	650av	7 - 7 - 7 - 7	2	1	M	F	F	Some pruning wounds. Minor deadwood.	7.8	40+	B2
G36	English Oak, field maple, hawthorn, yew, hornbeam, Norway maple, wild cherry	18	850av	9 - 9 - 9 - 9	1	2	M	F	F	Some ivy on stems. Evidence of past management. Located in Blean Primary School. Minor deadwood.	10.2	40+	B2
G37	English oak, silver birch, field maple	16	530av	6 - 6 - 6 - 6	4	1	M	F	F	Tag no 0271. Previous management pruning wounds.	6.4	40+	B2
G38	western red cedar, silver birch	12	370av	5 - 5 - 5 - 5	0	0	EM	F	F	Dense vegetation.	4.4	40+	C2
G39	Hornbeam, hazel, hybrid black poplar	8	320av	4 - 4 - 4 - 4	0	0	SM	F	F	Prolific ivy. Previous pruning works.	3.8	40+	C2
G40	English oak, rowan, field maple, goat willow	7	290av	4 - 4 - 4 - 4	1	1	SM	F	F	Some crown lifting. Minor stem damage.	3.5	40+	B2
T41	English oak	13	510	7 - 7 - 7 - 7	2	1	EM	F	F	Minor deadwood.	6.1	40+	B1
T42	English oak	9	390	7 - 7 - 7 - 7	2	2	EM	F	F	Minor deadwood. Crown lifted.	4.7	40+	B1

Ref.	Species	Height (m)	Stem Dia. (mm)	Crown Spread N, E, S, W	LCH (m)	LBH (m)	Life Stage	Physiological Condition	Structural Condition	Tree Condition Notes & Observations	RPA Rad. (m)	Estimated Remaining Contribution	BS5837 Category
G43	Ash, field maple, English oak, blackthorn, wild cherry	18	400av	8 - 8 - 8 - 8	0	0	EM	F	F	Boundary screening with minimal management and minor deadwood.	4.8	40+	B2
G44	Field maple, hornbeam, silver birch, hawthorn	11	250av	4 - 4 - 4 - 4	0	0	SM	F	F	Some crown lifting. Reductions to circa 3m at northern end.	3	40+	B2
G45	English oak, field maple, common lime, alder, whitebeam, sycamore, wild cherry	13	230av	4 - 4 - 4 - 4	1	1	EM	F	F	Landscape screen planting. Predominately on bank with northern section of group previously topped at circa 4m. Minor deadwood. Crown lifting.	2.8	40+	B2
T46	Ash	19	660av	9 - 9 - 10 - 7	4	4	M	F	P	Prolific ivy to circa 8m obscuring inspection. Dual stem. Cavity at base on south side. Ivy obscuring inonotus brackets on all stems. Minor canopy deadwood. Hanging stem fracture on south side. Other crown cavities.	7.9	20+	C3
T47	English oak	20	620e	8 - 10 - 10 - 2	5	6	EM	F	F	Asymmetrical lean. Ivy on stem.	7.4	40+	B1
G48	English oak	15	450e	7 - 7 - 7 - 7	6	6	EM	F	F	Prolific ivy. Minor deadwood.	5.4	40+	B2
T49	English oak	24	950	9 - 11 - 9 - 13	6	6	M	F	F	Prolific ivy. Moderate deadwood. Crown cavities.	11.4	40+	B3
T50	English oak	18	650	8 - 6 - 5 - 8	5	3	M	F	F	Moderate deadwood.	7.8	40+	B1
T51	English oak	24	1050	10 - 12 - 12 - 10	5	5	M	F	F	Large spreading tree with buttress roots and moderate size deadwood.	12.6	40+	B2
W52	English oak, hazel, holly, hawthorn, wild cherry, field maple, ash	25	900av	12 - 12 - 12 - 12	0	0	M	F	F	Predominately mature oak woodland with pen understorey of holly and hazel. Trees with moderate deadwood. Storm damaged limbs typical of an unmanaged woodland. Largest oak tree recorded at 1050mm diameter. 1 oak tree with ganoderma fungal body at base.	10.8	40+	B3
T53	English oak	22	850	7 - 11 - 11 - 11	5	6	M	F	F	Ivy. Hanging limbs. Storm damage.	10.2	40+	B3
T54	English oak	24	920	10 - 13 - 8 - 8	6	6	M	F	F	Major deadwood (> 150mm diameter) in mid canopy to west. Moderate deadwood elsewhere.	11	40+	B1
T55	Ash	18	400	7 - 7 - 7 - 0	4	4	EM	F	F	Asymmetrical canopy with lean to east.	4.8	40+	C1
T56	English oak	24	1110	12 - 13 - 15 - 13	5	5	M	F	F	Major diameter deadwood. Open canopy. Pruning wound cavities. Hanging deadwood. Storm damage fractures.	13.3	40+	B1
T57	English oak	18	580	10 - 11 - 4 - 1	4	6	EM	F	F	Prolific to upper canopy. Asymmetrical canopy leaning over footpath to east. Minor deadwood.	7	40+	C1

Ref.	Species	Height (m)	Stem Dia. (mm)	Crown Spread N, E, S, W	LCH (m)	LBH (m)	Life Stage	Physiological Condition	Structural Condition	Tree Condition Notes & Observations	RPA Rad. (m)	Estimated Remaining Contribution	BS5837 Category
T58	English oak	23	1050	12 - 12 - 12 - 12	6	5	M	F	F	Large open spreading tree with moderate size deadwood and crown cavities.	12.6	40+	B3
G59	Goat willow, alder, ash, hazel, aspen	19	380av	6 - 6 - 6 - 6	0	0	M	F	F	Mainly riparian species with some collapsed, uprooted stems. Deadwood in ash trees and alder. Split stems on willows. Flailed edges.	4.6	20+	B2
G60	Silver birch, hazel, elder	18	430av	10 - 10 - 4 - 3	1	1	EM	F	F	Prolific ivy on birch stems. Trunk lean towards east. 1 birch stem failure over river at circa 0.5m with basal cavity.	5.2	20+	C3
G61	Field maple, aspen	12	430e	7 - 15 - 6 - 4	0	0	M	F	F	Group includes failed aspen with main stem lying in stream to east. Field maple pruned over footpath. Ivy. Minor deadwood. Crown cavities.	5.2	20+	C3
W62	English oak, ash, crack willow, field maple, silver birch, wild cherry, hazel, blackthorn, hawthorn, yew, holly, alder, aspen	22	500av	8 - 8 - 8 - 8	0	0	M	F	F	Unmanaged woodland strip either side of a stream. Features typical including standing deadwood, windthrow stems, prolific ivy covered trees storm damaged limbs, deadwood and basal/crown cavities.	6	40+	B3
T63	English oak	19	550	9 - 10 - 12 - 9	6	1	M	F	F	Moderate deadwood. Dual stem from 1m. Some ivy.	6.6	40+	B2
T64	English oak	21	1250	10 - 8 - 10 - 10	5	1.5	M	F	F	Minor deadwood. Multi stemmed from 1.5m. DBH at 1m.	15	40+	B2
T65	English oak	19	620e	9 - 8 - 9 - 4	6	5	EM	F	F	Ivy on stem to 10m. Moderate deadwood. Storm damage fractures and crown cavities.	7.4	40+	B3
T66	English oak	20	570	9 - 7 - 6 - 4	5	3	EM	F	F	Minor deadwood. Ivy on lower stem.	6.8	40+	B3
T66	Crack willow	17	800e	12 - 5 - 5 - 7	1	0	M	F	P	Multi stem willow with collapsed stem. Basal cavity. Longitudinal crack on limb facing north. Prolific ivy and minor deadwood. Tree located near waters edge on north side of stream. Past tree surgery along footpath edge to the north.	9.6	10+	C3
T67	Ash	20	250av	7 - 7 - 8 - 3	5	4	M	P	P	Old coppice stool with basal cavity. Standing dead stems and 70% dead crown.	3	<10	U
T68	Ash	20	290av	8 - 3 - 9 - 4	5	4	M	P	P	5.4m east of other ash coppice. Old coppice stool. Standing dead stems and 30% dead crown.	3.5	10+	C3
T69	English oak	20	650e	5 - 9 - 11 - 5	5	5	EM	F	F	Minor deadwood. 2m east of Ash coppice.	7.8	40+	B1
G70	Crack willow	15	750e	11 - 7 - 2 - 6	1	0	M	F	P	3 trees located north of the stream with collapsed dual stems. Ivy. Minor deadwood and stem cavities.	9	10+	C3

Ref.	Species	Height (m)	Stem Dia. (mm)	Crown Spread N, E, S, W	LCH (m)	LBH (m)	Life Stage	Physiological Condition	Structural Condition	Tree Condition Notes & Observations	RPA Rad. (m)	Estimated Remaining Contribution	BS5837 Category
G71	English oak	21	760av	8 - 7 - 11 - 7	5	7	M	F	F	Each stem 3.5m apart with the middle tree being the largest. Moderate deadwood. Ivy. Hung up ash stem in western tree.	9.1	40+	B2
T72	Ash	23	450av	6 - 5 - 7 - 7	10	0	M	F	P	Old coppice stool with failed large stem to east and other basal cavities. Canopy includes moderate deadwood.	5.4	20+	B3
T73	English oak	22	720	9 - 9 - 9 - 9	4	6	M	F	F	Minor deadwood. Open canopy. 3m south of river edge.	8.6	40+	B1
T74	English oak	22	770	12 - 10 - 6 - 10	8	5	M	F	F	2.5m from stream edge to north. Major deadwood in the form of snapped limbs.	9.2	40+	B3
T75	English oak	9	570	13 - 2 - 0 - 4	2	0	EM	F	U	Wind blown tree located north of the stream with secondary canopy growth.	6.8	10+	C1
T76	English oak	20	710	8 - 8 - 8 - 8	6	4	M	F	F	Major deadwood. Storm damage fractures and crown cavities.	8.5	40+	B3
T77	English oak	19	620	8 - 8 - 8 - 8	3	4	EM	F	F	Minor deadwood and some bark damage wounds and crown cavities.	7.4	40+	B3
T78	English oak	22	800	10 - 10 - 10 - 7	4	4	M	F	F	Moderate deadwood. Storm damaged limbs. Crown cavities.	9.6	40+	B3
T79	Ash	21	330	7 - 7 - 7 - 7	6	8	M	F	P	Old coppice stool with multi stems. Ivy on one stem. Basal cavities. Minor deadwood.	4	20+	B3
G80	Ash, English oak	22	540av	9 - 9 - 9 - 9	2	1	M	F	F	Dual stem oak and 3 large ash stems from old coppice. Small basal cavity occluding. Some limb fractures in mid canopy of ash. Ivy on oak. Minor deadwood.	6.5	40+	B3
G81	English oak	23	950av	8 - 7 - 10 - 10	10	10	M	F	F	7 trees. Major deadwood. Bark necrosis. Limb fractures. Crown cavities. Decaying fungi located on lower stem on the largest tree is most likely Grifola frondosa. Unidentified fungal fruiting body on stem with bark necrosis on southern side.	11.4	40+	B3
T82	Ash	23	900e	11 - 12 - 11 - 8	5	7	M	F	F	Hanging fractured stem. Previous limb fractures and crown cavities.	10.8	20+	B3
G83	English oak	23	670av	10 - 10 - 10 - 10	3	5	M	F	F	Moderate deadwood. Limb fractures. Crown cavities. Ivy on middle tree. Basal cavity and bud proliferation on tree to south. 3 trees in group.	8	40+	B3
T84	Field maple	16	310av	6 - 8 - 8 - 7	3	0	M	F	F	Mature dual stem tree. Stem and crown cavities. Minor deadwood.	3.7	10+	B3

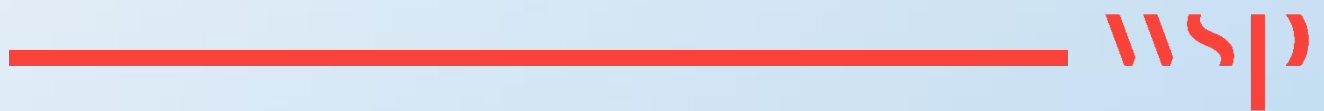
Ref.	Species	Height (m)	Stem Dia. (mm)	Crown Spread N, E, S, W	LCH (m)	LBH (m)	Life Stage	Physiological Condition	Structural Condition	Tree Condition Notes & Observations	RPA Rad. (m)	Estimated Remaining Contribution	BS5837 Category
T85	English oak	13	680e	9 - 8 - 3 - 6	2	2	M	F	F	Located east of ditch with prolific ivy and moderate deadwood.	8.2	40+	B1
T86	English oak	10	700e	6 - 6 - 6 - 6	2	2	M	F	F	Dual stem at 2m with extensive bud proliferation on main stem. Minor deadwood.	8.4	40+	B1
T87	English oak	19	630av	8 - 8 - 8 - 8	3	0	M	F	F	Four stems from 1m in height with developed canopy and minor deadwood	7.6	40+	B1
T88	English oak	23	1050	13 - 11 - 13 - 10	6	5	M	F	F	Moderate deadwood. Crown cavities. Lower limbs in field lifted.	12.6	40+	B3
T89	Crack willow	22	690	11 - 10 - 6 - 8	7	3	M	F	F	Storm damage fractures. Moderate deadwood.	8.3	40+	B1
T90	Crack willow	12	1300e	10 - 10 - 1 - 3	1	1	M	F	P	Collapsed dual stem at circa 2m with stem decay and prolific ivy. Subsequently produced secondary growth of circa 100mm diameter.	15.6	10+	C3
T91	English oak	19	950	5 - 5 - 8 - 10	1	4	M	F	F	Ivy on stem. Moderate deadwood.	11.4	40+	B1
G92	English oak	17	710av	8 - 8 - 8 - 8	1	3	M	F	F	Minor deadwood. Some ivy on stem. Small cavity on northern tree.	8.5	40+	B1
T93	English oak	19	840	7 - 7 - 7 - 7	4	2	M	F	F	Minor deadwood.	10.1	40+	B1
T94	Ash	18	420e	3 - 7 - 7 - 5	5	6	EM	F	F	Located west of ditch. Minor deadwood.	5	40+	B1
G95	Balsam poplar (western), aspen, field maple, horse chestnut	15	450av	4 - 4 - 4 - 4	1	1	EM	F	F	Reduced previously to circa 5m. Some stems with ivy. Crown lifting.	5.4	40+	B2
G96	Aspen, sweet chestnut	17	525av	10 - 10 - 7 - 5	5	2	EM	F	F	Crown lifted. Minor deadwood.	6.3	40+	B2
G97	Silver birch, beech	16	320av	5 - 5 - 5 - 5	5	1	EM	F	F	Crown lifted. Minor deadwood.	3.8	40+	B2
G98	Field maple, wild cherry, horse chestnut, rowan, aspen, sweet chestnut	18	480av	8 - 8 - 8 - 8	3	1	EM	F	F	Crown lifted. Minor deadwood. Historic root plate movement of 1 aspen. Tag numbers 0037 to 0052.	5.8	40+	B2
G99	Silver birch, western red cedar	15	320av	5 - 5 - 5 - 5	0	0	EM	F	F	Crown lifted on road side. Minor deadwood.	3.8	40+	B2
G100	Field maple, horse chestnut, wild cherry	15	420e	6 - 6 - 6 - 6	3	0	EM	F	F	Some bark damage wounds. Some multi stems. Crown lifting. Tag numbers from 0003 to 0036.	5	40+	B2
G101	Silver birch, western red cedar, laurel	15	280av	5 - 5 - 5 - 5	0	0	EM	F	F	Crown lifted on road side. Minor deadwood.	3.4	40+	B2
G102	Ash, field maple	8	340	4 - 4 - 4 - 4	2	2	SM	F	F	Tags 0113-0116.	4.1	40+	B2
G103	Hawthorn, common lime, sycamore, elder, ash, wild cherry	15	280av	6 - 6 - 6 - 6	0	2	EM	F	F	No recent height management. Sides pruned. Evenly spaced out trees amongst the elder and hawthorn. Minor deadwood. Mature ash and cherry.	3.4	40+	B2

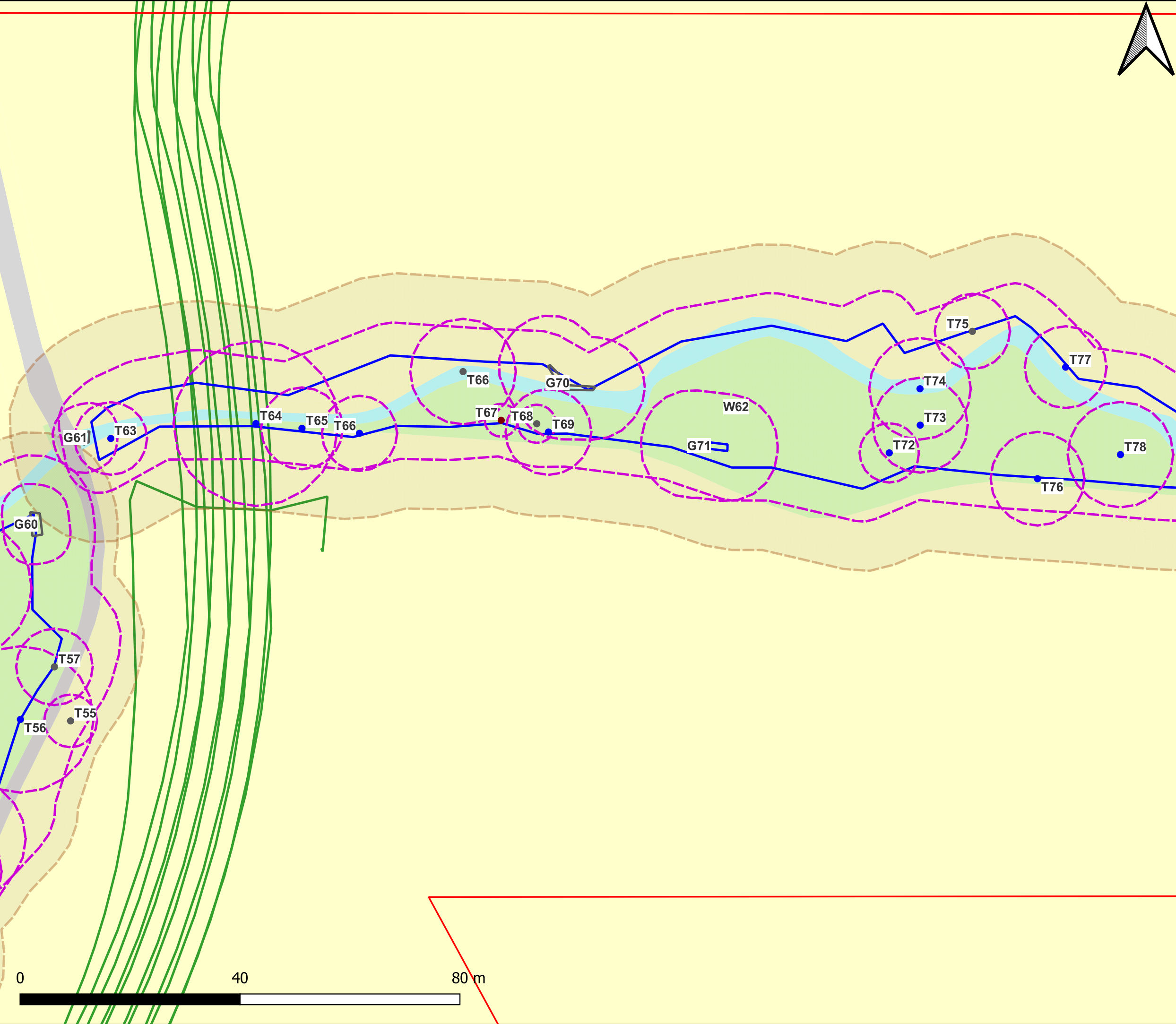
Ref.	Species	Height (m)	Stem Dia. (mm)	Crown Spread N, E, S, W	LCH (m)	LBH (m)	Life Stage	Physiological Condition	Structural Condition	Tree Condition Notes & Observations	RPA Rad. (m)	Estimated Remaining Contribution	BS5837 Category
T104	Eucalyptus	16	840	11 - 11 - 7 - 11	2	1	M	F	F	Tag number 0002. Minor deadwood. Crown lifting.	10.1	40+	B1
G105	Ash	17	330av	6 - 6 - 6 - 6	5	5	EM	F	F	Tag number 0130. Crown lifted. Minor deadwood.	4	40+	B2
G106	Wild cherry	8	490	5 - 5 - 5 - 5	3	2	M	F	F	Tag numbers 0133-0135. Large surface roots with mower damage. Crown lifted. Minor deadwood.	5.9	40+	B2
G107	Norway maple, sycamore	16	330av	6 - 6 - 6 - 6	3	2	EM	F	F	Crown lifting.	4	40+	B2
T108	Sycamore	17	780	6 - 9 - 7 - 7	5	2	M	F	F	Tag number 0132. Previous pruning throughout.	9.4	40+	B1
T109	Sycamore	15	500	5 - 5 - 5 - 5	5	2	EM	F	F	Previously crown lifted.	6	40+	B1
T110	Wild cherry	13	430e	6 - 3 - 6 - 6	2	2	M	F	F	Deadwood to north and east.	5.2	40+	B1
G111	Holm oak	18	700av	6 - 6 - 6 - 6	2	1	M	F	F	Tag numbers 0168, 0169, 0172. Tag 0172 with large basal cavity to south east. Various tree works.	8.4	40+	B2
T112	Wild cherry	9	290	5 - 8 - 6 - 6	4	4	EM	F	F	Tag 0171. Crown lifted.	3.5	40+	B1
G113	Ash, sycamore, wild cherry, horse chestnut, red oak	15	490av	8 - 8 - 8 - 8	4	2	EM	F	F	Tag numbers 0139, 0140, 0163-7. 0139 cherry is mature. Group contains U grade sycamore - tag 0164 with extensive bark necrosis and deadwood throughout.	5.9	40+	B2
T114	Silver birch	14	340	4 - 4 - 4 - 4	2	3	EM	F	F	Tag 0183.	4.1	40+	B1
G115	Sycamore, false acacia	17	290av	6 - 6 - 6 - 6	2	2	EM	F	F	Tag numbers 0141, 0159, 0160, 0161. Deadwood in multi stemmed false acacia.	3.5	40+	B2
G116	Sycamore, hawthorn, Norway maple	14	420av	5 - 5 - 5 - 5	4	4	EM	F	F	Mostly sycamore trees. Planted in hedge. Stems 2m from pedestrian walkway. Pruned back from pedestrian walkway. Minor deadwood.	5	40+	B2
G117	English oak, sycamore	21	720av	10 - 10 - 10 - 10	4	5	M	F	F	Dead ivy and minor deadwood in oak. Tag 0158-57.	8.6	40+	B2
G118	Sycamore, red oak, beech, Norway maple, horse chestnut	17	350av	6 - 6 - 6 - 6	4	3	EM	F	F	Crown lifted. Tag numbers 0142, 0144-49, 0152.	4.2	40+	B2
G119	Blue atlas cedar, Norway spruce	13	390av	5 - 5 - 5 - 5	1	2	SM	F	F	Tags 0155 and 0156. Crown lifted.	4.7	40+	B2
T120	Horse chestnut	14	400	5 - 5 - 5 - 5	3	2	EM	F	F	Crown lifted. Tag 0154.	4.8	40+	B1
T121	Hawthorn	7	240	3 - 3 - 3 - 3	1.5	1.5	EM	F	F	Tag 0184.	2.9	40+	B1
T122	Hornbeam	13	270	5 - 5 - 5 - 5	2	2	SM	F	F	Tag 0185. Crown lifted.	3.2	40+	B1
T123	Horse chestnut	13	410	6 - 6 - 6 - 6	3	2	EM	F	F	Tag 0153. Minor deadwood. Crown lifting.	4.9	40+	B1

Ref.	Species	Height (m)	Stem Dia. (mm)	Crown Spread N, E, S, W	LCH (m)	LBH (m)	Life Stage	Physiological Condition	Structural Condition	Tree Condition Notes & Observations	RPA Rad. (m)	Estimated Remaining Contribution	BS5837 Category
G124	Ash, English oak	20	670av	8 - 8 - 8 - 8	2	3	M	F	F	Crown lifted. Minor deadwood. Storm fractured limbs. Tag 0150.	8	40+	B2
T125	English oak	16	680	6 - 7 - 7 - 8	4	5	M	F	F	2.5m from pedestrian walkway. Gas installation beneath canopy on southern side. Tree tag number 0151. Moderate deadwood.	8.2	40+	B1
G126	Field maple, silver birch, sycamore	18	320av	5 - 5 - 5 - 5	1	1	EM	F	F	Side pruning along footpath. Minor deadwood.	3.8	40+	B2
G127	English oak, hawthorn, sycamore, ash, silver birch	21	900av	9 - 9 - 9 - 9	2	3	M	F	F	Moderate deadwood. Prolific ivy. Predominately mature oak. Ditch running through the middle and eastern boundary of site.	10.8	40+	B2
T128	Sycamore	10	360	5 - 5 - 5 - 5	2	2	SM	F	F	-	4.3	40+	B1
T129	Ash	18	620e	7 - 7 - 7 - 7	4	5	M	F	F	Prolific ivy obscuring inspection. Medium deadwood. No sign of ash dieback.	7.4	20+	B1
T130	English oak	20	770	10 - 6 - 7 - 10	3	2	M	F	F	Moderate deadwood.	9.2	40+	B1
T131	Norway maple	19	650	7 - 7 - 7 - 7	2	3	M	F	F	Prolific ivy obscuring inspection. Minor deadwood.	7.8	40+	B1
T132	Red oak	18	690	6 - 7 - 12 - 9	4	1	EM	F	F	Minor deadwood.	8.3	40+	B1
T133	Horse chestnut	16	700	7 - 7 - 7 - 7	1	1.5	M	F	F	Prolific ivy obscuring inspection.	8.4	20+	B1
T134	English oak	12	600e	8 - 8 - 8 - 8	3	4.5	M	F	F	In hedgerow. Stem covered in ivy obscuring inspection. Located within 1m of pavement.	7.2	40+	B1

Appendix C

TREE CONSTRAINTS PLAN





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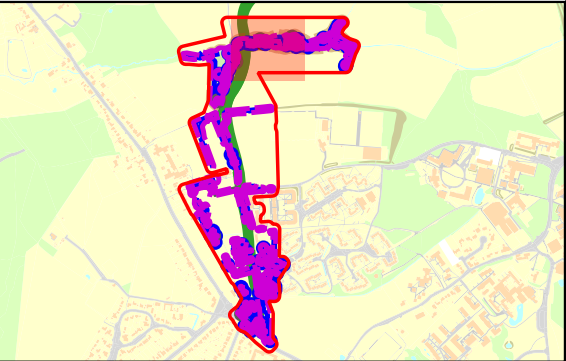
- Access Road Alignment
- Study Area
- Indicative Root Protection Area
- Minimum Ancient Woodland 15m Buffer

BS:5837(2012) Tree Category

- B - Moderate Quality Tree
- C - Low Quality Tree
- U - Unsuitable Tree

BS:5837(2012) Tree Group Category

- B - Moderate Quality Tree Group
- C - Low Quality Tree Group



STATUS: **FOR INFORMATION ONLY**

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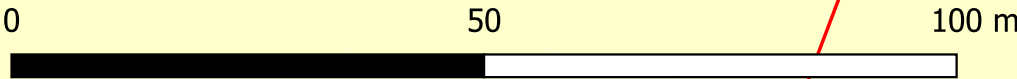
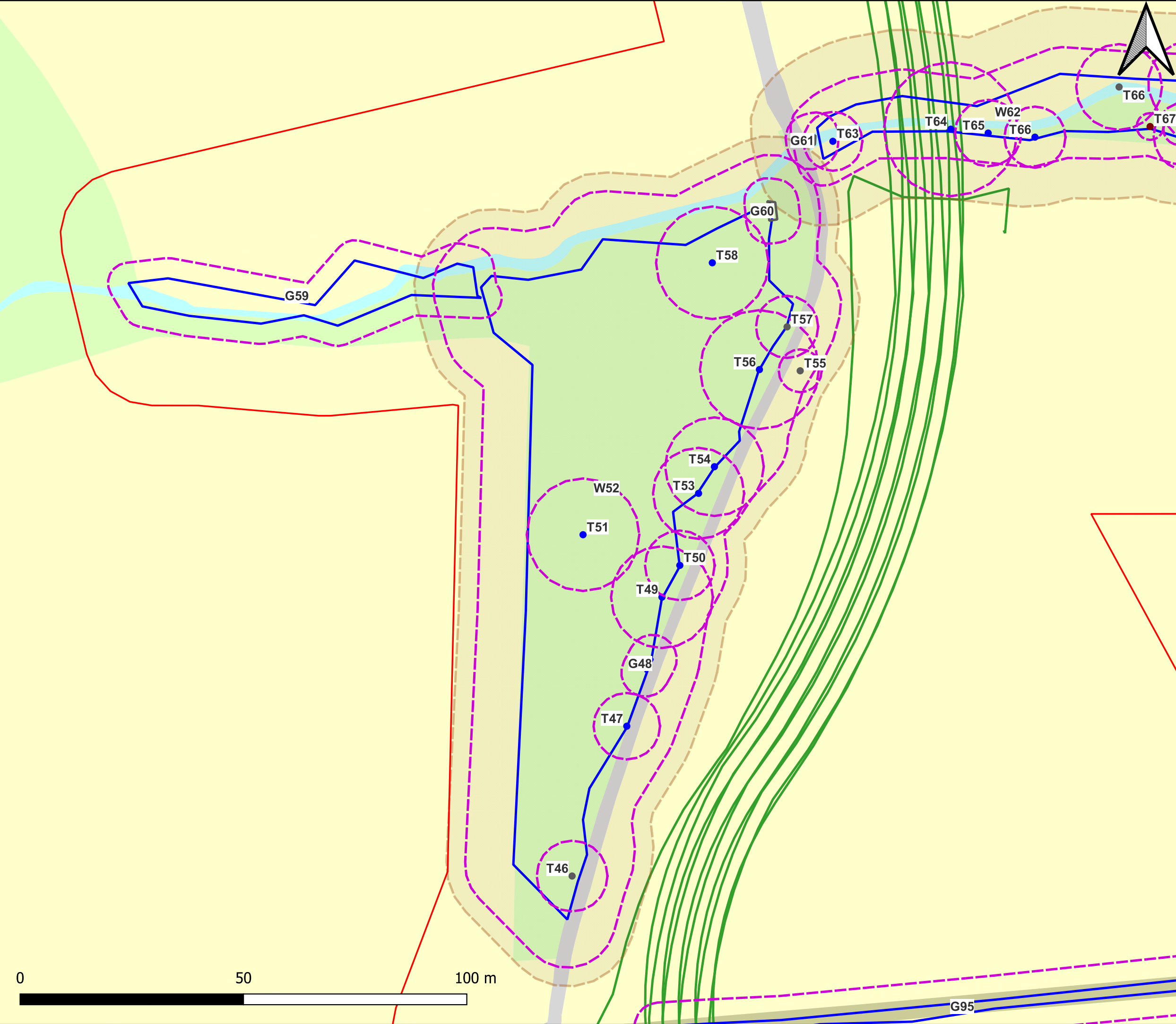
PAGE NO.: **Sheet 2 of 7**

CLIENT: **University of Kent**

PROJECT: **Canterbury Campus Access Road Alignment**

TITLE: **Tree Constraints Plan**

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VERSION: V1	DATE:	DATE: 03/02/22
PROJECT No: 70080896	DRAWING No: 70080896-WSP-ARB-001	



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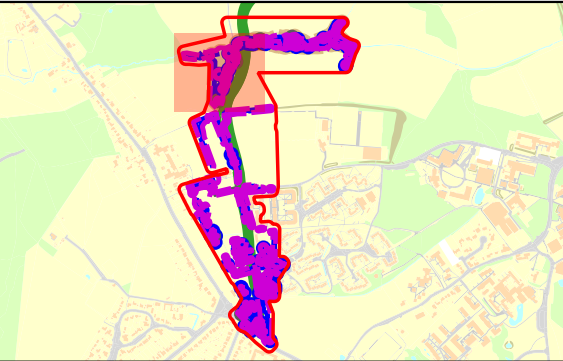
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- Study Area
- Indicative Root Protection Area
- Minimum Ancient Woodland 15m Buffer

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BS:5837(2012) Tree Group Category

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- C - Low Quality Tree Group



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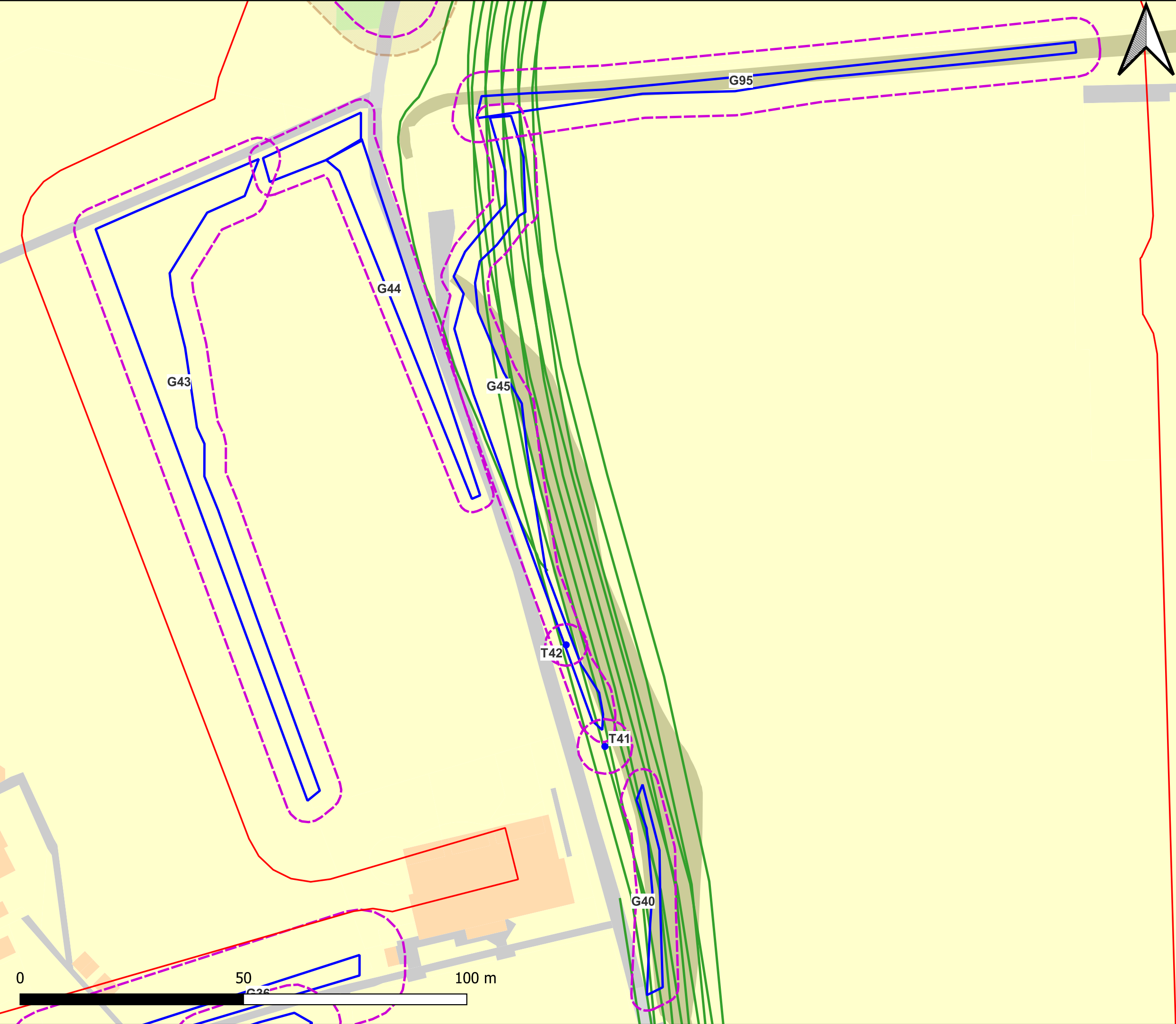
PAGE NO.: **Sheet 3 of 7**

CLIENT: **University of Kent**

PROJECT: **Canterbury Campus Access Road Alignment**

TITLE: **Tree Constraints Plan**

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VERSION: V1	DATE:	DATE: 03/02/22
PROJECT No: 70080896	DRAWING No: 70080896-WSP-ARB-001	



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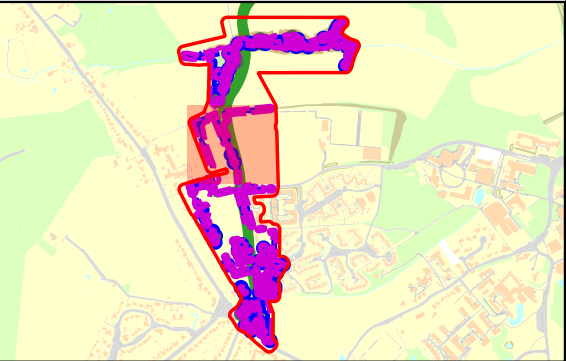
- Access Road Alignment
- Study Area
- Indicative Root Protection Area
- Minimum Ancient Woodland 15m Buffer

BS:5837(2012) Tree Category

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- C - Low Quality Tree
- U - Unsuitable Tree

BS:5837(2012) Tree Group Category

- B - Moderate Quality Tree Group
- C - Low Quality Tree Group



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CLIENT: **University of Kent**

PROJECT: **Canterbury Campus Access Road Alignment**

TITLE: **Tree Constraints Plan**

SCALE @A3: 1:800	DRAWN: JM	APPROVED: MW
VERSION: V1	DATE:	DATE: 03/02/22
PROJECT No: 70080896	DRAWING No: 70080896-WSP-ARB-001	



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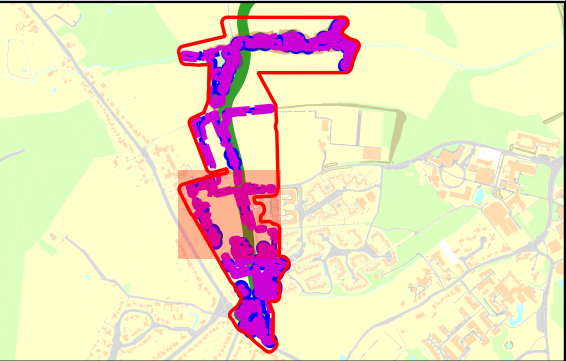
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- Study Area
- Indicative Root Protection Area
- Minimum Ancient Woodland 15m Buffer

BS:5837(2012) Tree Category

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VERSION: V1	DATE:	DATE: 03/02/22
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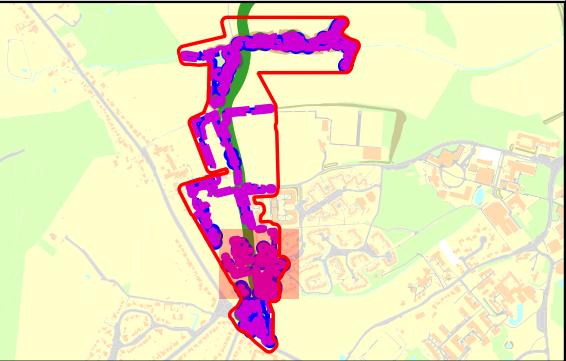
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- Study Area
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BS:5837(2012) Tree Category

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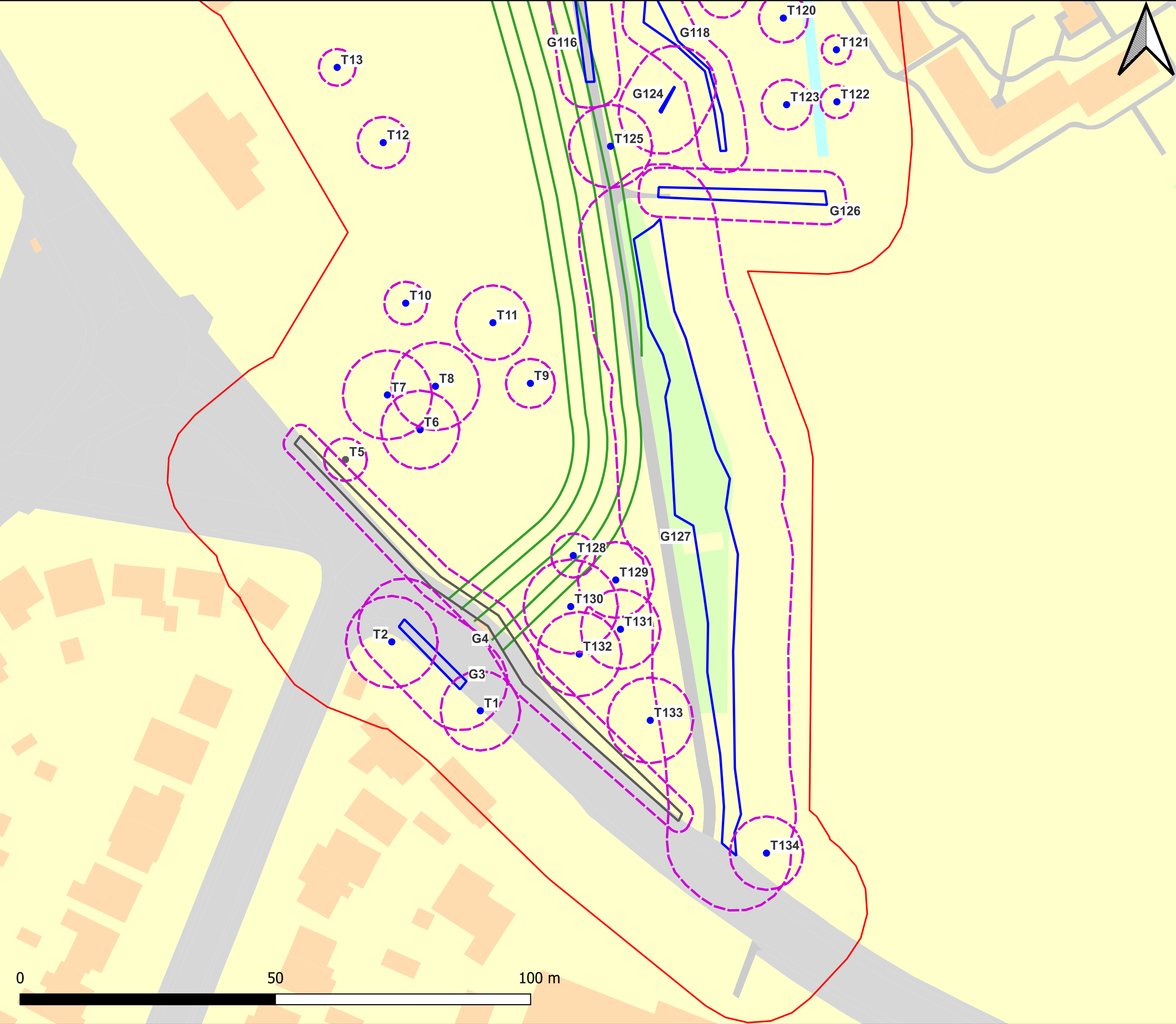
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PROJECT: **Canterbury Campus Access Road Alignment**

TITLE: **Tree Constraints Plan**

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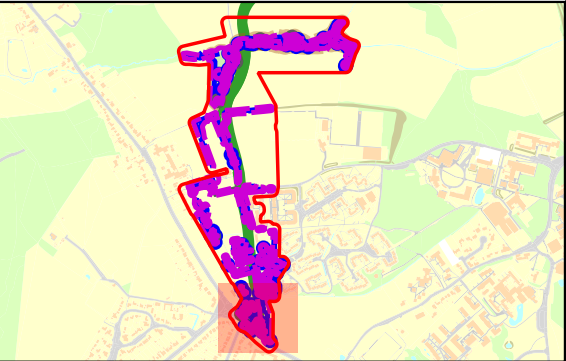
- Access Road Alignment
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- Indicative Root Protection Area
- Minimum Ancient Woodland 15m Buffer

BS:5837(2012) Tree Category

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BS:5837(2012) Tree Group Category

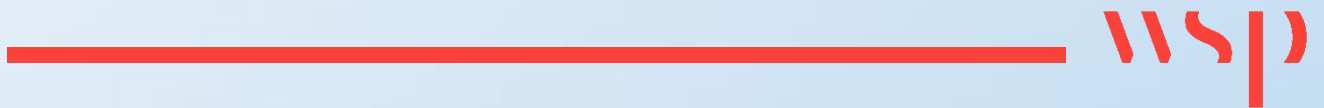
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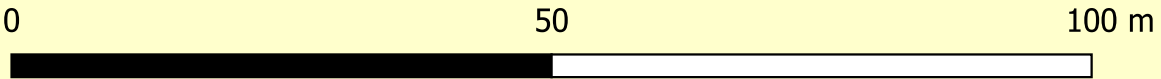
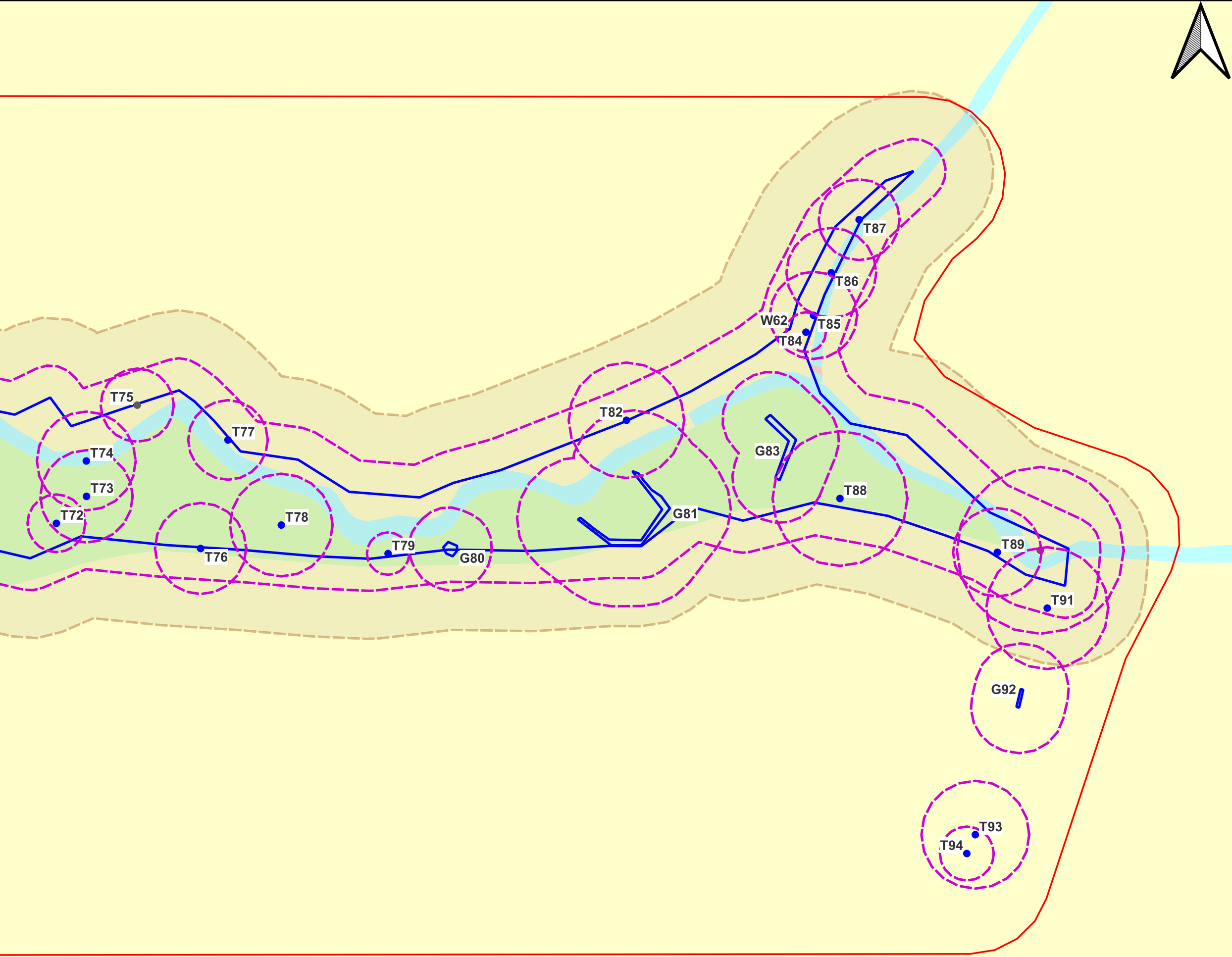


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CLIENT: University of Kent		
PROJECT: Canterbury Campus Access Road Alignment		
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VERSION: V1	DATE:	DATE: 03/02/22
PROJECT No: 70080896	DRAWING No: 70080896-WSP-ARB-001	

Appendix D

PRELIMINARY TREE REMOVALS PLAN





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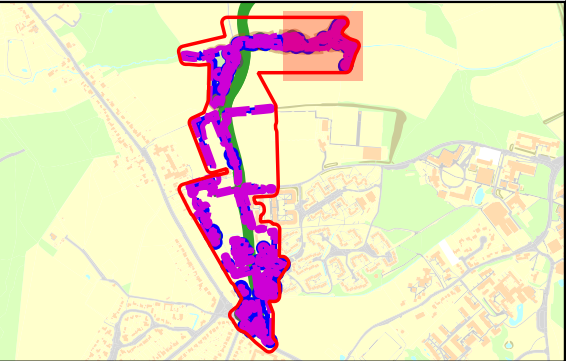
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- Preliminary Tree Removal

BS:5837(2012) Tree Category

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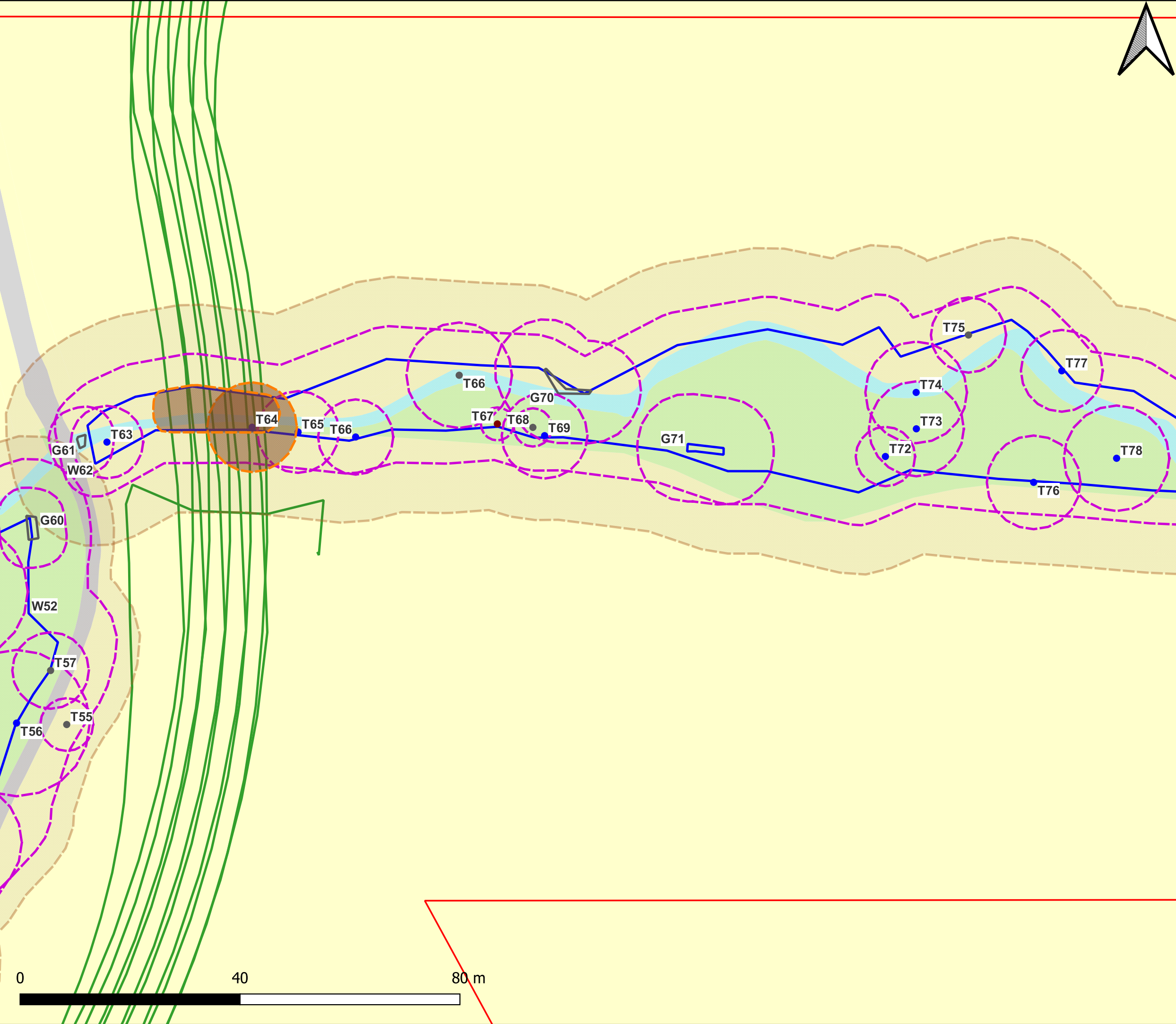
PAGE NO.: **Sheet 1 of 7**

CLIENT: **University of Kent**

PROJECT: **Canterbury Campus Access Road Alignment**

TITLE: **Preliminary Tree Removals Plan**

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PROJECT No: 70080896	DRAWING No: 70080896-WSP-ARB-002	



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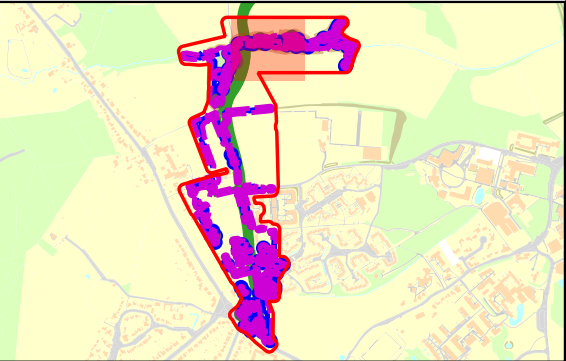
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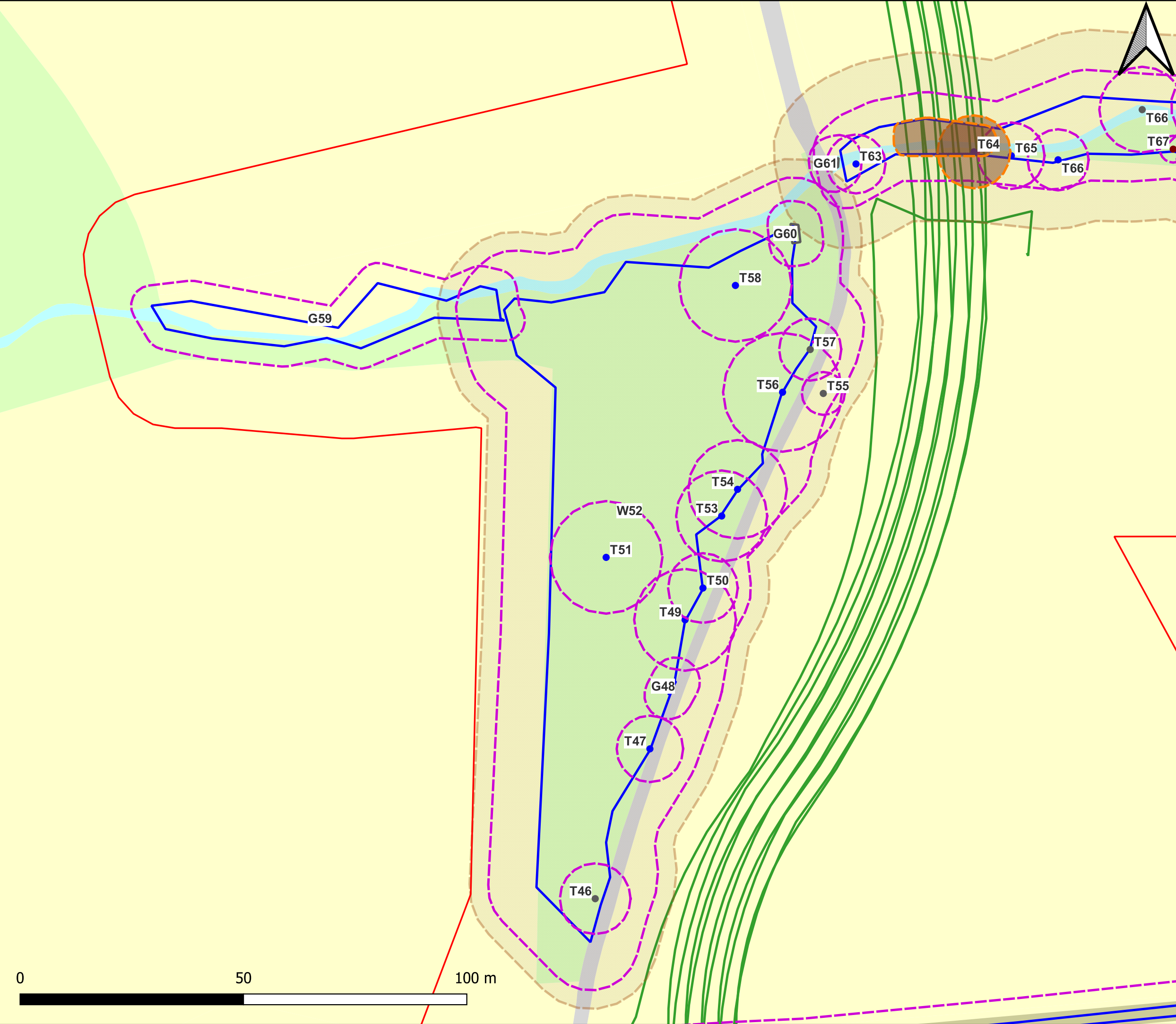
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PROJECT: **Canterbury Campus Access Road Alignment**

TITLE: **Preliminary Tree Removals Plan**

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PROJECT No: 70080896	DRAWING No: 70080896-WSP-ARB-002	



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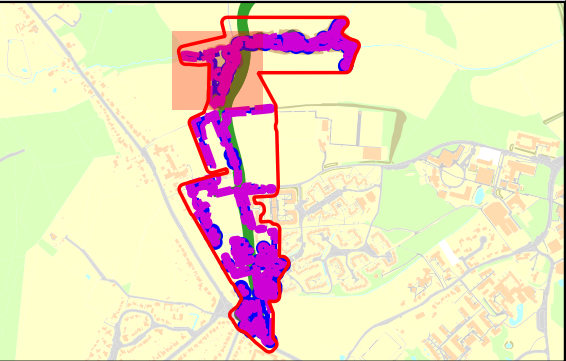
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- Study Area
- Indicative Root Protection Area
- Minimum Ancient Woodland 15m Buffer
- Preliminary Tree Removal

BS:5837(2012) Tree Category

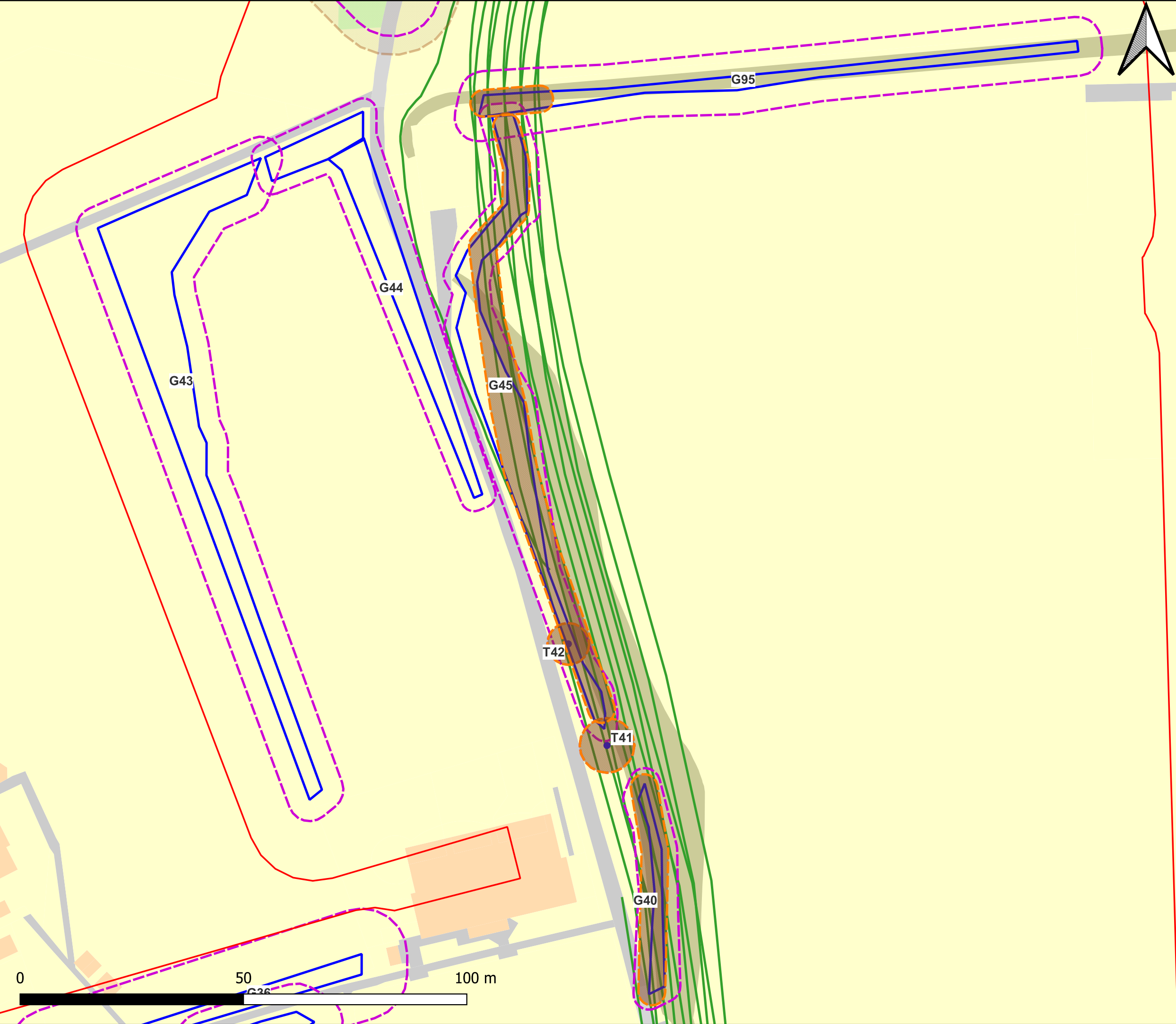
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BS:5837(2012) Tree Group Category

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TITLE: Preliminary Tree Removals Plan		
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VERSION: V1	DATE:	DATE: 03/02/22
PROJECT No: 70080896	DRAWING No: 70080896-WSP-ARB-002	



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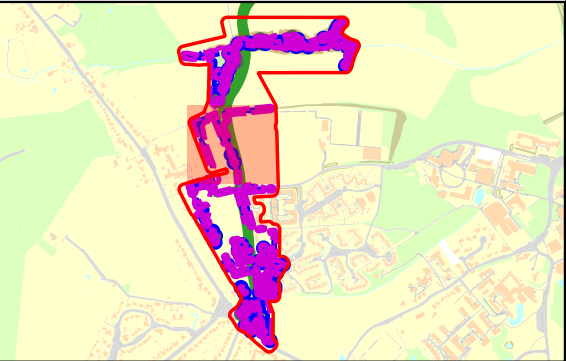
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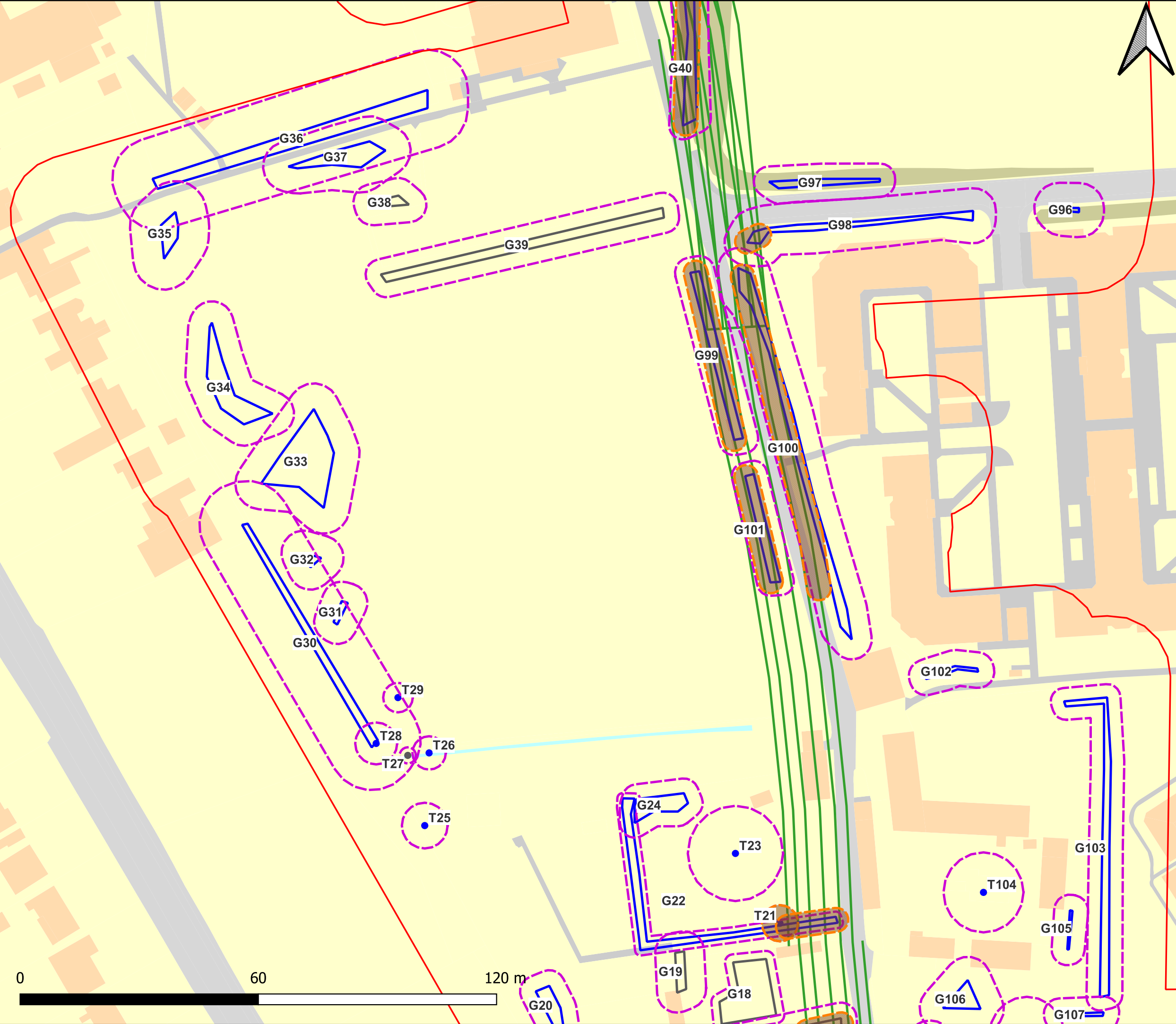
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PROJECT: **Canterbury Campus Access Road Alignment**

TITLE: **Preliminary Tree Removals Plan**

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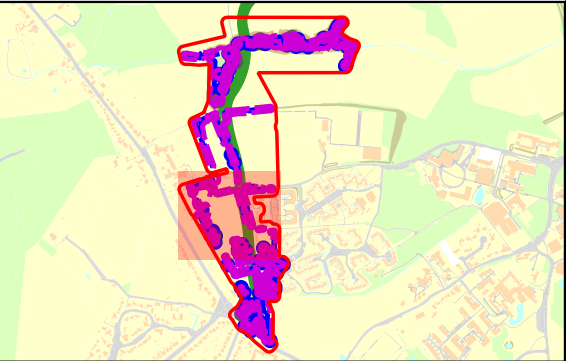
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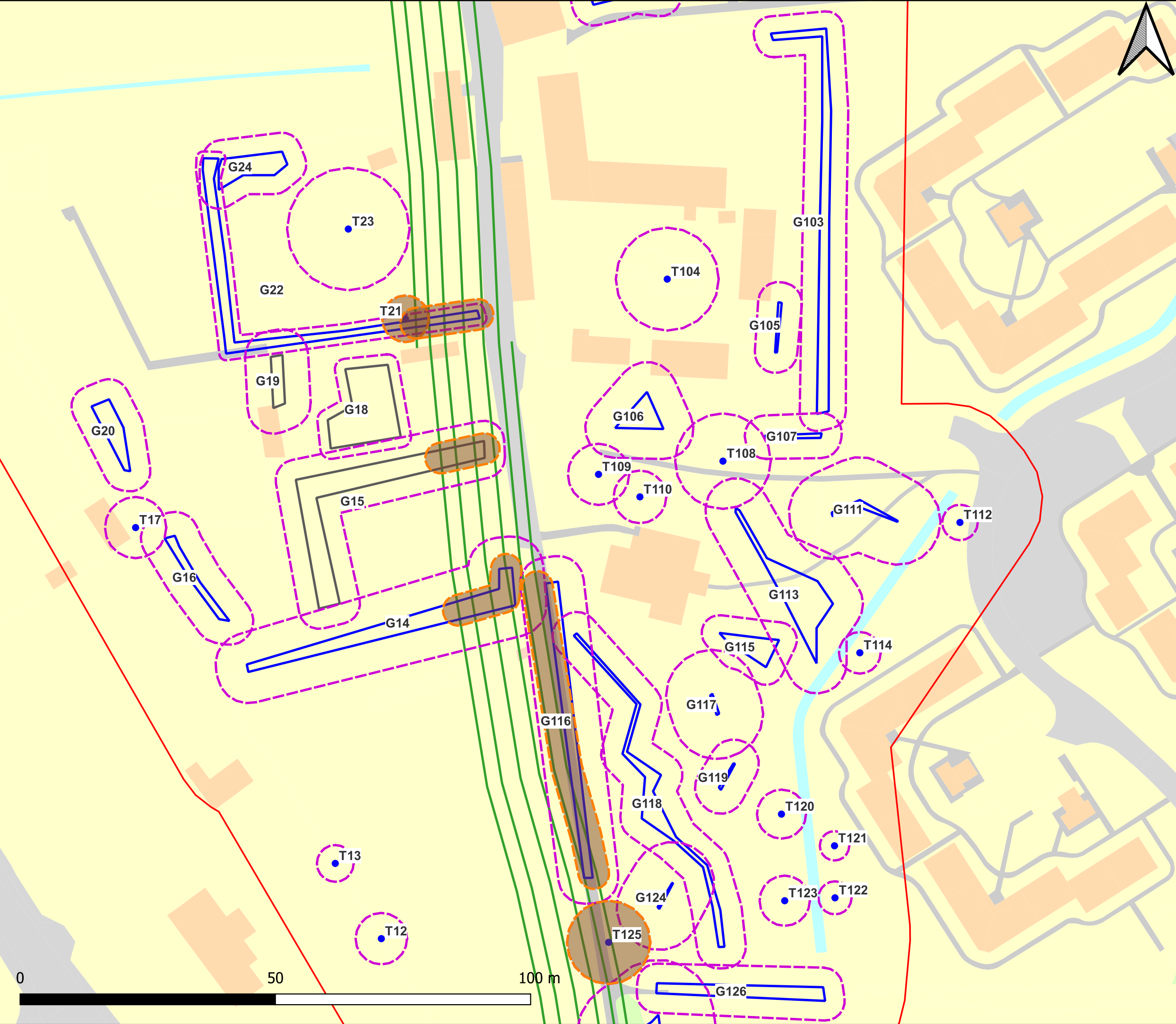
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PROJECT: **Canterbury Campus Access Road Alignment**

TITLE: **Preliminary Tree Removals Plan**

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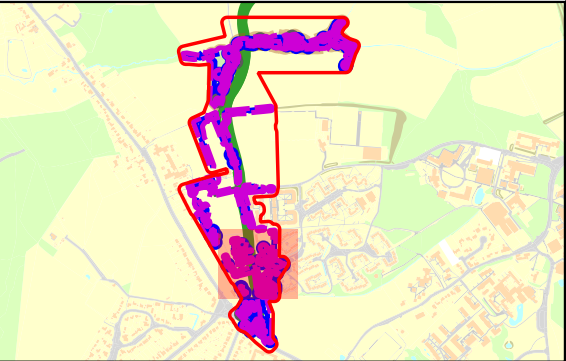
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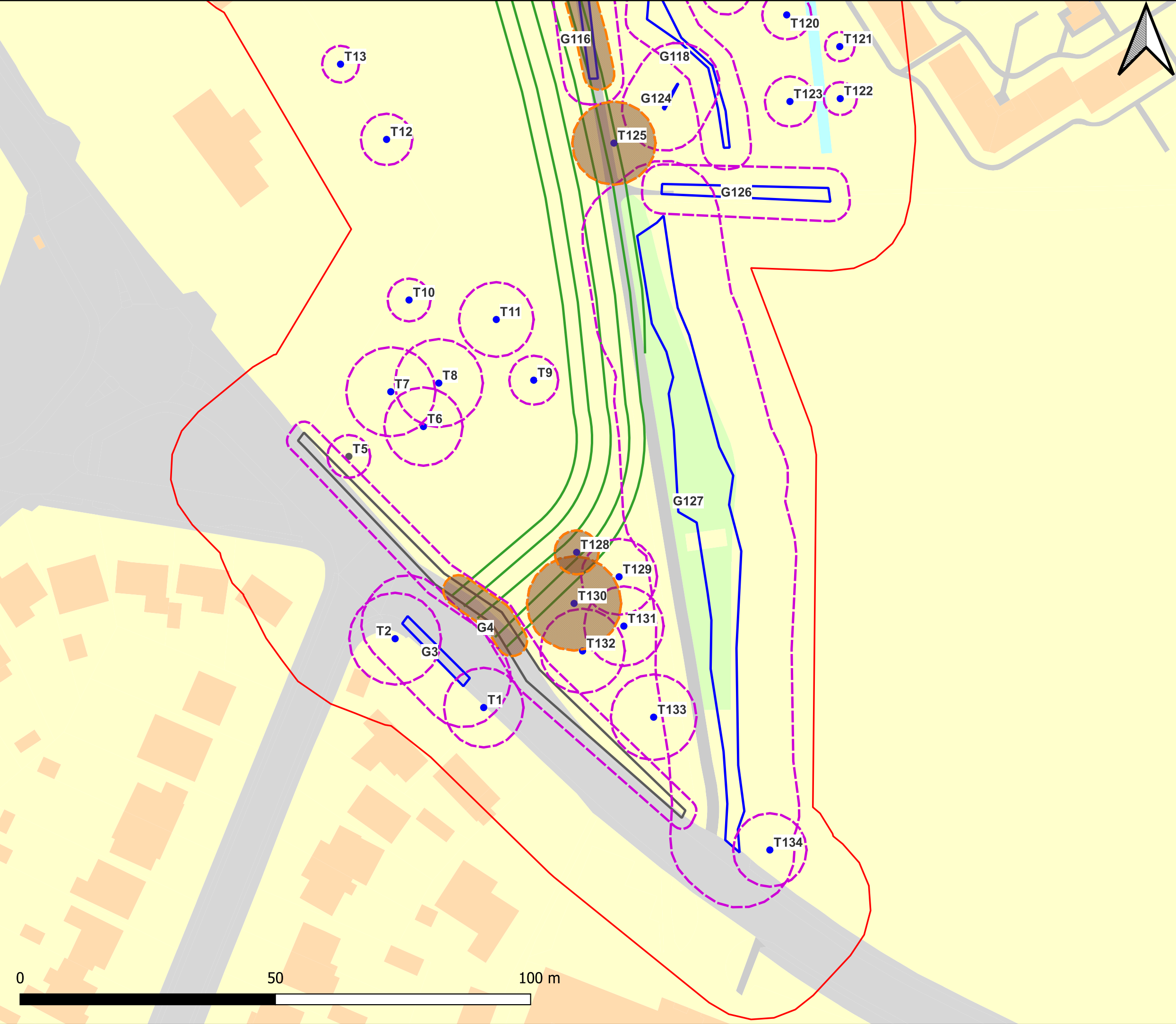
PAGE NO.: **Sheet 6 of 7**

CLIENT: **University of Kent**

PROJECT: **Canterbury Campus Access Road Alignment**

TITLE: **Preliminary Tree Removals Plan**

SCALE @A3: 1:700	DRAWN: JM	APPROVED: MW
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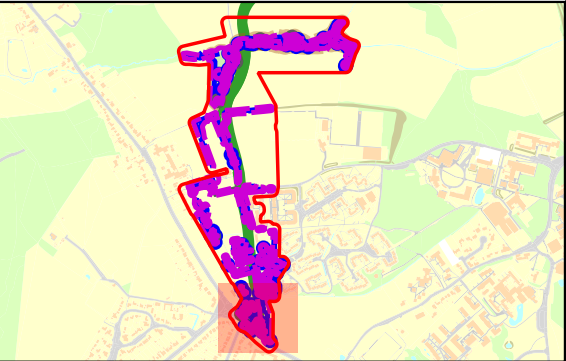
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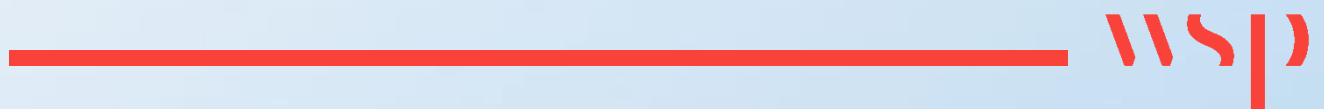
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PROJECT No: 70080896	DRAWING No: 70080896-WSP-ARB-002	

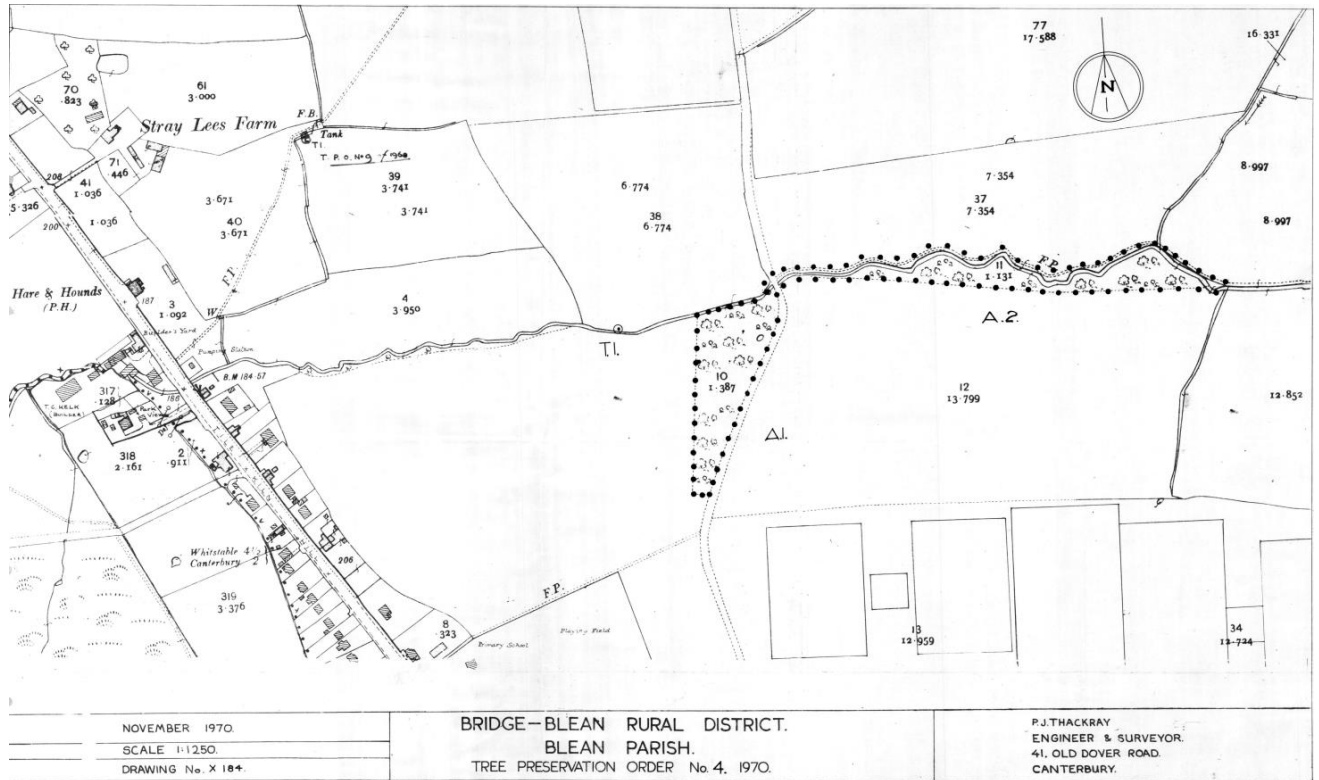
Appendix E

TREE PRESERVATION ORDERS



Tree preservation order maps accessed at Canterbury City Council's website on 27 January 2022 at <https://opendata.canterbury.gov.uk/datasets/tree-preservation-orders/>

Image of TPO 4/1970/BLE





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PUBLIC



TECHNICAL NOTE

Appendix C – Historic Record Research

TECHNICAL NOTE

DATE:	04 January 2022	CONFIDENTIALITY	Public
SUBJECT:	University of Kent, Canterbury Campus Ancient Woodland Research		
PROJECT:	70080896	AUTHOR:	Janette Platt
CHECKED:	Justin Sherlock	APPROVED:	Justin Sherlock

INTRODUCTION

WSP has been appointed by the University of Kent to provide transport and environmental advice for the development of proposals on land at their Canterbury Campus that has been identified as being surplus to requirement.

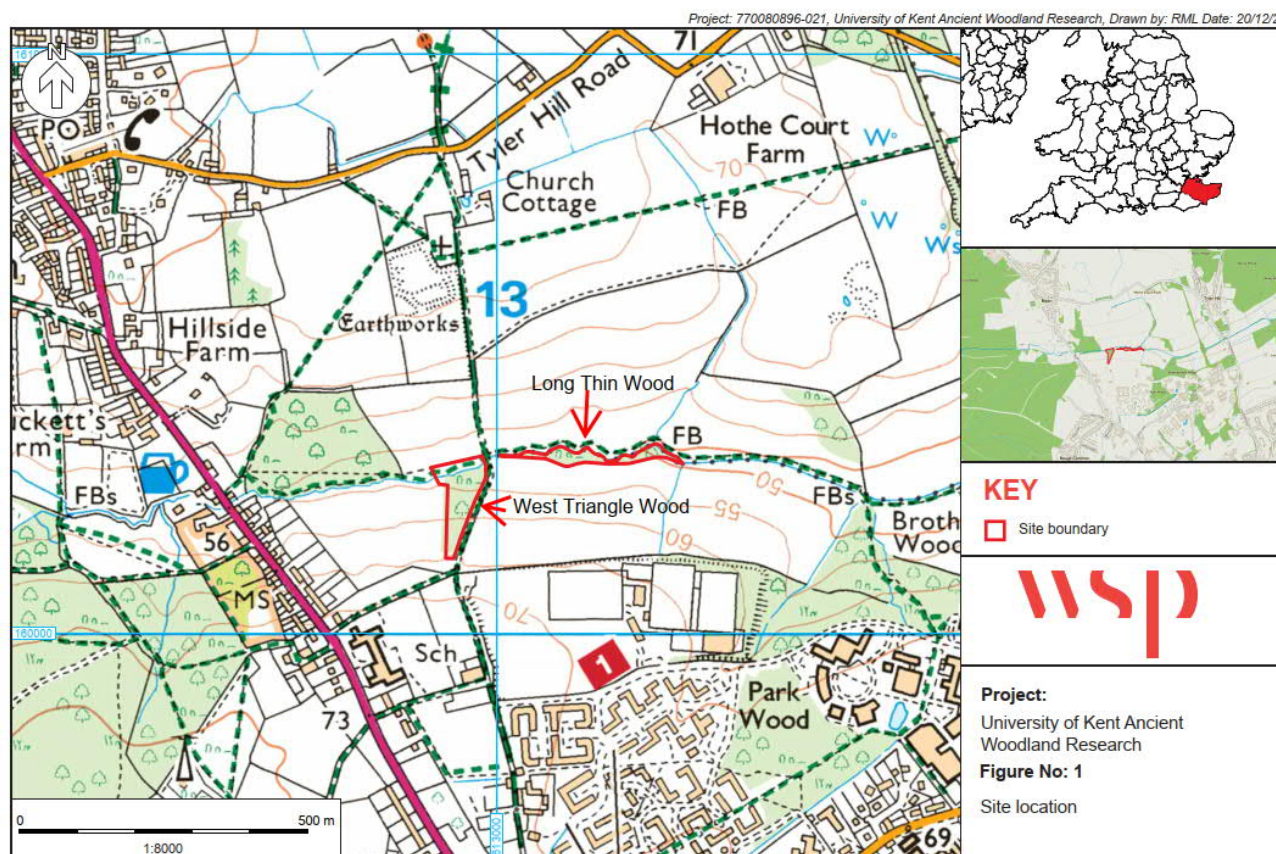
Disposal Sites BCD lie to the immediate north of the University Campus with vehicular access currently provided from Tyler Hill Road, a rural single carriageway road that connects Blean and the A290 in the west with Tyler Hill and Canterbury Hill in the east.

This Technical Note provides a summary of historic maps research carried out with regard to the possible ancient woodland ('the site') to the north of the University of Kent's Canterbury Campus. This note has been prepared to sit alongside further arboriculture work being undertaken that is scheduled to be complete in January/February 2022.

OBJECTIVES

The objectives of the research were to establish, if possible, whether a couple of small woods ('the site') to the north of the University of Kent's Canterbury Campus have existed since at least AD1600 and would therefore meet the definition of Ancient Woodland.

The woods in question are shown within the redline site boundary on **Figure 1** below. The area in the west that has a north-south axis is known as West Triangle Wood whilst the area in the east, which is aligned with the watercourse is referred to as Long Thin Wood.



SCOPE

The historic maps research comprised consulting three record offices/libraries:

- The National Archive in Kew;
- The Kent History and Library Centre in Maidstone; and
- The Canterbury Cathedral Archives and Library.

The online catalogues for each of these record offices was consulted to identify relevant historic mapping pre-dating the Ordnance Survey 1st edition 6":mile map of 1873 (relevant Ordnance Survey maps from the 1st edition to the present day had already been obtained from Groundsure for the Cultural Heritage and Archaeology Constraints and Opportunities Appraisal produced by WSP for the University of Kent in May 2021). The archives were then visited by a member of the WSP Cultural Heritage & Archaeology team in December 2021. During these visits, relevant sections of early historic maps of the area were photographed to try to establish how long the woods in question have been in existence (or rather how long woodland has been in that same location). The Ordnance Survey First Series 1":mile map for Canterbury, surveyed in 1789–99, was also consulted online at <http://www.visionofbritain.org.uk>.

Note: Most detailed maps do not go back as early as 1600. While the very first Ordnance Survey mapping (the First Series) was published in around 1801, most 1st edition Ordnance Survey maps were not published until the 1860s–1880s. Other than tithe maps (1830s/40s) and, where they exist, inclosure maps (generally late 18th century/early 19th century) most earlier maps are usually not detailed enough to show individual woods or not accurate enough to locate an individual wood.

The following detailed maps were examined as part of this research:

- Ordnance Survey maps from the 1st edition to the present day (Groundsure);
- Tithe map of Saints Cosmus and Damian in the Blean parish, 1838 (National Archive ref: IR/30/17/93);
- Canterbury and Whitstable Railway map, 3 May 1830 (Canterbury Cathedral Archives and Library, ref: CCA – 10/2266 L/W.1);
- Ordnance Survey First Series 1":mile map of Canterbury, surveyed in 1798–99 (<https://www.visionofbritain.org.uk>);
- A map of the Hundreds of Westgate, Whitstable, Blengate and Preston, in E Halstead, 1797, *The History and Topographical Survey of the County of Kent, Volume 3* (Canterbury Cathedral Archives and Library, ref: DA 1001.K4);
- Andrews, Drury and Herbert topographical map of the County of Kent, 1769 (Kent History and Library Centre, ref: EK/U20)';
- Map of Kent c 1625 (Kent History and Library Centre, ref: U442/P105).

During the course of this research, however, additional avenues of research were identified which might warrant further investigation at a later date:

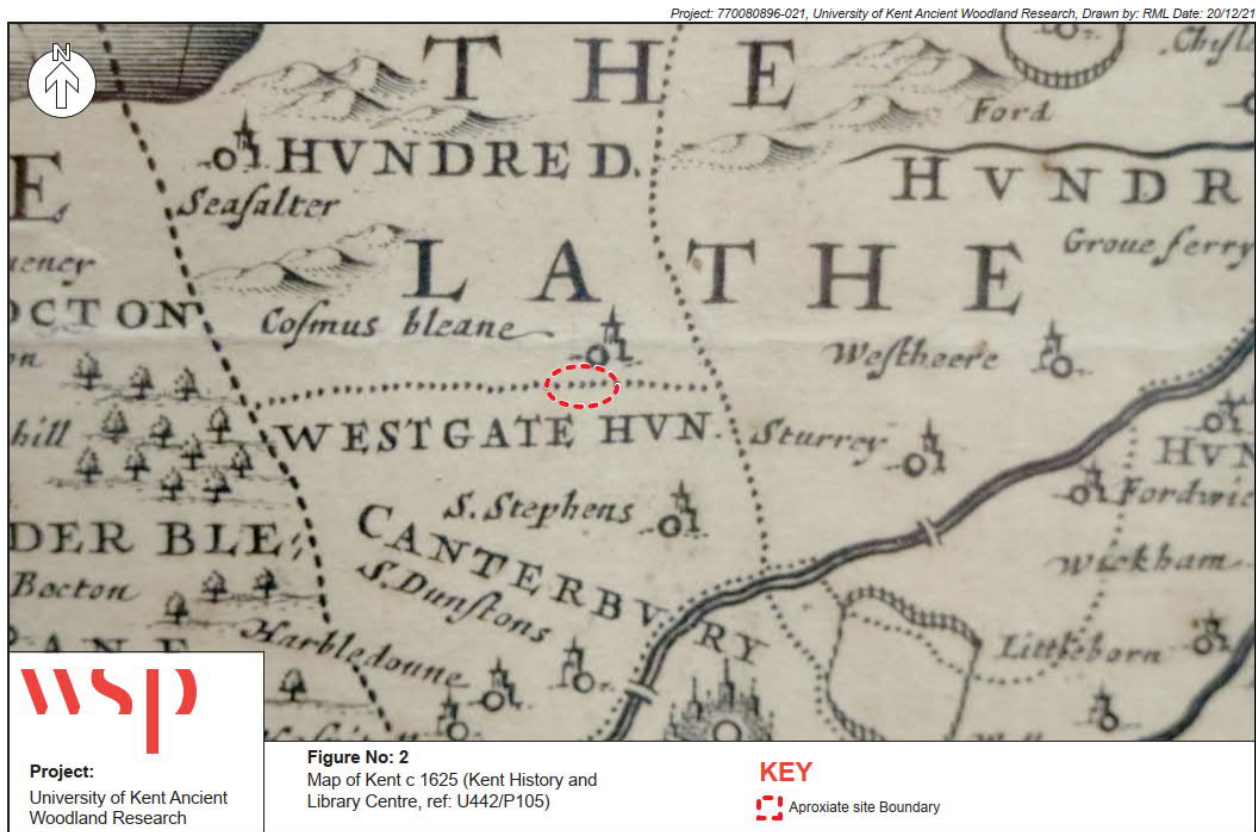
- Original research documents relating to the ancient woodlands of the Blean was recently deposited at the Canterbury Cathedral Archives and Library, but not yet catalogued. This may contain information of relevance, but our researcher estimates that it could take another two days at the archive to investigate them all;
- Blean Heritage & Community Group, 2009, *The Blean: Canterbury and Swale's Ancient Woodlands*; and
- A Wheaton, 1999, *Ancient Woodlands of the Blean – the Blean Project 1998/1999*.

The latter two publications are available at the Canterbury Library (local studies collection) which could be considered as part of further review.

KEY FINDINGS

The earliest map consulted was a map of Kent dated to around 1625 (**Figure 2**). This is not a very detailed map, however, and nor is it drawn to scale. It clearly shows the Church of St Cosmus and St Damien (simply named '*Cosmus bleane*' on the map) to the north of Canterbury and well as the divisions between the different hundreds¹. The later 1769 map of Kent by Andrews, Drury and Herbert (**Figure 3**) shows that the existing stream which bounds the eastern part of the site and runs through the western part of the site marked the boundary between the Whitstable Hundred, to the north, and the Westgate Hundred to the south. No indication of any woodland is shown in this location, however; the only woodland indicated being to the west, within the Bocton under Bleane Hundred, where large areas of woodland still exist (to the west of the A290). However, this does not necessarily mean that woodland did not exist within the site; it may simply be that it was not thought large enough to be worthy of mapping.

¹ A unit of English local government and taxation, intermediate between village and shire



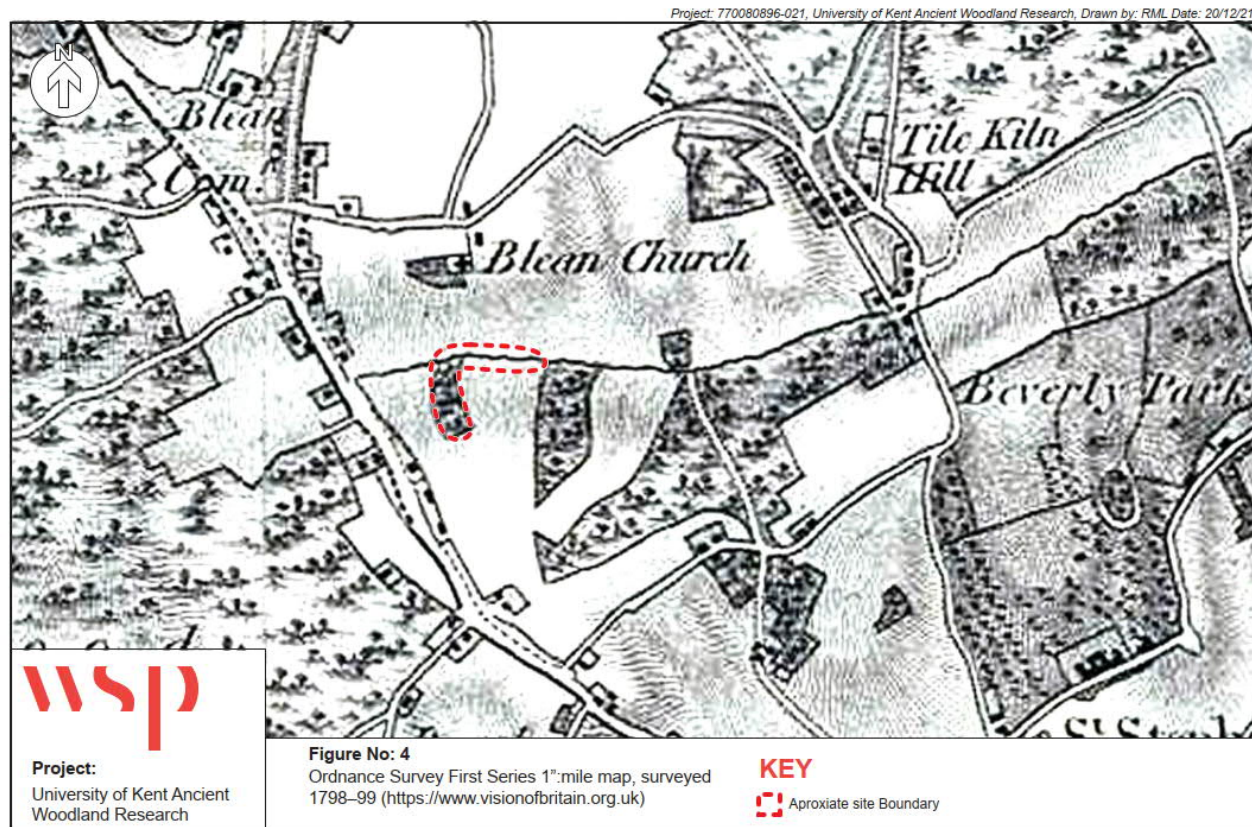
No further detailed maps of the site and surrounding area were identified until the late 18th century. The rather more detailed 1769 map of Kent by Andrews, Drury and Herbert (**Figure 3**) enables one to pinpoint the approximate location of the site more closely since it shows the stream which runs adjacent the north edge of the eastern part of the site and through the western part of the site.



WSP 2021

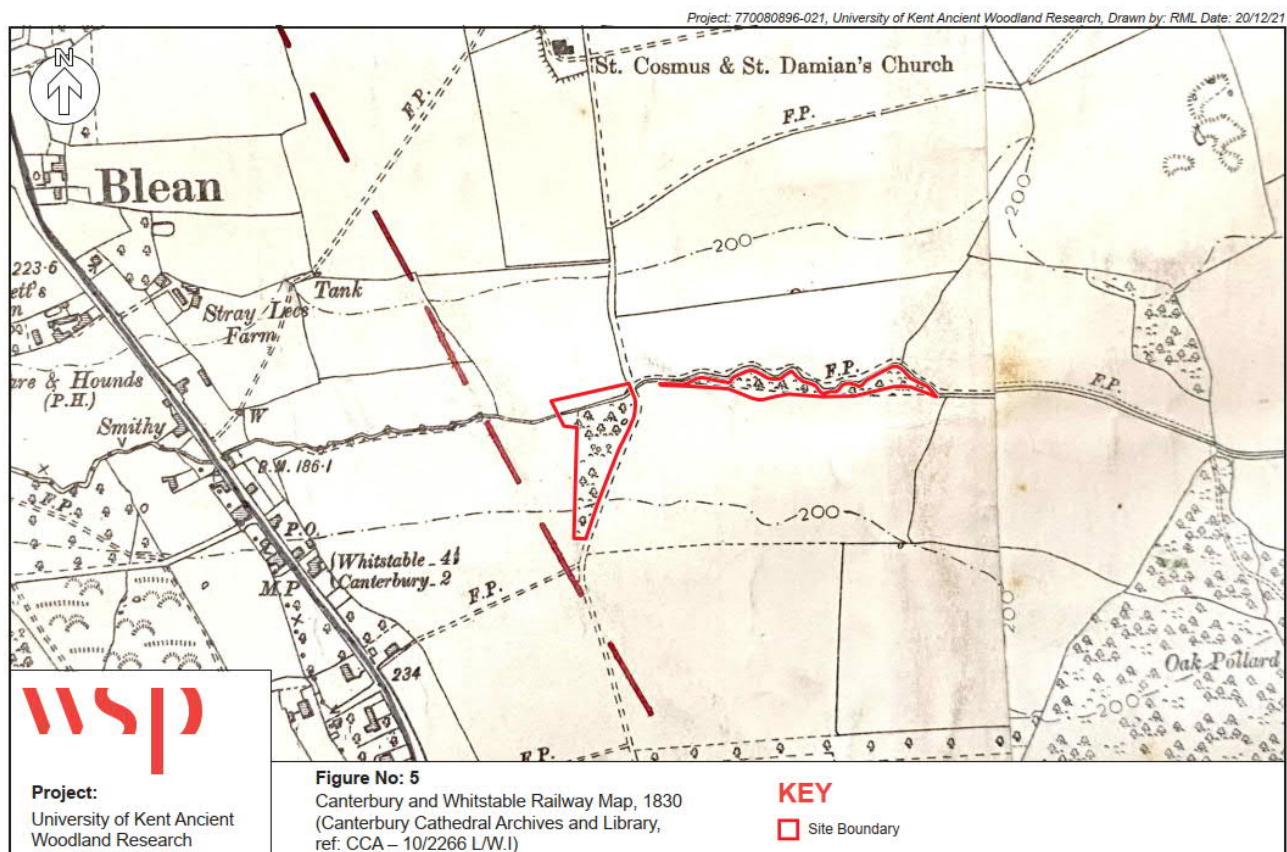
By the Ordnance Survey First Series 1":mile map which was surveyed in 1798–99 (**Figure 4**), a rectangular piece of woodland is shown in the rough location of West Triangle Wood, and it seems likely that they are one and the same wood, even if the shape of the wood has changed a little since then. However, there is still no woodland shown in the eastern part of the site (Long Thin Wood) which suggests that no woodland was present in that location.

Like the 1625 map of Kent (**Figure 2**), though, no woodland is shown in this location. The existing large area of woodland to the west of the present A290 is still shown, as is a smaller area of woodland approximately 200m to the north-east of the site. The same is true of the slightly later map of the hundreds of Westgate, Whitstable, Blengate and Preston in 1797 (not reproduced).



By the 1830 map of the Canterbury & Whitstable Railway (**Figure 5**) both Long Thin Wood and West Triangle Wood within the site are clearly shown, though the area they now cover is slightly larger than it is depicted on this map and on subsequent mapping up to and including the Blean tithe map of 1838 (not reproduced) and the Ordnance Survey 1:10,000 scale map of 2010 (not reproduced). West Triangle Wood today extends slightly further north and west, such that the stream now runs through the northern part of this wood rather than adjacent to the northern edge as it does in the 1830 map, while Long Thin Wood now extends slightly further south in one small area.

By the Ordnance Survey 1:10,000 scale map of 2021 (not reproduced) the two woods within the site have reached their current extent.



WSP 2021

CONCLUSIONS

Based on this historic mapping research it seems highly likely that the existing woodland on the eastern side of the site (Long Thin Wood) was not present before the early 19th century as it is not shown on the Ordnance Survey First Series 1":mile map of 1798–99 (**Figure 4**). On the same map, there does appear to be a wood in the location of West Triangle Wood. None of the earlier mapping shows Long Thin Wood but this does not absolutely rule out the earlier presence of this wood, since it is possible that it was not large enough to warrant reproduction. The date at which this wood was first established is therefore not certain.

In conclusion, this review has not identified information that would confirm the presence of woodland in the location of Long Thin Wood since 1600AD (the definition of ancient woodland).