

Appendix 4.3



Roxhill Developments Ltd

M1 Junction 15 West, Northampton

Main Site

Arboricultural Assessment

May 2018

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Rev	Issue Status	Prepared / Date	Approved/Date
-	Draft	DS / 07.11.2014	DS / 01.12.2014
-	Final	DS / 01.12.2014	DS / 01.12.2014
A	Final	DS / 23.01.2017	DS / 27.09.2017
B	Final	DS / 16.04.2018	TCB / 16.04.2018
C	Final	TCB / 08.5.2018	TCB / 08.05.2018

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1.0 INTRODUCTION

- 1.1 This report has been prepared by FPCR Environment and Design Limited on behalf of Roxhill Developments Ltd to present the findings of an arboricultural assessment and survey of trees located on land surrounding the motorway junction and to the south of the carriageway (hereafter referred to as the site), OS Grid Ref SP 749 547, as shown in The Assessment Boundary Plan. The survey was carried out during November 2014 and resurvey November 2016.
- 1.2 The tree survey and assessment of existing trees has been carried out in accordance with the guidelines contained within British Standard 5837:2012 '*Trees in Relation to Design, Demolition and Construction - Recommendations*' (hereafter referred to as BS5837). The guidelines set out a structured assessment methodology to assist in determining which trees would be deemed either as being suitable or unsuitable for retention. The guidelines also provide recommendations for considering the relationship between existing trees and how those trees may integrate into designs for development; demolition operations and future construction processes so that a harmonious and sustainable relationship between any retained trees and built structures can be achieved.
- 1.3 The purpose of the report is therefore to firstly present the results of an assessment of the existing trees' arboricultural value, based on their current condition and quality in accordance with the guidelines and to secondly provide an assessment of impact arising from the proposed re-development of the site.
- 1.4 This report has been produced to accompany a planning application for the provision of three new distribution warehouses with ancillary offices. In addition, trees surrounding the M1 motorway junction, A45 to the north of the junction and A508 to the south have been included to assess the impact arising to the tree cover. The tree survey has therefore focused on any trees present within or bordering the proposed area of development that may potentially be affected by the future proposals or will pose a constraint to the development.
- 1.5 The site occupies an area of arable farmland situated to the south of Northampton and immediately to the west of the M1 motorway which forms part of the eastern boundary. The remaining portion of the eastern boundary is formed by the A508 heading southwards towards Milton Keynes. The remaining site boundaries were formed Collingtree Road to the north, managed hedgerows containing trees to the west and a watercourse restricting the extent of the site to the south. Tree cover was positioned within the boundary hedgerows surrounding the individual field compartments due to the arable use of the site and within woodland pockets and copses which had been planted as part of Courteen Shooting School.
- 1.6 It is understood following review of the Local Planning Authority website, South Northamptonshire Council, that there are no conservation area designations that would apply to any trees present on, or in close proximity to the assessment site. There are two tree preservation orders which cover trees situated within close proximity to the application boundary and therefore statutory constraints would apply to the development in respect of trees. A plan detailing trees covered by the TPO has been included within the report as Appendix C and further details are given in Chapter 4

- 1.7 The report comprises:
- Chapter 1 provides an introduction to the assessment work, its purpose and background details.
 - Chapter 2 briefly describes the methodology by which the tree survey and assessment has been undertaken.
 - Chapter 3 presents a summary of the results of the tree survey.
 - Chapter 4 evaluates the findings of the survey and assessment in respect of the development proposals in the form of an Arboricultural Impact Assessment and also provides principal recommendations for mitigation planting, specific tree protection measures including pruning.
 - Chapter 5 presents an indication of the tree protection measures to be required from a general viewpoint such as typical fencing requirements.
 - Chapter 6 provides a conclusion to the findings of the assessment.
- 1.8 It must be understood that should any specific tree protection be required, this would need to be separately considered where needs arise prior to the commencement of construction activity following approval of the application. This should be in the form of an arboricultural method statement produced in accordance with guidance in BS5837 and is beyond the scope of this arboricultural assessment.

2.0 METHODOLOGY

- 2.1 The survey of trees has been carried out in accordance with the criteria set out in Chapter 4 of BS5837. The survey has been undertaken by a suitably qualified and experienced arboriculturalist and has recorded information relating to all those trees within the site and those adjacent to the site which may be of influence to any proposals. Trees were assessed for their arboricultural quality and benefits within the context of the proposed development in a transparent, understandable and systematic way.
- 2.2 Trees have been assessed as groups or woodlands where it has been determined appropriate. The term group has been applied where trees form cohesive arboricultural features either aerodynamically, visually or culturally including biodiversity or habitat potential for example parkland or wood pasture. An assessment of individual trees within groups or woodlands has been made where a clear need to differentiate between them, for example, in order to highlight significant variation between attributes including physiological or structural condition or where a potential conflict may arise.
- 2.3 Trees have been divided into one of four categories based on Table 1 of BS5837, '*Cascade chart for tree quality assessment*'. For a tree to qualify under any given category it should fall within the scope of that category's definition (see below). Category U trees are those which would be lost in the short term for reasons connected with their physiology or structural condition. They are, for this reason not considered in the planning process on arboricultural grounds. Categories A, B and C are applied to trees that should be of material considerations in the development process. Each category also having one of three further sub-categories (i, ii, iii) which are intended to reflect arboricultural, landscape and cultural or conservation values accordingly.

- 2.4 **Category (U) – (Red):** Trees which are unsuitable for retention and are 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 within this category are:
- Trees that have a serious irremediable structural defect such that their early loss is expected due to collapse and includes trees that will become unviable after removal of other category U trees.
 - Trees that are dead or are showing signs of significant, immediate or irreversible overall decline.
 - Trees that are infected with pathogens of significance to the health and/ or safety of other nearby trees or are very low quality trees suppressing adjacent trees of better quality.
 - Certain category U trees can have existing or potential conservation value which may make it desirable to preserve.
- 2.5 **Category (A) – (Green):** Trees that are considered for retention and are of high quality with an estimated remaining life expectancy of at least 40 years with potential to make a lasting contribution. Such trees may comprise:
- Sub category (i) trees that are particularly good examples of their species, especially if rare or unusual, or are essential components of groups such as formal or semi-formal arboricultural features for example the dominant and/or principal trees within an avenue.
 - Sub category (ii) trees, groups or woodlands of particular visual importance as arboricultural and / or landscape features.
 - Sub category (iii) trees, groups or woodlands of significant conservation, historical, commemorative or other value for example veteran or wood pasture.
- 2.6 **Category (B) – (Blue):** Trees that are considered for retention and are of moderate quality with an estimated remaining life expectancy of at least 20 years with potential to make a significant contribution. Such trees may comprise:
- Sub category (i) trees that might be included in category A but are downgraded because of impaired condition for example the presence of significant though remediable defects, including unsympathetic past management and storm damage.
 - Sub category (ii) 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.
 - Sub category (iii) trees with material conservation or other cultural value.

2.7 **Category (C) – (Grey):** Trees that are considered for retention and are of low quality with an estimated remaining life expectancy of at least 10 years or young trees with a stem diameter below 150mm. Such trees may comprise:

- Sub category (i) unremarkable trees of very limited merit or such impaired condition that they do not qualify in higher categories.
- Sub category (ii) trees present in groups or woodlands, but without this conferring on them significantly greater collective landscape value or trees offering low or only temporary / transient screening benefits.
- Sub category (iii) trees with no material conservation or other cultural value.

Tree Schedule

2.8 Appendix A presents details of any individual trees, groups, hedgerows and woodlands found during the assessment including heights, diameters at breast height, crown spread (given as a radial measurement from the stem), age class, comments as to the overall condition at the time of inspection, BS5837 category of quality and suitability for retention and the root protection area.

2.9 General observations particularly of structural and physiological condition for example the presence of any decay and physical defect and preliminary management recommendations have also been recorded where appropriate.

Hedgerows

2.10 For the purposes of this report, a hedgerow is described as any boundary line of trees or shrubs less than 5m wide at the base and are managed under a regular pruning regime. Hedgerows and substantial internal or boundary hedges (including evergreen screens) have been recorded including lateral spread, height and stem diameter(s). Where trees are present within a hedgerow that are significantly different in character from the remainder, these have been identified and recorded separately.

2.11 A tree survey in accordance with BS5837 does not assess hedgerows against the Hedgerow Regulations 1997 or specifically from an ecological perspective, and is outside the scope of this assessment.

Other Considerations

2.12 It may also be necessary to undertake further assessment and accurate positioning of woody species within hedgerows and tree groups to assist structural calculations for foundation design of structures in accordance with current building regulations. Knowledge of soil type may however not be known at the time of this tree assessment and therefore the results of the tree survey must be read in conjunction with a current soil survey of the site.

Conditions of Tree Survey

- 2.13 The survey was completed from ground level only and from within the boundary of the site. Aerial inspection of trees was not undertaken at this stage. Investigations as to the internal condition of a tree have also not been undertaken as this is beyond the scope of this assessment. Evaluation of tree condition given within this assessment applies to the date of survey and cannot be assumed to remain unchanged. It may be necessary to review these within 12 months, in accordance with sound arboricultural practice.

Site Plans

- 2.14 Drawing no. 5772-A-01 identifies the assessment area including trees beyond the application boundary that may be affected by future development of the site..
- 2.15 The individual positions of trees and groups have been shown on the Tree Survey Plan, (drawing no. 5772-A-02 to 5772-A-10). The positions of trees are based on a topographical / land survey, as far as possible, supplied by the client. Where topographical information has not identified the position of trees and hedgerows, their relation to any existing surrounding features has been plotted using a global positioning system and aerial photography to provide approximate locations. The crown spread, root protection area and shade pattern (where appropriate) are also indicated on this plan.
- 2.16 As part of the Arboricultural Impact Assessment, a Tree Retention Plan, (drawing no. 5772-A-11 to 5772-A-19) has been prepared to show the proposed layout in relation to the existing tree cover allowing an assessment of any potential conflicts. The plan also identifies which trees would be required to be removed or retained as part of the proposed development.

Tree Constraints and Root Protection Areas

- 2.17 Below ground constraints to future development are represented by the area surrounding the tree that contains sufficient rooting volume for the specimen to have the best chance of survival in the long term. This is known as the root protection area. The root protection area has been calculated in accordance with section 4.6 of BS5837 and requires suitable protection in order for the tree to be successfully incorporated into any future scheme. Where applicable the shape of the root protection area has been modified to take into account the presence of any nearby obstacles (existing or past) which may have restricted root growth and the likely root distribution i.e. the presence of hard standing, structures and underground apparatus.
- 2.18 Where groups of trees have been assessed, the root protection area has been shown based on the maximum sized tree in any one group and so may exceed the root protection area required for some of the individual specimens within the group.
- 2.19 Above ground constraints have been considered such as the current and potential crown spread of the trees and an illustration of the shade pattern (where appropriate) has been plotted on the plans to indicate their potential area of shading influence.

3.0 RESULTS

- 3.1 A total of 81 individual trees 69 groups of trees, 3 woodlands and 24 hedgerows were surveyed as part of the arboricultural assessment. Trees were surveyed as individual trees and groups / blocks of trees where examples are clearly present as such per the description. Refer to Figure 2 – Tree Survey Plan and Appendix A – Tree Schedule for full details of the trees included in this assessment. The table below summarises the trees assessed. Several of the trees have been discussed in more detail following the table, owing to their physical condition or arboricultural significance.

Table 1: Summary of trees by retention category

	Individual Trees	Total	Groups of Trees	Total
Category U - Unsuitable	T16, T17, T23, T32	4		0
Category A (High Quality / Value)	T11, T21, T22, T30, T33, T37, T42, T43, T45, T46, T49, T50, T51, T55, T60, T68, T80	17	G26, G29, G31, G60, W1, W2, W3	7
Category B (Moderate Quality / Value)	T1, T2, T3, T4, T5, T6, T7, T8, T9, T12, T13, T15, T19, T20, T24, T26, T27, T28, T29, T31, T34, T36, T38, T39, T40, T41, T44, T47, T48, T52, T53, T57, T62, T64, T65, T66, T69, T70, T71, T73, T74, T75, T76, T77, T78, T79	46	G1, G2, G3, G6, G7, G8, G9, G10, G12, G15, G17, G19, G20, G21, G22, G23, G24, G25, G28, G30, G33, G35, G36, G37, G38, G39, G40, G41, G42, G43, G44, G45, G48, G49, G50, G51, G52, G53, G56, G61, G63, G64, G65, G68, G69, H10	46
Category C (Low Quality / Value)	T10, T14, T18, T25, T35, T54, T56, T58, T59, T61, T63, T67, T72, T81	14	G4, G5, G11, G13, G14, G16, G18, G27, G32, G34, G46, G47, G54, G55, G57, G58, G59, G62, G66, G67, H1, H2, H3, H4, H5, H6, H7, H8, H9, H11, H12, H13, H14, H15, H16, H17, H18, H19, H20, H21, H22, H23, H24	43

- 3.2 Tree cover situated adjacent to the A508 comprised numerous broadleaf groups mainly situated within hedgerows bounding the site or within small copses alongside the carriageway. Standard trees within the elm *Ulmus spp* dominated hedgerows were typically of mature age and had possibly been planted at the time of the construction of the M1 and improvements and alterations to the A508. Additional planting of trees amongst the existing hedgerows may also possibly have been implemented after the loss of mature elm trees during the 1970's which would have been present amongst the predominantly elm hedgerows.

- 3.3 A number of trees situated at the transition between the motorway junction and A508 had reached early maturity in the case of G3 however, the horse chestnut trees *Aesculus hippocastanum* within the group displayed lesions on the bark typical of *pseudomonas syringae* pv. *Aesculi* bleeding canker of horse chestnut. The lesions (necrotic patches) eventually kill the tree through ring girdling action and therefore further monitoring of this group would be advisable due to its current position adjacent to the existing carriageway.
- 3.4 Further northwards tree groups G4 and G5 had been planted on the embankments of the motorway junction adjacent to the A508. The trees within these groups were of immature age and limited form housing few defects of note.
- 3.5 Tree groups situated adjacent to the M1 motorway included an outgrown hedgerow which had originally provided the field parcel boundary (G19) and a predominantly coniferous tree belt (G18) positioned between the site boundary and northbound slip road. The coniferous group provided a dense visual barrier and green link between G4 to the south and a young broadleaf plantation (G19) to the north. The remaining vegetation forming the eastern boundary was similar in form with a laterally managed hedgerow (H18) immediately adjacent to the field compartment and a larger linear tree group (G30) situated on the embankment beyond. H18 also extended in a westerly direction forming the northern boundary adjacent to Collingtree Road. The structure of these tree groups and hedgerows which had outgrown their original form provided a significant level of screening of the site from beyond the boundary.
- 3.6 The boundary vegetation further westwards had outgrown through a lack of formal management providing two mature tree belts (G50 & G51) housing common ash *Fraxinus excelsior*, blackthorn *Prunus spinosa* and hawthorn *Crataegus monogyna* which had been laid in the past to form a dense barrier. Specimens housed typical defects such as small pieces of dead wood and branch stubs through the use of a tractor mounted flail mower to reduce crowns. Within the hedgerow stood two mature specimen trees T43, an English oak of good overall form and T44 which was an ash of fair form. T43 was considered to be retention category A due to its high quality, limited defects and prominent position adjacent to Collingtree Road. T44 however, housed areas of damage including broken branches, branch stubs and large sections of dead branch material resulting from adverse weather conditions. A lateral lever arm was also present to the west which may, over time, fail leaving the heartwood exposed to infection by fungal spores and allow the ingress of decay.
- 3.7 The western boundary of the site was formed by two mature hedgerows (H10 & H11) interspersed with high quality mature trees of generally good form (G31). Amongst G31 stood a number of damaged and degraded trees offering only limited future contribution to the site (category U) for the long term due to their individual defects. The land adjacent to the boundary group had been regularly ploughed possibly causing damage to the rooting structure and subsequently resulting in crown dieback of a few specimens. Further towards the south of the boundary stood a parcel of mature woodland (W1) comprising both broadleaf and coniferous species forming a multi layered structure with dense understory. A number of small open glades were present in several places through the loss or removal of trees in the past allowing light to reach the shrubs beneath.

- 3.8 The southern boundary of the site was formed by a small watercourse beyond which stood a hedgerow (H19) with mature tree cover (T48 – T52 and G12 & G32 – G35) interspersed throughout. Several trees of high quality were present within this linear tree belt including T49, T50 and T51 due to their lack of defects and prominent contribution to the site. The remaining tree cover was considered to be of moderate quality housing typical defects found amongst trees under limited management such as large pieces of dead wood, pruning wounds and broken branches.
- 3.9 Centrally within the site stood a woodland parcel W2, several tree groups (G42, G43 G44) surrounding Courteen Shooting School and mature hedgerows incorporating numerous trees. To the north of the shooting school and adjacent to the application boundary stood two mature groups of trees (G25 & G26) being considered retention category B and A respectively. These groups offered significant landscape features that were prominent within the site and beyond.
- 3.10 Trees within the hedgerows throughout the site ranged in age and quality with the majority being considered moderate due to their lack of management and typical defects observed throughout the crowns. Several high quality mature oak trees were also positioned within the hedges dividing the site internally. All of the oaks were in good condition housing only limited defects of note and providing greater arboricultural value than the surround tree cover.
- 3.11 A number of recently planted linear tree groups had been established throughout the site providing future tree cover adjacent to existing hedgerows. These groups included G11, G13, G14, G21, G22, G23, G24 G40 and G41 comprising mainly native species housing few defects of significance due to their limited ages.
- 3.12 The area to the south of the site beyond the field ditch / stream consists of two field compartments separated by a maintained boundary hedgerow (H23) containing a number of individual trees and a woodland parcel. Intermittent tree cover followed the southern site boundary standing above patchy hedgerows which demark the extent of the assessment area. Trees positioned along the eastern boundary stood within the field boundary hedgerow and immediately adjacent to Northampton Road. The tree cover in this portion of the site was generally considered to be of moderate quality with the exception being the woodland parcel (W3) and T68 which were both found to be of high quality.

4.0 ARBORICULTURAL IMPACT ASSESSMENT

- 4.1 The following paragraphs present a summary of the tree survey and offers discussion of particular trees and groups recorded in the context of any proposed development in the form of an Arboricultural Impact Assessment in accordance with section 5.4 of BS5837. Any final tree retentions will need to be reconciled with the advice contained within this report.
- 4.2 The AIA has been based upon the Masterplan and seeks to outline the potential impact that the proposals would have on the existing trees and vice versa. The above drawing shows the proposals for the construction of seven distribution units with supporting office facilities, car parking and internal road and service network. The proposals also identify the position of soil bunds surrounding the site containing significant areas of planting to provide screening from the wider landscape and attenuation ponds situated towards the south east of the site within areas of lower ground. An overlay of the above layout has been incorporated in the Tree Retention Plan to assist in identifying potential conflicts with the existing trees.

Table 2: Summary of impact on trees, groups, hedgerows and woodlands

	Trees to be Retained	Total	Trees to be Removed	Total
Category U - Unsuitable	0	0	T16, T17, T23, T32	4
Category A (High Quality / Value)	T42, T43, T45, T46, T49, T50, T51, T60, T68, T80, G29, G60, 98% of W1, 84% of W2, W3	15	T11, T21, T22, T30, T33, T37, T55, G26, G31, 2% of W1, 16% of W2, W3	12
Category B (Moderate Quality / Value)	T13, T44, T47, T48, T52, T57, T62, T64, T65, T66, T69, T70, T71, T73, T74, T75, T76, T77, T78, T79, G8, G9, G12, G17, G19, G30, G33, G35, G39, G42, G43, G44, part of G50, G51, G52, G53, G56, G61, G63, G64, G65, G68, G69	43	T1, T2, T3, T4, T5, T6, T7, T8, T9, T12, T15, T19, T20, T24, T26, T27, T28, T29, T31, T34, T36, T38, T39, T40, T41, T53, G1, G2, G3, G6, G7, G10, G15, G20, G21, G22, G23, G24, G25, G28, G36, G37, G38, G40, G41, G45, G48, G49, part of G50, H10	50
Category C (Low Quality / Value)	T58, T59, T61, T63, T67, T72, G18, G32, G34, G54, G55, G57, G58, G59, G62, H1, H18, H19, H23, H24	20	T10, T14, T18, T25, T35, T54, T56, T81, G4, G5, G11, G13, G14, G16, G27, G47, G66, G67, H2, H3, H4, H5, H6, H7, H8, H9, H11, H12, H13, H14, H16, H17, H20, H21, H22	34

- 4.3 The strategic benefits of this development in terms of local and national investment would provide the potential for job creation and offer economic benefits that would outweigh the loss of the existing trees shown as being removed. Although the tree loss shown could be considered significant, fewer high quality trees are to be removed than retained and the large blocks of tree cover and linear tree belts assessed are to be retained and incorporated. Significant areas of new tree and shrub planting, in terms of both the number of trees and future canopy cover, would clearly outweigh the losses shown and therefore, in terms of mitigation, the proposals offer an extensive increase when considering the balance between losses and gains.
- 4.4 The position of the distribution warehouses is to be towards the east and south of the site adjacent to the M1 motorway, A508 and watercourse. New railway sidings are to be positioned to the west of the site to provide rail transport serving the warehouse units. The western, northern and southern areas are to be remodelled to provide soil bunds supporting large areas of strategic woodland tree and shrub planting to produce vegetative screening of the development from the wider landscape whilst also acting as a wildlife corridor and mitigation for the losses identified. Tree and hedgerow impacts will therefore be focused in those areas proposed for development to provide a level surface and the surrounding earthworks. The layout has been designed to avoid the loss of consolidated tree groups and woodland parcels situated centrally within the site however, development of this type within the site will inevitably lead to some tree and hedgerow loss due to the space required and limited design flexibility of the distribution units.
- 4.5 The existing linear tree groups positioned adjacent to the M1 motorway are to be retained as screening and reinforced through additional planting located on the earth bunding. Although the tree and shrub planting on top of the earth bunds will provide mitigation for the loss of tree cover rapid growth of the new tree planting and management to ensure the mature tree heights are reached as quickly as possible to fully screen the development within a reasonable timescale. Management of the new trees planted on top of the bunds through formative pruning, thinning and control of the competing weed growth would however benefit the growth rates of the new trees and provide screening over a shorter space of time providing graduated, softened views between the site and local area.
- 4.6 Alterations to south bound slip road from the M1 and A45 roundabout will impact upon trees which are the subject of a Tree Preservation Order. Earth works will require the removal of existing highway buffer planting along with T81 and G67. Both T81 and G67 forms part of the South Northamptonshire Council Tree Preservation Order (TPO), No. 2/2001 Grange Park, Courteenhall. The loss of these trees should not be seen as detrimental due to the low quality present and limited impact upon trees being retained to the north which are also part of the TPO.
- 4.7 Alterations to the A508 to provide sufficient access from the M1 motorway into the site will include alterations to the entry and exit ramps and the widening of the carriageway resulting in the loss of the majority of tree cover adjacent. New tree planting should therefore be provided adjacent to the new carriageway to mitigate for the loss of this tree cover currently providing linear tree groups linking the various elements of the site. Further alterations to the carriageway to provide a new traffic island for access into and from the site will require further tree and hedgerow loss to the west of the carriageway although trees positioned to the east of the existing carriageway will be retained and enhanced through additional tree planting.

- 4.8 The development of the central portion of the site will require the loss of all of the existing trees and hedgerows currently providing the individual field boundary parcels. The vast majority of woodland is to be retained however, approximately 2% of woodland W1 and 16% of woodland W2 is to be removed to facilitate the development. Extensive new woodland tree planting surrounding both woodland parcels has however been identified within the proposed plans to offer a suitable level of direct mitigation and this planting will contribute to the overall amount of overall area of canopy cover.

Table 3: Woodlands W1 & W2 Impact and Mitigation

Woodland reference	Existing Woodland Area (msq)	Woodland being lost (msq)	Woodland being retained (msq)	New woodland planting immediate (sqm)	Total Wooded area post completion (msq)
W1	29286 (2.9Ha)	575 (0.06Ha)	28711 (2.9Ha)	47396 (4.7Ha)	76107 (7.6Ha)
W2	15038 (1.5Ha)	2067 (0.2Ha)	12971 (1.3Ha)	16558 (1.6Ha)	29529 (2.9 Ha)

- 4.9 Inclusive of the above figures above the new woodland planting across the site will extend to a total area of 29.5Ha which would only be undertaken if the proposals for the site are approved and in terms of arboriculture. The development of the site, although tree and hedgerow loss is required should be seen as an opportunity to provide a long term gain in terms of trees and provision of extensive woodlands that would benefit the site for year to come.
- 4.10 New tree and hedgerow planting will provide an integral part of the new development as ornamental amenity trees, for their contribution to urban design thereby complementing the areas around the new warehouse units and native trees, for their low maintenance requirements and nature conservation value positioned adjacent to the existing woodland parcels and on the soil bunds surrounding the site. As part of the development proposals an adequate quantity of tree and hedgerow planting has been included more than mitigate for the loss of trees required to facilitate the development.
- 4.11 Species choices within the areas of car parking and landscaping surrounding the commercial units should be selected on the basis of their suitability for the final site use. Careful consideration would need to be given to the following: ultimate height and canopy spread, form, habit, density of crown, potential shading effect, colour, water demand, soil type and maintenance requirements in relation to both the built form of the new development and existing properties.

Tree Management

- 4.12 All retained trees should be subjected to sound arboricultural management as recommended within section 8.8.3 of BS5837 *Post Development Management of Existing Trees*, where there is a potential for public access in order to satisfy the landowner's duty of care. Additionally inspections annually and following major storms should be carried out by an experienced arboriculturalist or arborist to identify any potential public health and safety risks and to agree remedial works as required.
- 4.13 All tree works undertaken should comply with British Standard 3998:2010 and should therefore be carried out by skilled tree surgeons. It would be recommended that quotations for such work be obtained from Arboricultural Association Approved Contractors as this is the recognised authority for certification of tree work contractors.
- 4.14 All vegetation and, particularly, woody vegetation proposed for clearance should be removed outside of the bird-breeding season (March - September inclusive) as all birds are protected under the Wildlife and Countryside Act, 1981 (as amended) whilst on the nest. Where this is not possible, vegetation should be checked for the presence of nesting birds prior to removal by an experienced ecologist.

General Design Principles in Relation to Retained Trees

- 4.15 As recommended by the guidance given in section 7.7 of BS5837 services, where possible, should not encroach within the root protection areas of retained trees. If below-ground services are proposed within a root protection area modifications to the alignment of the service route may need to be made in order to minimise adverse effects on root stability and overall tree-health.
- 4.16 Consideration may also need to be given to the potential for tree roots of newly planted trees and hedgerows to affect or compromise the future services. As far as feasible, it would be preferable that proposed services near both the existing and any new planting should be ducted for ease of access and maintenance and grouped together to minimise any future disturbance.

Statutory Constraints

- 4.17 The following table details which trees are included in the Northampton Borough Council Tree Preservation Order (TPO), No. 63: Collingtree Lodge and the South Northamptonshire Council Tree Preservation Order (TPO), No. 2/2001 Grange Park, Courteenhall. The trees identified within the TPO are protected by law from felling or uprooting, pruning including 'topping/lopping' and willful damage or destruction. The granting of full planning permission would override the protection afforded by the Tree Preservation Order to those trees shown as removed to facilitate the proposals within the approved plans.

Table 4: Tree Preservation Order details

Tree No, taken from FPCR	TPO reference no.	Conservation Area
G52	A1 – TPO 2/2001	
T81	T1 – TPO 63	
G67	G1 – TPO 63	
G68	G2 – TPO 63	
G69	T2, T3, T4, T5, T6, T7, T8, T9, T10, T11, T12, T13, T14, T15, T16, T17, T18, T19, T20, G3, G4 – TPO 63	
T59	T21 – TPO 63	

- 4.18 Prior to any tree surgery and / or felling of protected trees it will be necessary to apply to the relevant local planning authority to gain consent for the works. For more information regarding Conservation Areas and Tree Preservation Orders it is advised that contact is made with the Local Planning Authority's arboricultural officer, or other such relevant person.

5.0 TREE PROTECTION MEASURES

- 5.1 Retained trees will be adequately protected during works ensuring that the calculated root protection area for all retained trees can be appropriately protected through the erection of the requisite tree protection barriers. Measures to protect trees should follow the guidance in BS5837 and will be applied where necessary for the purpose of protecting trees within the site whilst allowing sufficient access for the implementation of the proposed layout. These have been broadly summarised below.

General Information and Recommendations

- 5.2 All trees retained on site will be protected by suitable barriers or ground protection measures around the calculated root protection area, crown spread of the tree or other defined constraints of this assessment as detailed by section 6 and 7 of BS5837.
- 5.3 Barriers will be erected prior to commencement of any construction work and before demolition including erection of any temporary structures. Once installed, the area protected by fencing or other barriers will be regarded as a construction exclusion zone. Fencing and barriers will not be removed or altered without prior consultation with the project arboriculturalist.
- 5.4 Any trees that are not to be retained as part of the proposals should be felled prior to the erection of protective barriers. Particular attention needs to be given by site contractors to minimise damage or disturbance to retained specimens.
- 5.5 Confirmation that tree protective fencing or other barriers have been set out correctly should be gained prior to the commencement of site activity.

Tree Protection Barriers

- 5.6 Tree protection fencing should be fit for the purpose of excluding any type of construction activity and suitable for the degree and proximity of works to retained trees. Barriers must be maintained to ensure that they remain rigid and complete for the duration of construction activities on site.
- 5.7 In most situations fencing should comprise typical construction fencing panels attached to scaffold poles driven vertically into the ground. For particular areas where construction activity is anticipated to be of a more intense nature supporting struts acting as a brace should be added and fixed into position through the application of metal pins driven into the ground to offer additional resistance against impacts. Where site circumstances and the risk to retained trees do not necessitate the default level of protection an alternative will be specified appropriate to the level / nature of anticipated construction activity. The recommended method of fencing for this site has been illustrated in Appendix B.
- 5.8 It may be appropriate on some sites to use temporary site offices, hoardings and lower level barrier protection as components of the tree protection barriers. Details of the specific protection barriers for the site can be provided should the application be approved, as part of a site specific Arboricultural Method Statement for a Reserved Matters application and in accordance with the guidance contained within BS5837.
- 5.9 The location of and design for tree protection should be detailed as part of an Arboricultural Method Statement required by conditioning should planning permission be granted. In all cases, the objective is to avoid damage to the trees' rooting structure and crowns in close proximity to the development area.

Protection outside the exclusion zone

- 5.10 Once the areas around trees have been protected by the barriers, any works on the remaining site area may be commenced providing activities do not impinge on protected areas.
- 5.11 All weather notices should be attached to the protective fencing to indicate that construction activities are not permitted within the fenced area. The area within the protective barriers will then remain a construction exclusion zone throughout the duration of the construction phase of the proposed development. Protection fencing signs can be provided upon request.
- 5.12 Wide or tall loads etc should not come into contact with retained trees. Banksman should supervise transit of vehicles where they are in close proximity to retained trees.
- 5.13 Oil, bitumen, cement or other material that is potentially injurious to trees should not be stacked or discharged within 10m of a tree stem. No concrete should be mixed within 10m of a tree. Allowance should be made for the slope of ground to prevent materials running towards the tree.
- 5.14 No fires will be lit where flames are anticipated to extend to within 5m of tree foliage, branches or trunk, taking into consideration wind direction and size of fire.
- 5.15 Notice boards, telephone cables or other services should not be attached to any part of a retained tree.
- 5.16 Any trees which need to be felled adjacent to or are present within a continuous canopy of retained trees, must be removed with due care (it may be necessary to remove such trees in sections).

Protection of Trees Close to the Site

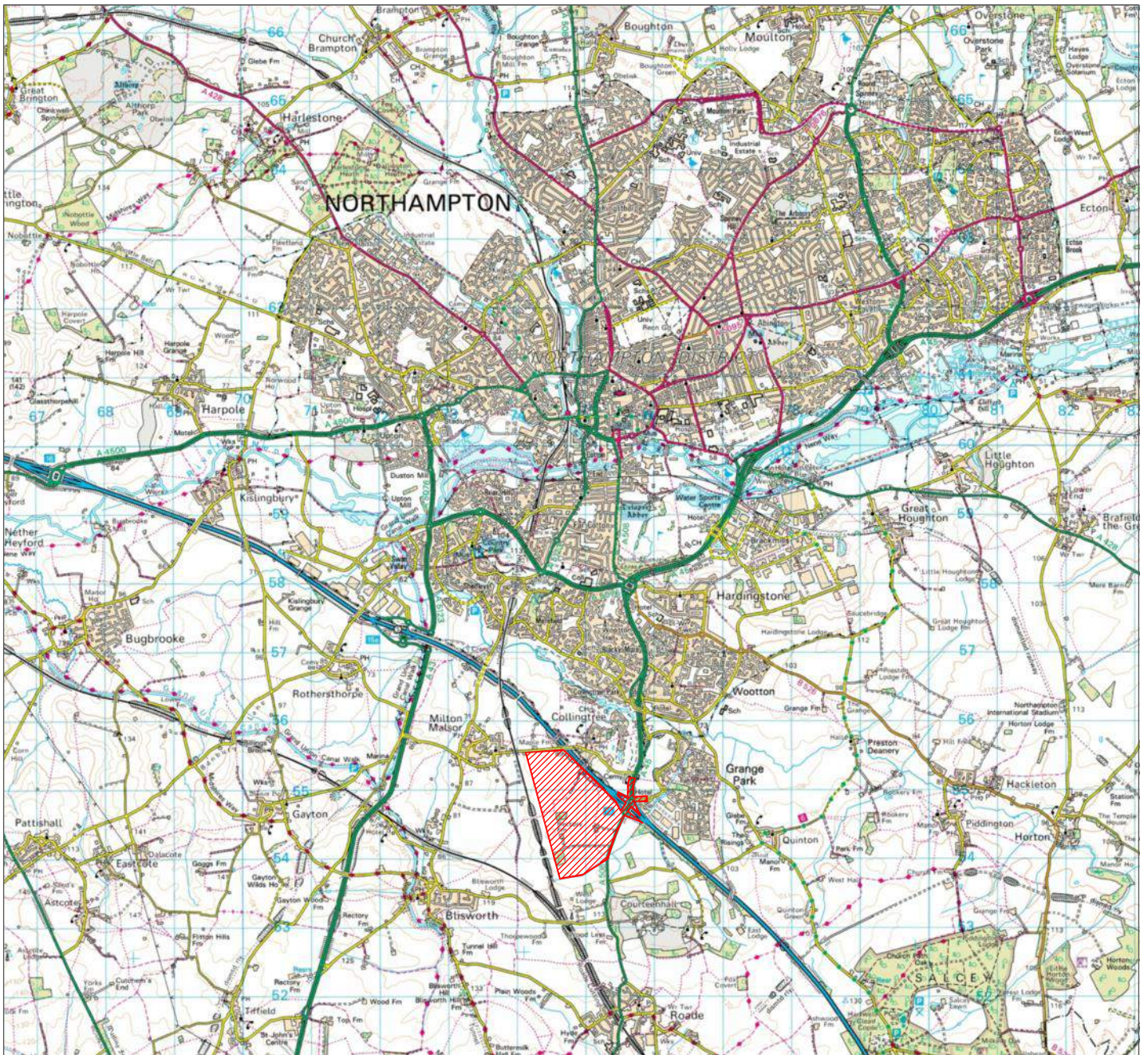
- 5.17 There were a number of trees located on the boundaries of the site. The root protection area and crown spread of these trees will need to be protected in the same way as all the retained trees within the site. All trees located outside the boundaries of the assessment site yet within close proximity to works should be adequately protected during the course of the development by barriers or ground protection around the calculated root protection area.
- 5.18 Any trees which are to be retained and whose root protection areas may be affected by the development should be monitored, during and after construction, to identify any alterations in quality with time and to assess and undertake any remedial works required as a result.

Protection for Aerial Parts of Retained Trees

- 5.19 Where it is deemed necessary to operate a wide or tall load, plant bearing booms, jibs and counterweights or other such equipment as part of the construction works it is best advised that appropriate, but limited tree surgery, be carried out beforehand to remove any obstructive branches. Any such equipment would have potential to cause damage to parts of the crown material, i.e. low branches and limbs, of retained trees within the protective barriers. This is termed as 'access facilitation pruning' within BS5837. Any such pruning should be undertaken in accordance with a specification prepared by an arboriculturalist.
- 5.20 A pre-commencement site with contractors who are responsible for operating machinery will be required, as described above, to firstly highlight the potential for damage occurring to tree crowns and to ensure that extra care is applied when manoeuvring machinery during such operations within close proximity to retained trees to avoid any contact.
- 5.21 In the event of having caused any branch or limb damage to retained trees it is strongly recommended that suitable tree surgery be carried out, in accordance with British Standard 3998:2010 and in agreement with the Local Planning Authority prior to correcting the damage, upon completion of development.

6.0 CONCLUSION

- 6.1 The site occupies an area of arable farmland situated to the south of Northampton and immediately to the west of the M1 motorway which forms part of the eastern boundary. The remaining portion of the eastern boundary is formed by the A508 heading southwards towards Milton Keynes. The remaining site boundaries were formed by Collingtree Road to the north, managed hedgerows containing trees to the west and a watercourse restricting the extent of the site to the south. Tree cover was positioned within the boundary hedgerows surrounding the individual field compartments due to the arable use of the site and within woodland pockets and copses which had been planted as part of Courteen Shooting School.
- 6.2 The position of the seven distribution warehouses are to be located towards the east and south of the site adjacent to the M1 motorway and A508. The western, northern and southern areas are to be remodelled to provide soil bunds supporting large areas of planting to provide screening of the development from the wider landscape. Tree and hedgerow impacts will therefore be focused in those areas proposed for development and surrounding earthworks to provide a level surface. The layout has been designed to avoid the loss of consolidated tree groups and woodland parcels situated centrally within the site however, development of this type within the site will inevitably lead to some tree and hedgerow loss due to the space required and limited flexibility of the distribution units.
- 6.3 Alterations to the A508 to provide sufficient access from the M1 motorway and into the site will include the widening of the carriageway and construction of a new traffic island resulting in the loss of the majority of tree cover adjacent. New tree planting should therefore be provided alongside the new carriageway to mitigate for the loss of this tree cover currently providing linear tree cover linking the various elements of the site.
- 6.4 The retained existing tree and hedgerow cover is to be enhanced through additional planting of large linear areas of native mixed tree belts, multiple sections of hedgerow planting and new amenity tree planting within the development parcel. New proposed tree planting will provide a significant increase in tree cover within the application boundary. Despite the loss of tree and hedgerow cover the development of the site should be considered acceptable due to the extensive restocking of the site that has been designed to reduce the visual impact upon the surrounding area whilst providing new green corridors between the individual woodland parcels, tree groups and hedgerows containing individual specimen trees. The long term benefits of this new planting will provide significant advantages in terms of arboriculture that will result in large areas of high quality woodland surrounding the site and linking the existing woodland parcels to the boundaries and wider landscape.



KEY



Assessment Boundary

rev	date	description	by
	01.12.2014	First Issue	DS



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 environmental assessment ■
 landscape design ■
 urban design ■ FPCR Environment and Design Ltd
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project
M1 Junction 15 West
Northampton

drawing title
ASSESSMENT BOUNDARY PLAN

scale
1:25000 @ A4

drawn
TCB

date
April 2018

drawing number

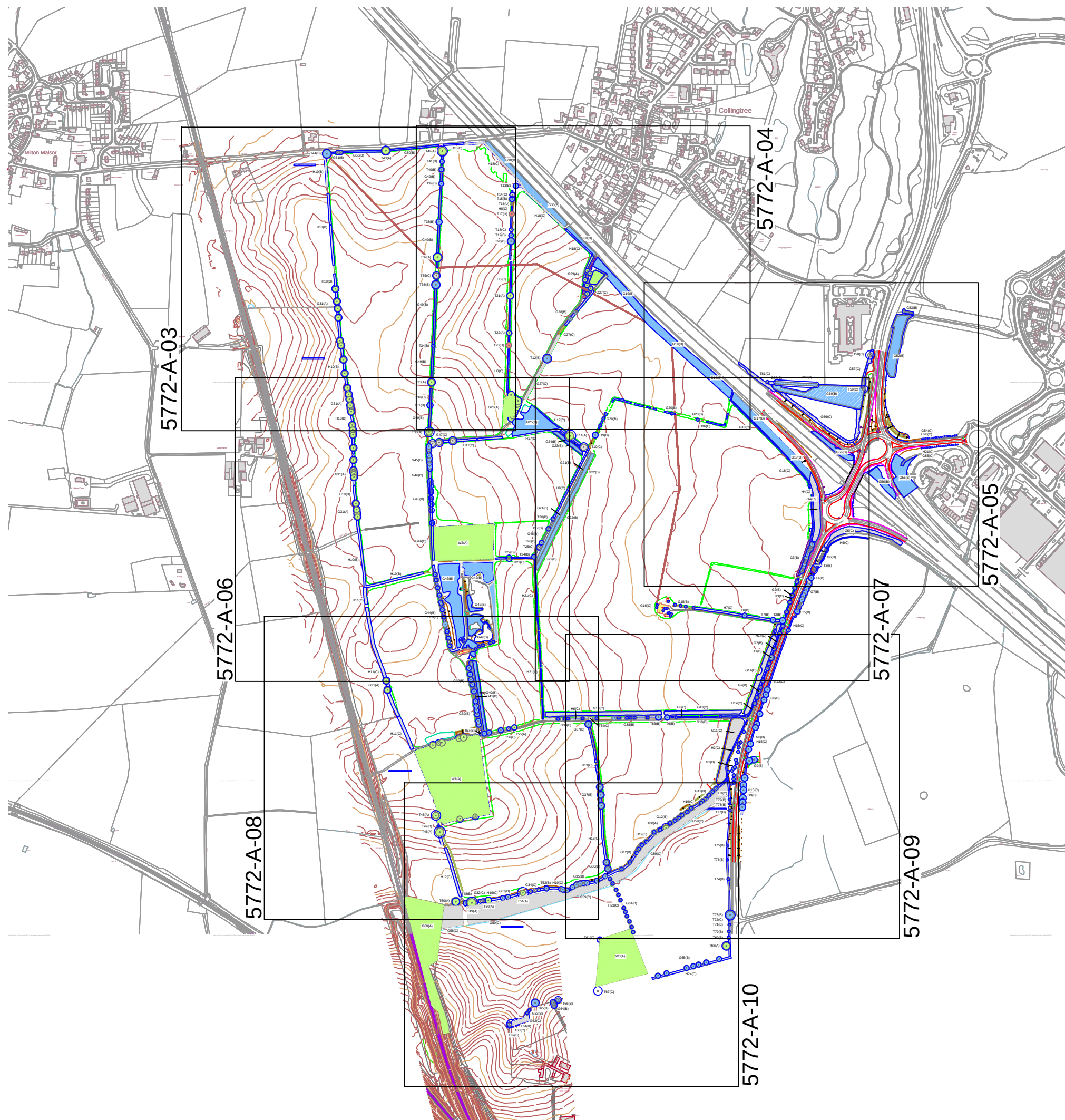
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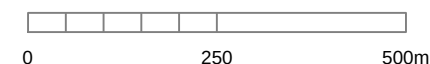
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T1 (A)
G1 (A)

Scale 1:10000 @ A3



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-	14.11.2014	First Issue	DJS
A	24.01.2017	Resurvey and additional areas included	DJS
B	14.08.17	Inclusion of area to the west	DJS
C	April 2018		TCE
D	08.05.2018	Update of roadside trees	TCE

rev	date	description	by
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- landscape design ■
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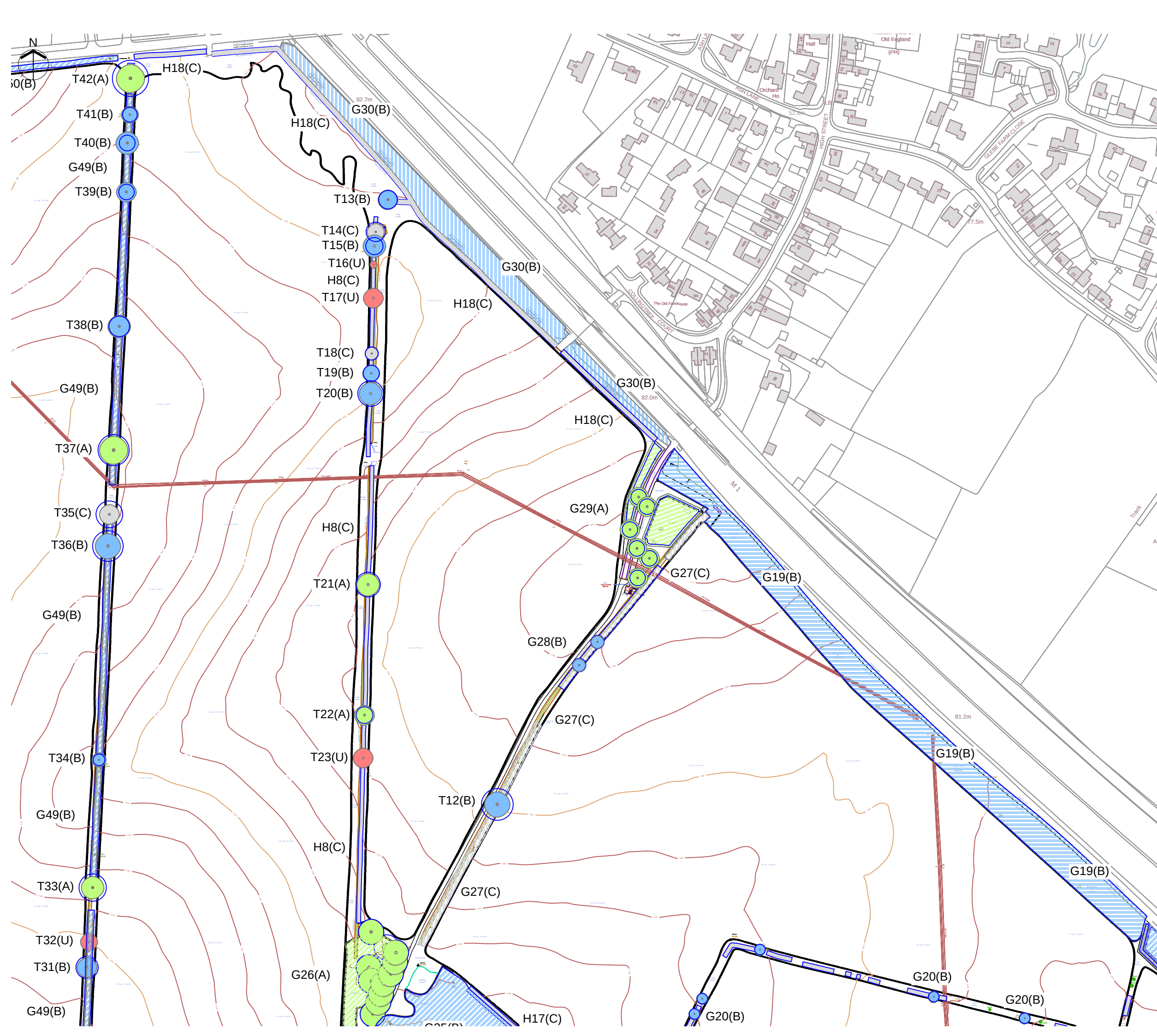
project
M1 Junction 15 West
Northampton

drawing title
TREE SURVEY PLAN PAGE LAYOUT

scale drawn date
1:10000 @ A3 TCB May 2018

drawing number
5772-A-02

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KEY

- Category U - Trees / Groups Unsuitable for Retention (BS 5837:2012)
- Category A - Trees / Groups of High Quality (BS 5837:2012)
- Category B - Trees / Groups of Moderate Quality (BS 5837:2012)
- Category C - Trees / Groups of Low Quality (BS 5837:2012)
- Hedgerow (Colour indicates BS5837:2012 Category)
- Root Protection Area (The RPA has been altered where appropriate to reflect underground constraints)
- Individual / Group Number and BS5837:2012 Category

Scale 1:2500 @ A3

0 50 100 150m

NOTES

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A	24.01.2017	Resurvey and additional areas included	DJS
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client
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project
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drawing title
TREE SURVEY PLAN

scale
1:2500 @ A3

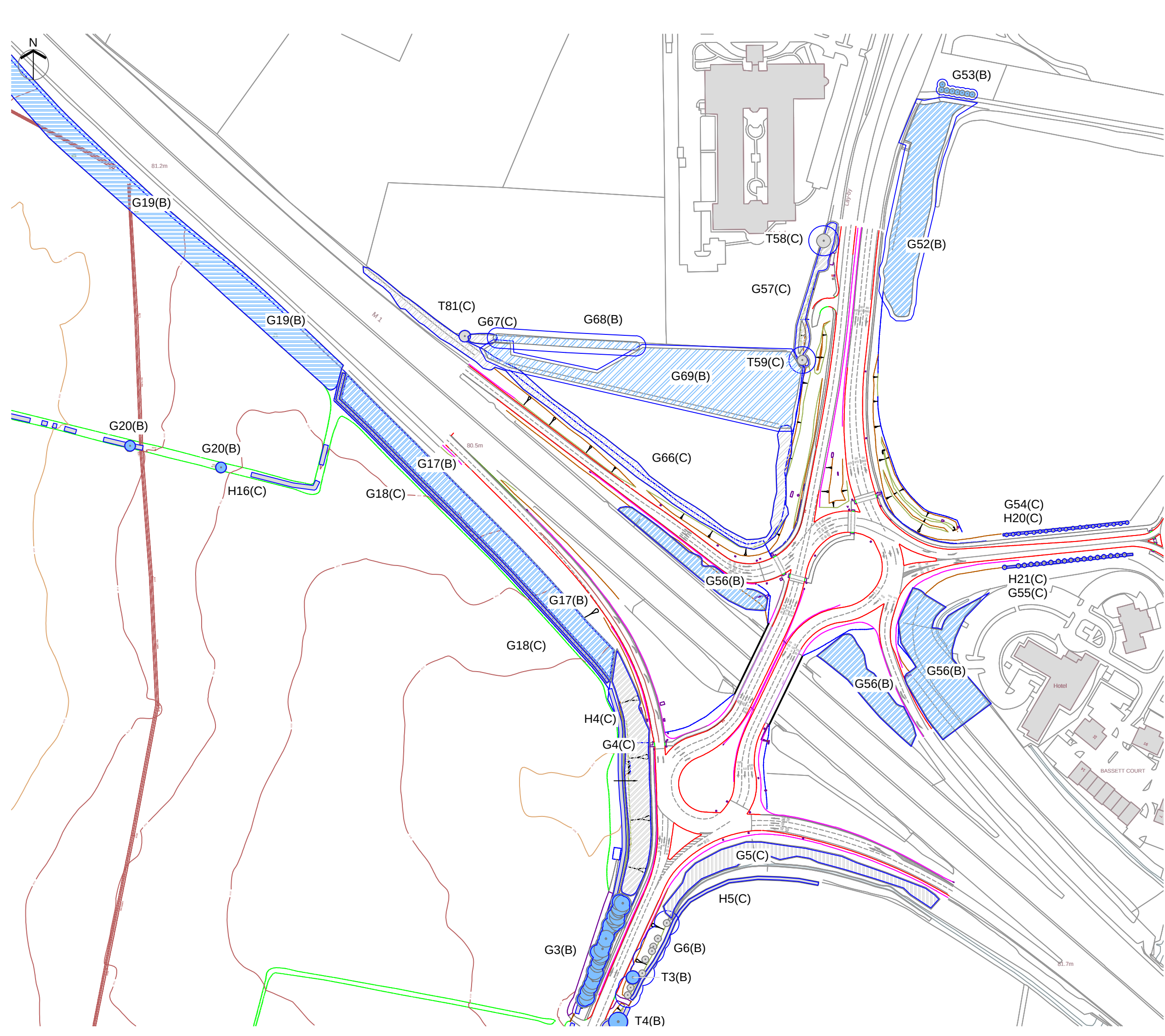
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B

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KEY

Category U - Trees / Groups Unsuitable for Retention
(BS 5837:2012)

Category A - Trees / Groups of High Quality
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Category B - Trees / Groups of Moderate Quality
(BS 5837:2012)

Category C - Trees / Groups of Low Quality
(BS 5837:2012)

Hedgerow
(Colour indicates BS5837:2012 Category)

Root Protection Area (The RPA has been altered
where appropriate to reflect underground constraints)

T1 (A)
G1 (A)

Individual / Group Number and BS5837:2012 Category

Scale 1:2500 @ A3

0

50

100

150m

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A	14.11.2014	First Issue	DJS
A	24.01.2017	Resurvey and additional areas included	DJS
B	April 2018		TCB
C	08.05.2018	Updated roadside trees	TCB

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project

M1 Junction 15 West Northampton

drawing title

TREE SURVEY PLAN

scale

1:2500 @ A3

drawn

TCB

date

May 2018

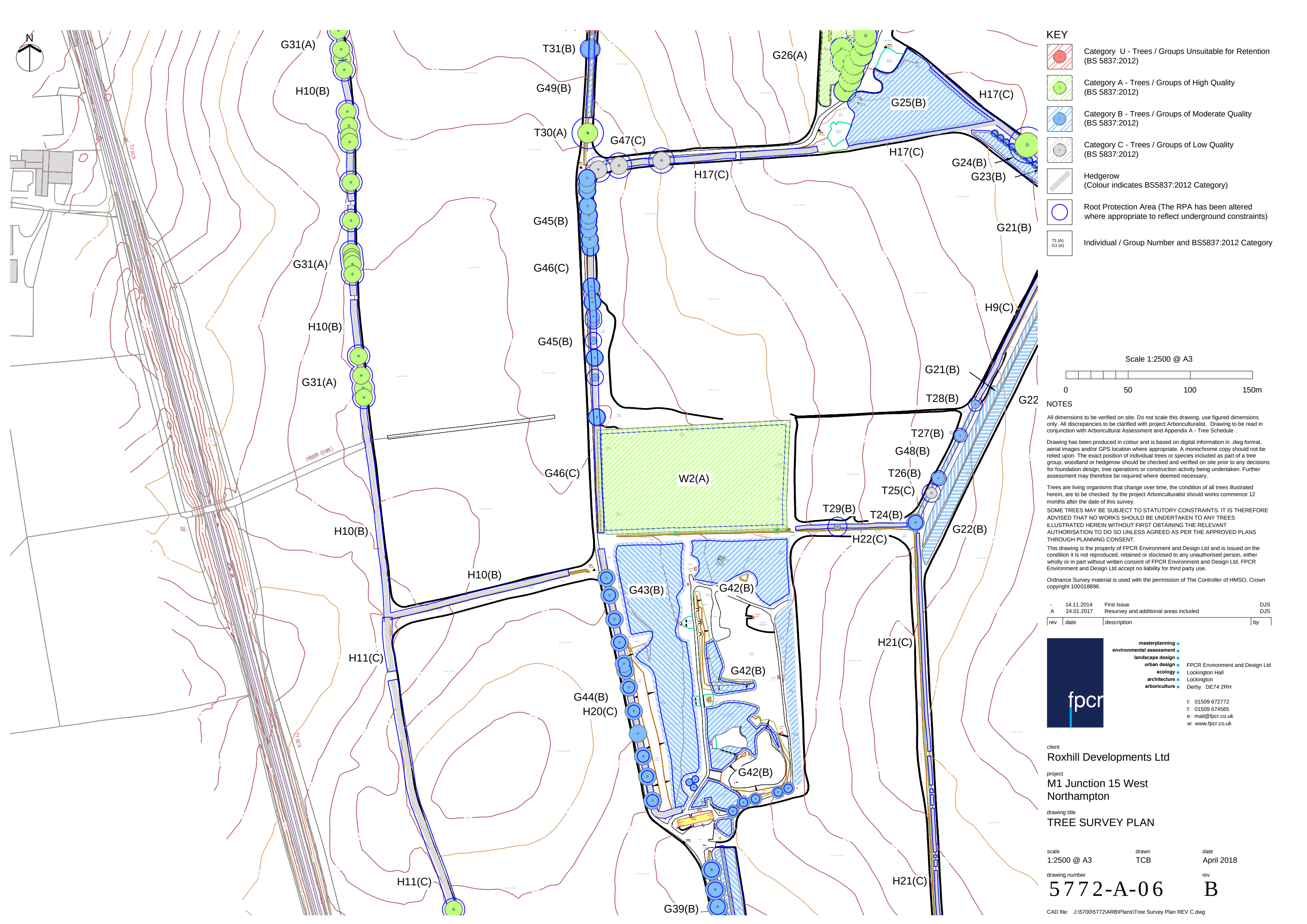
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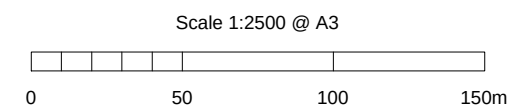
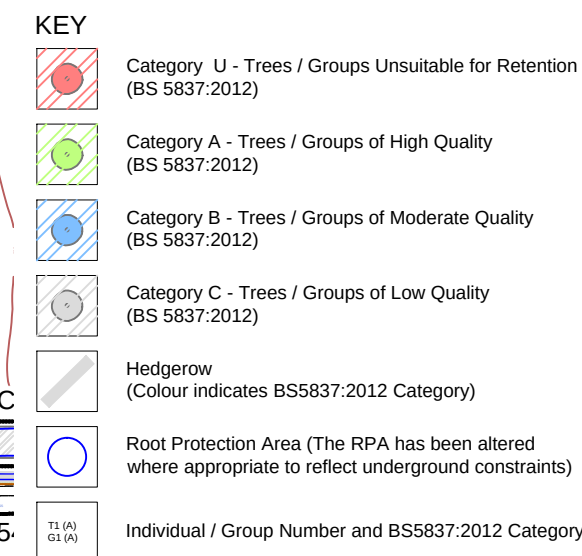
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TREE SURVEY PLAN

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April 2018

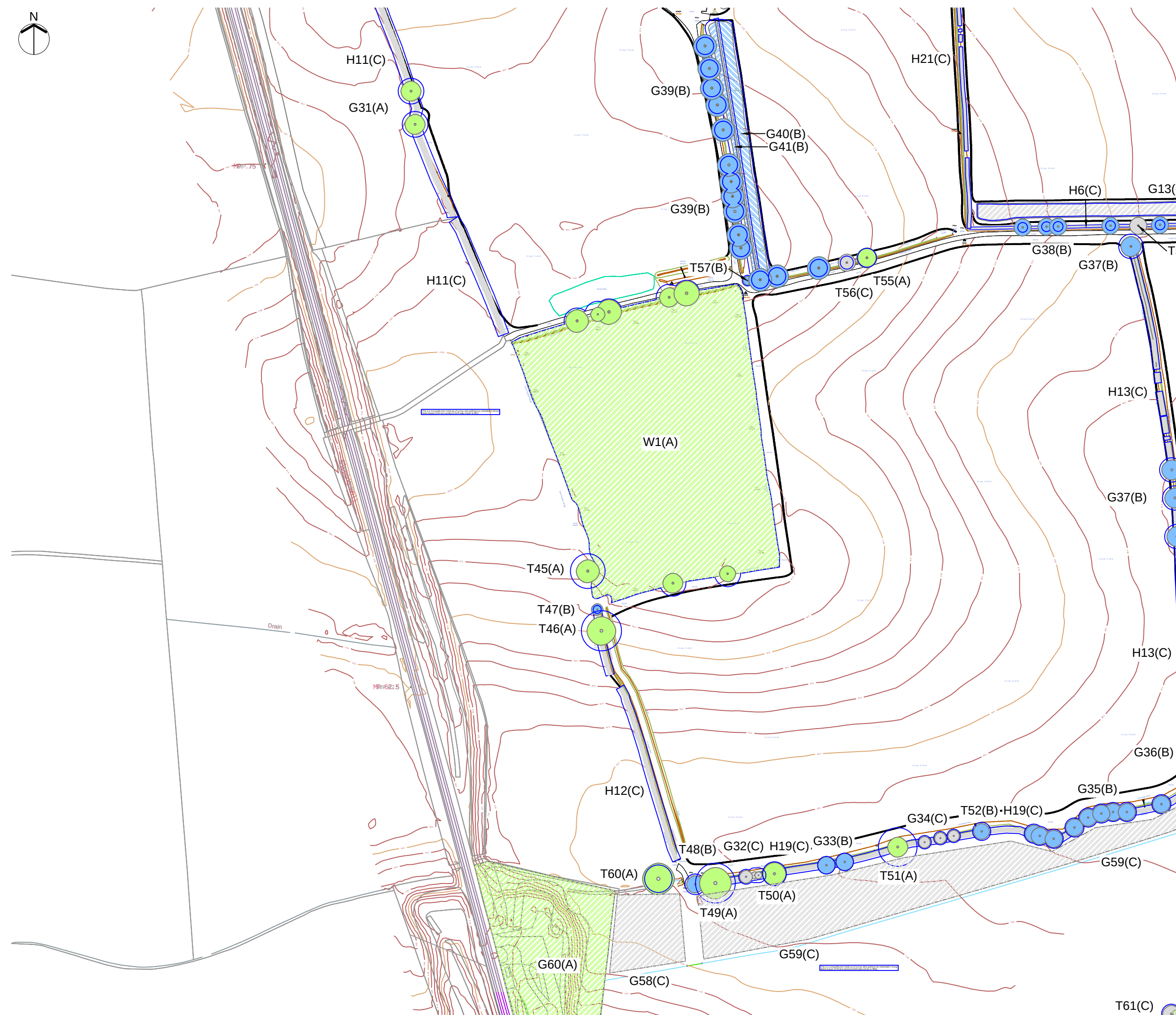
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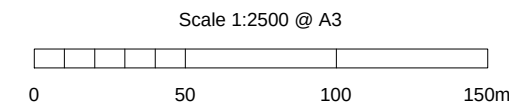
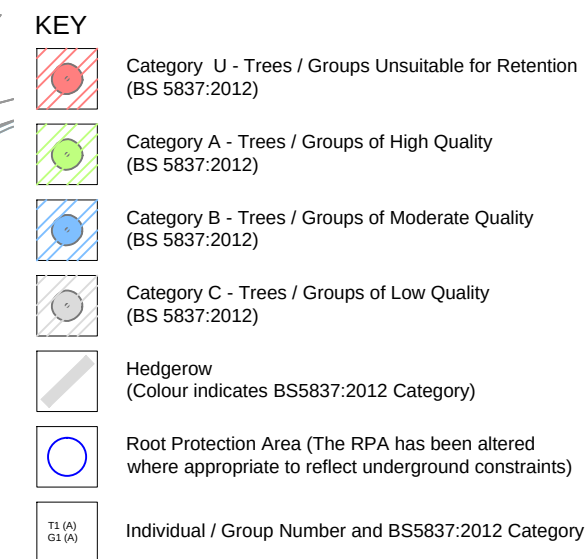
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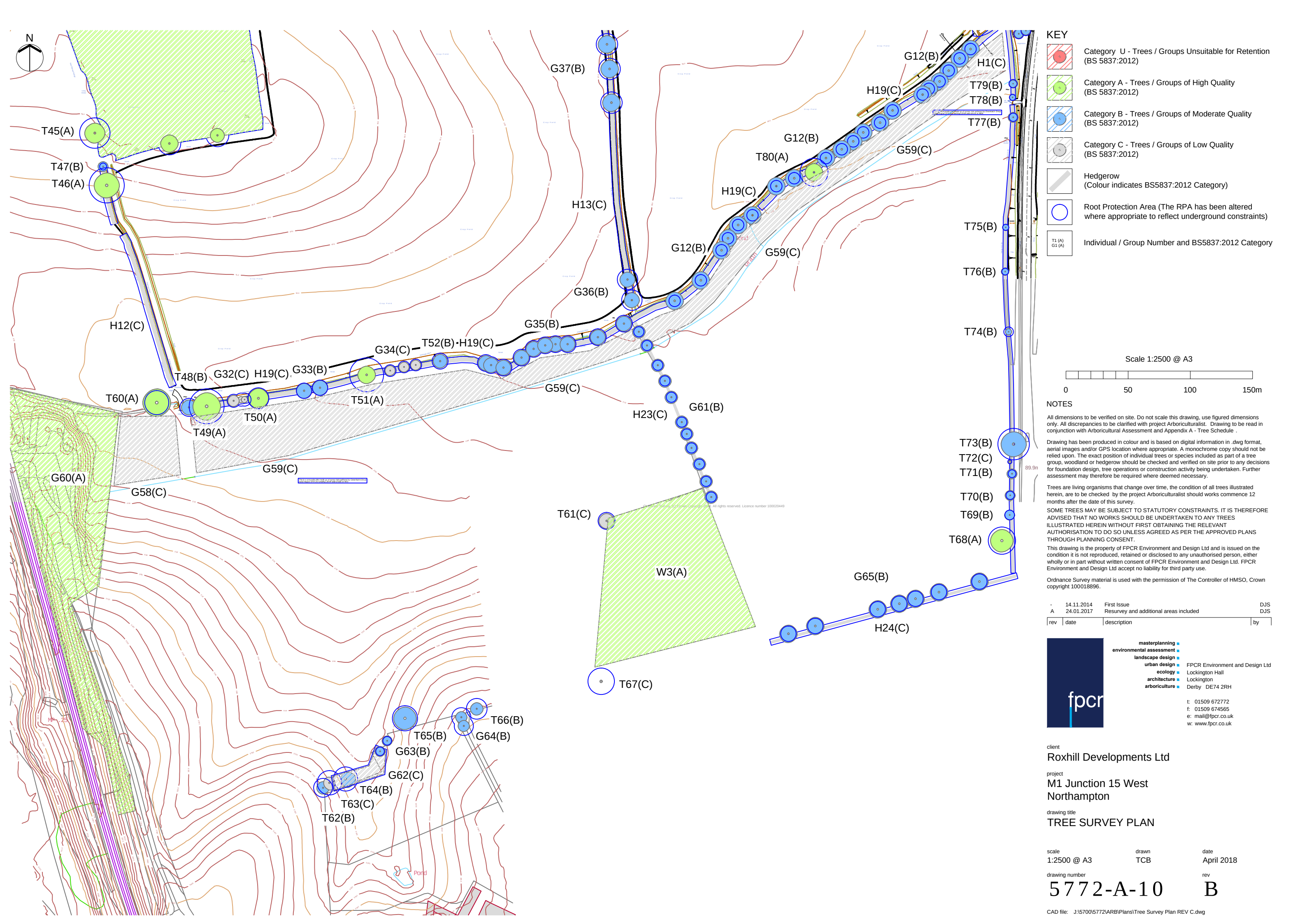
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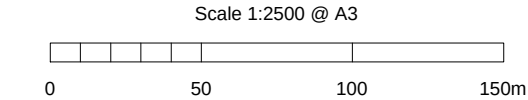
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KEY

- Category U - Trees / Groups Unsuitable for Retention (BS 5837:2012)
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- Category B - Trees / Groups of Moderate Quality (BS 5837:2012)
- Category C - Trees / Groups of Low Quality (BS 5837:2012)
- Hedgerow (Colour indicates BS5837:2012 Category)
- Root Protection Area (The RPA has been altered where appropriate to reflect underground constraints)
- Individual / Group Number and BS5837:2012 Category



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**M1 Junction 15 West
Northampton**

drawing title
TREE SURVEY PLAN

scale
1:2500 @ A3

drawn
TCB

date
April 2018

drawing number
5772-A-10

rev
B

CAD file: J:\5700\5772\ARB\Plans\Tree Survey Plan REV C.dwg



KEY

Tree/Group to be Retained

Tree/Group to be removed to facilitate the proposals

Category U - Unsuitable for retention on arboricultural grounds

Hedgerow Proposed to be Retained and Incorporated into the New Development

Hedgerow Proposed to be Removed to Facilitate the Development upon Approval of the Application

Root Protection Area
(Shown for retained trees only)

Individual / Group Number and BS Category

Scale 1:10000 @ A3

NOTES

0

250

500m

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-	14.11.2014	First Issue	DJS
A	24.01.2017	Resurvey and additional areas included	DJS
B	14.08.2017	Western field parcel included	DJS
C	28.09.2017	Updated Layout	DJS
D	16.04.2018	Updated Layout	TCB
E	08.05.2018	Updated roadside trees	TCB

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drawing title

TREE RETENTION PLAN PAGE LAYOUT

scale

1:10000 @ A3

drawn

TCB

date

May 2018

drawing number

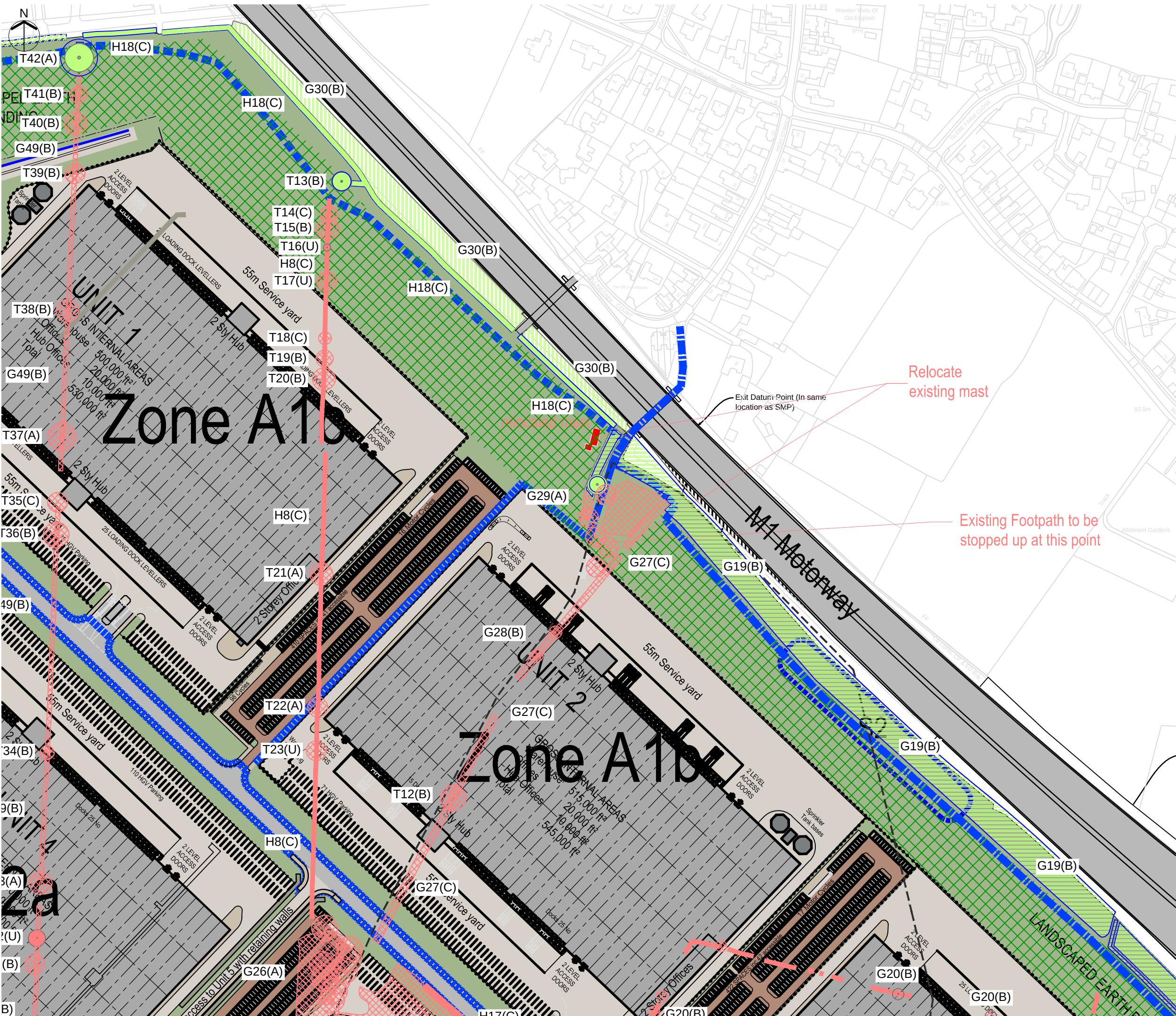
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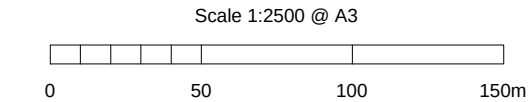
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drawing title
TREE RETENTION PLAN

scale
1:2500 @ A3

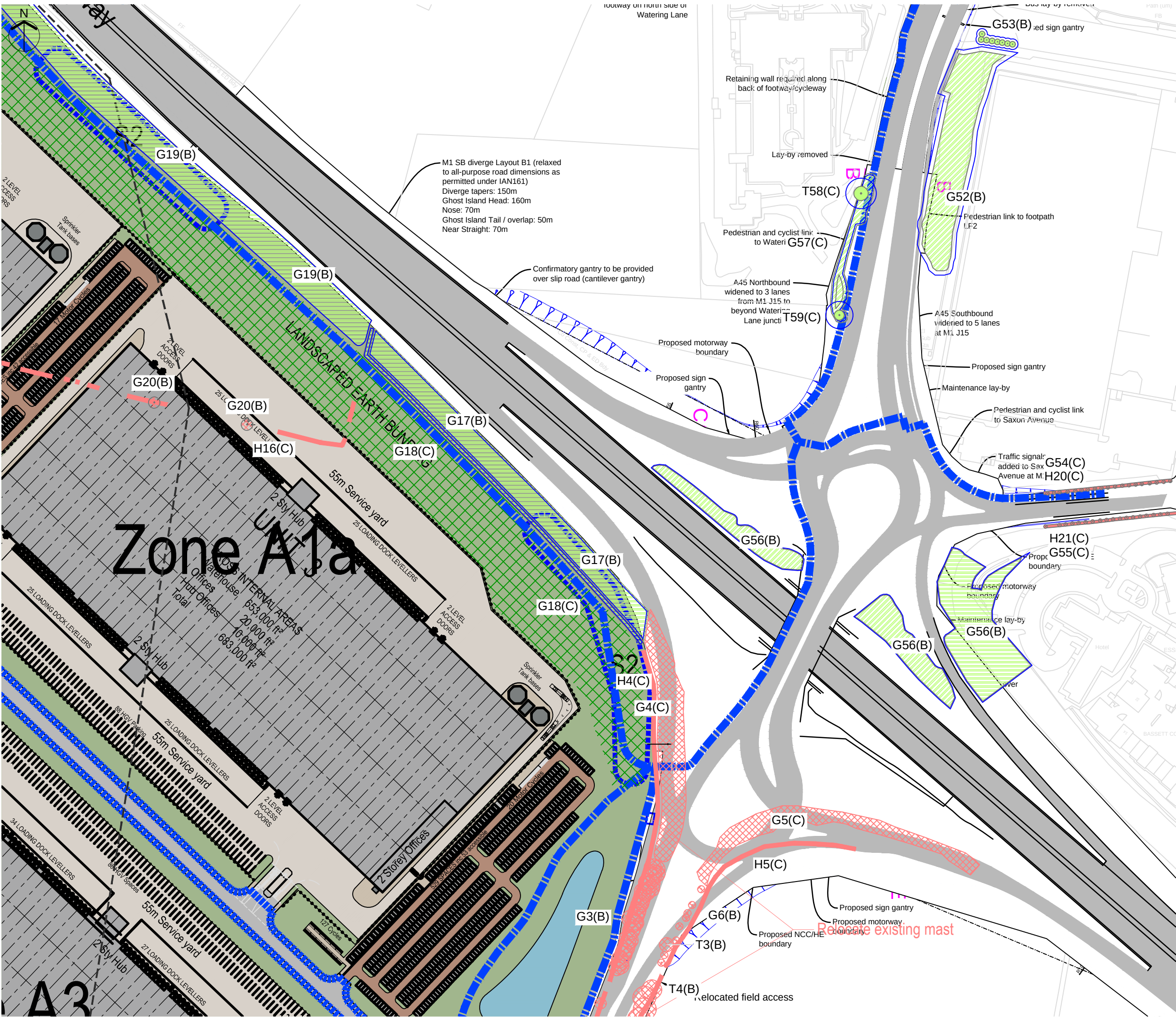
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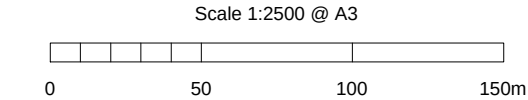
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TREE RETENTION PLAN

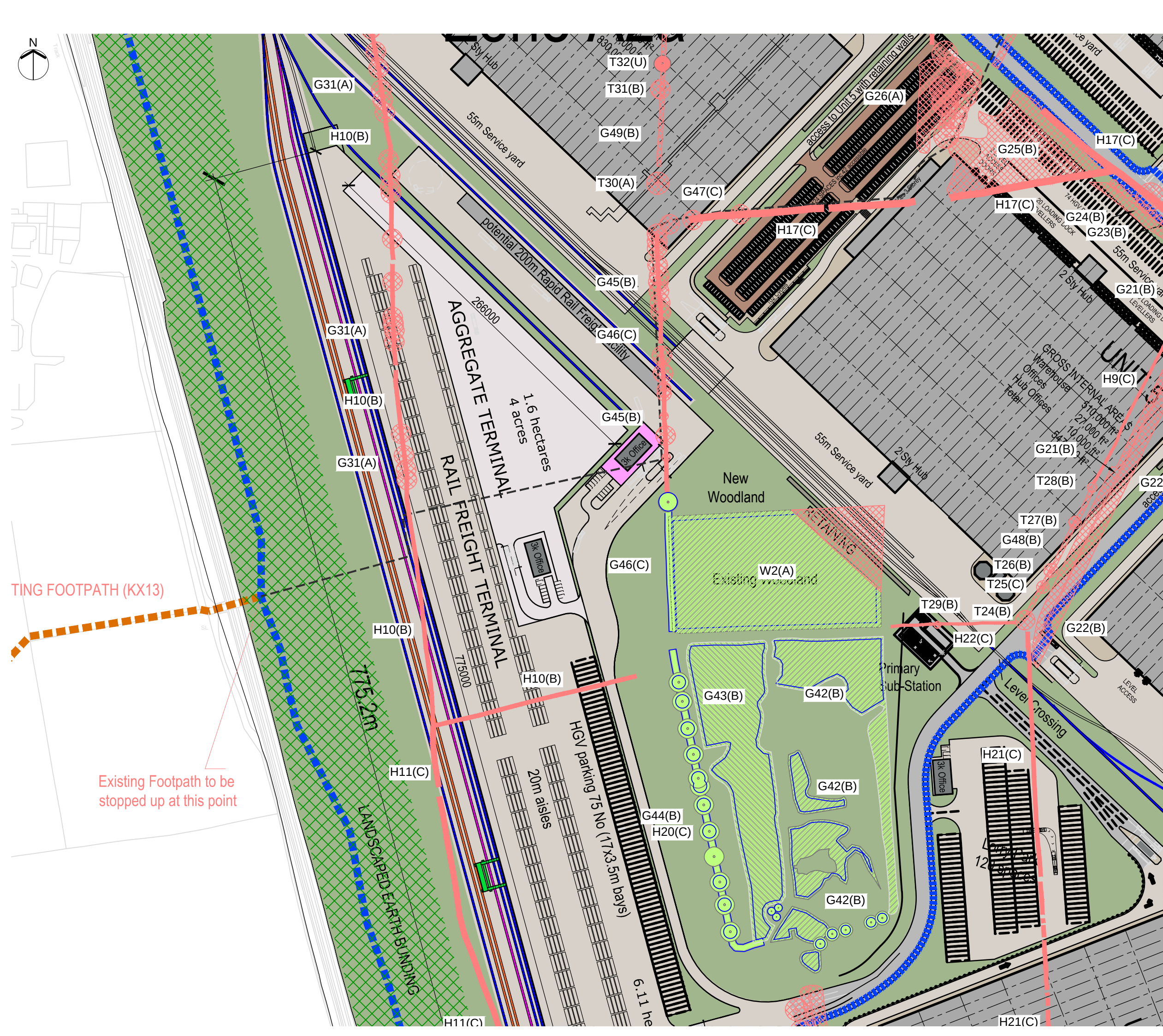
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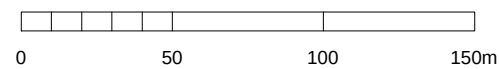
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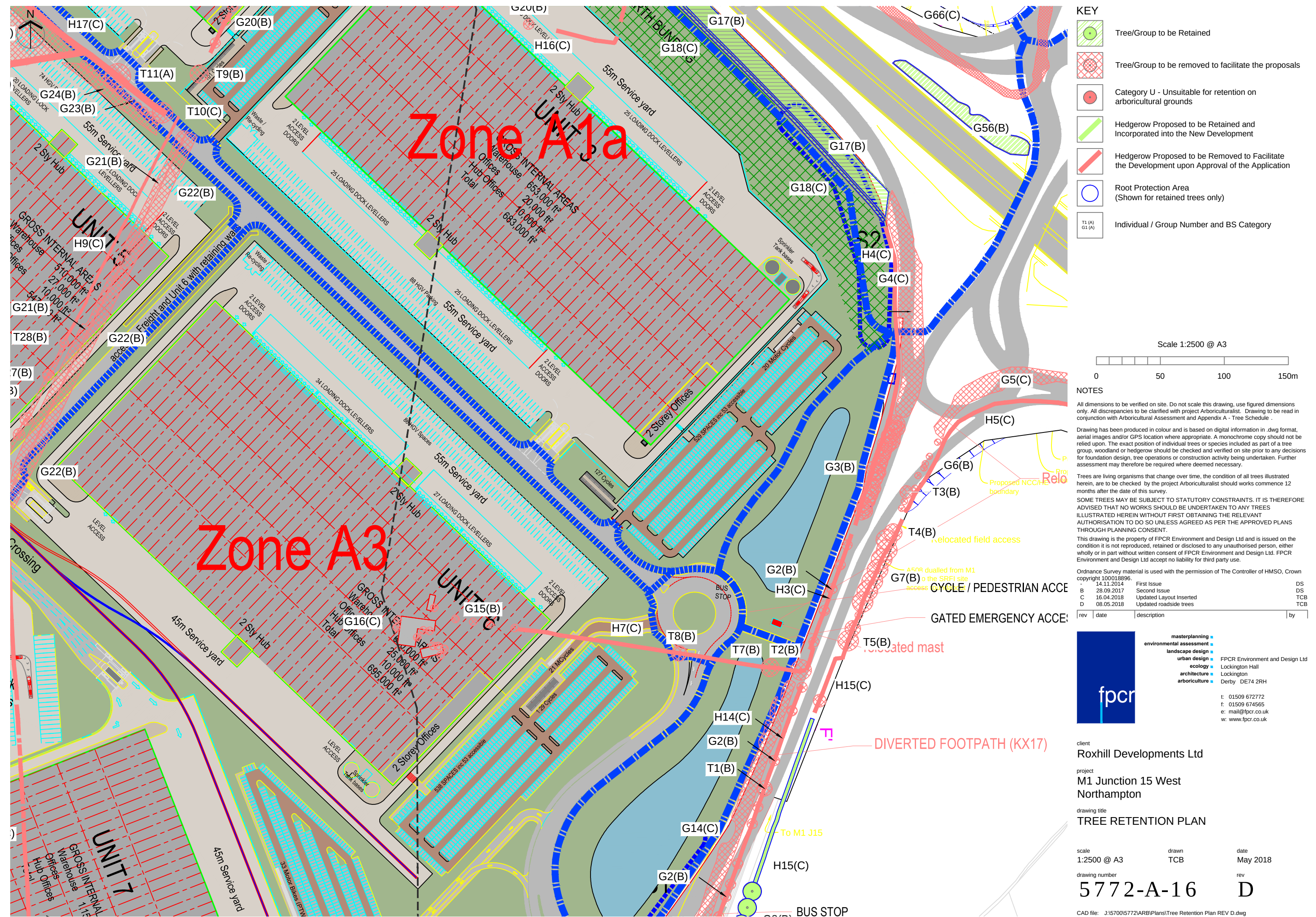
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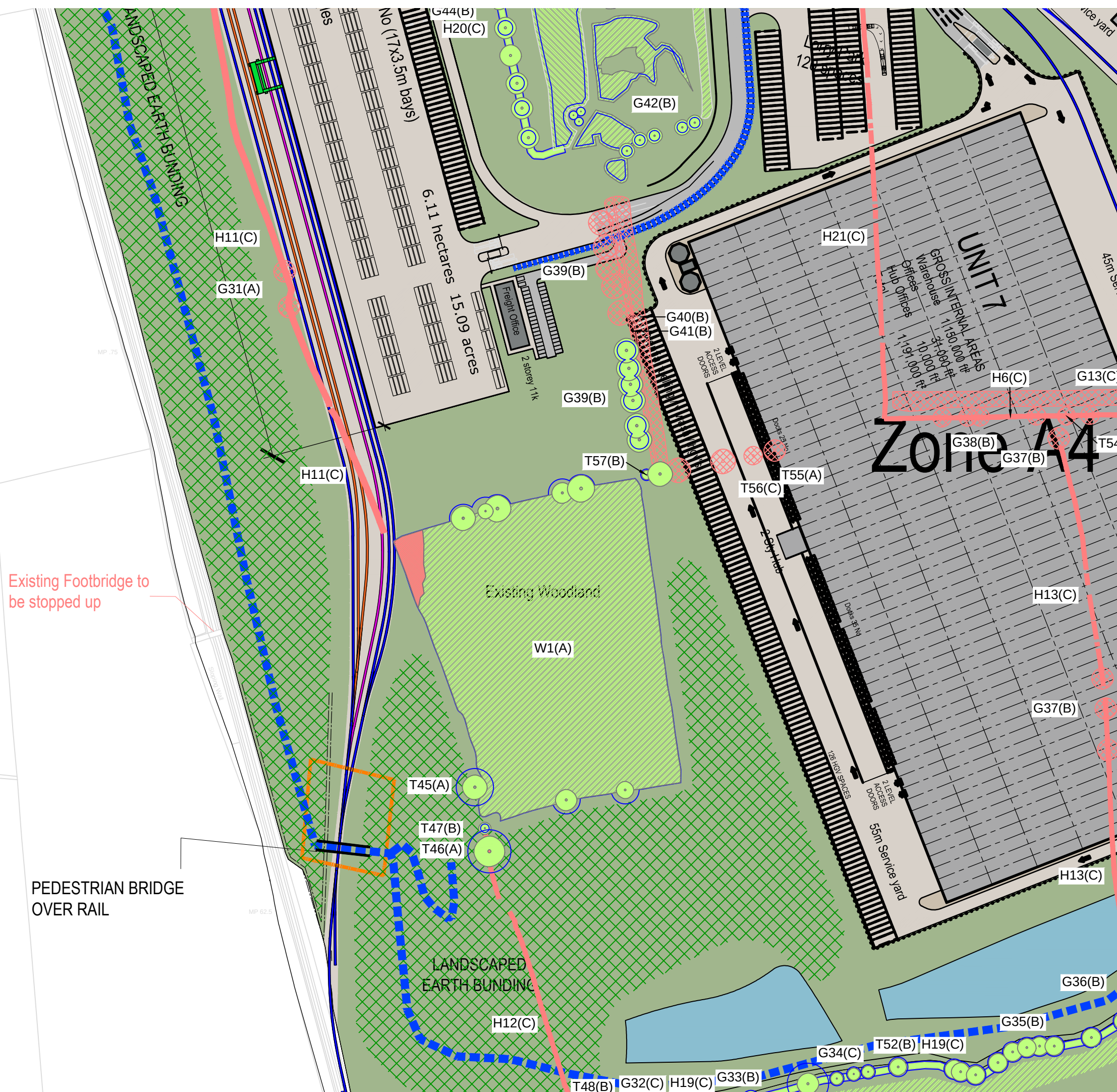
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KEY



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Category U - Unsuitable for retention on arboricultural grounds



Hedgerow Proposed to be Retained and Incorporated into the New Development



Hedgerow Proposed to be Removed to Facilitate the Development upon Approval of the Application

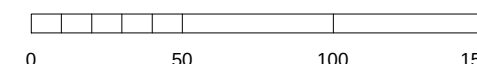


Root Protection Area
(Shown for retained trees only)



Individual / Group Number and BS Category

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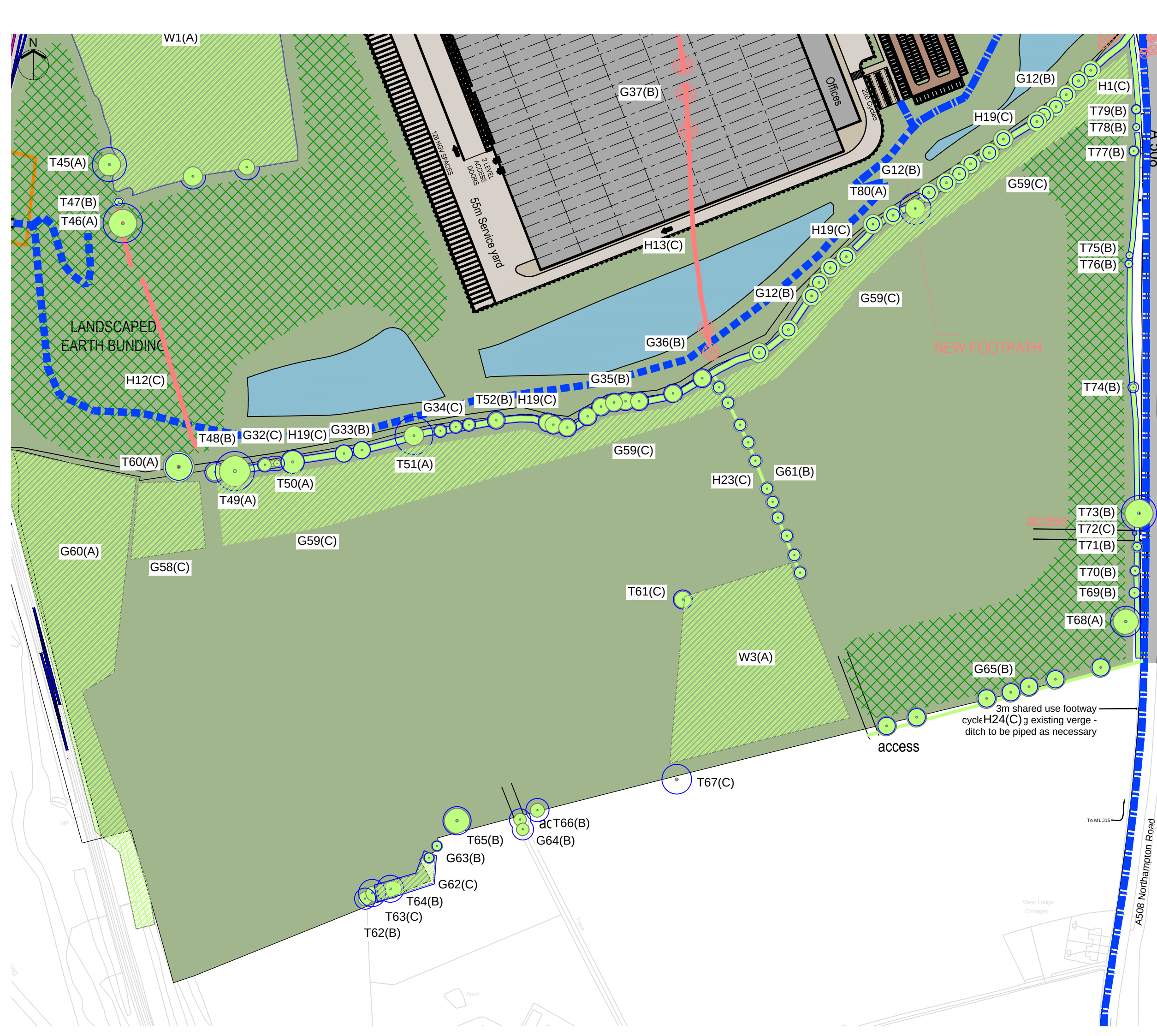
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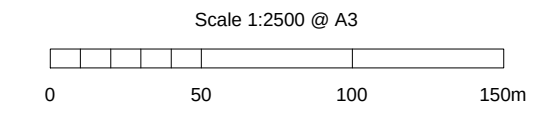
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Appendix A - Tree Schedule

Measurements	Age Class	Overall Condition	Root Protection Area (RPA)
Height - Measured using a digital laser clinometer (m)	YNG: Young trees up to ten years of age	G - Good: Trees with only a few minor defects and in good overall health needing little, if any attention	• The RPA Radius column provides the extent of an equivalent circle from the centre of the stem (m). • The RPA is calculated using the formulae described in paragraph 4.6.1 of British Standard 5837: 2012 and is indicative of the rooting area required for a tree to be successfully retained. Tree roots extend beyond the calculated RPA in many cases and where possible a greater distance should be protected. • Where veteran trees have been identified the RPA has been calculated in accordance with Natural England guidance i.e. 15x the stem diameter, uncapped.
Stem Dia. - Diameter measured (mm) in accordance with Annex C of the BS5837	SM: Semi-mature trees less than 1/3 life expectancy	F - Fair: Trees with minor rectifiable defects or in the early stages of stress from which it may recover	
Crown Radius - Measured using a digital laser clinometer radially from the main stem (m)	EM: Early mature trees 1/3 – 2/3 life expectancy	P - Poor: Trees with major structural and/or physiological defects such that it is unlikely the tree will recover in the long term	
Abbreviations est - Estimated stem diameter avg - Average stem diameter for multiple stems upto - Maximum stem diameter of a group	M: Mature trees over 2/3 life expectancy	D - Dead: This could also apply to trees in an advanced state of decline and unlikely to recover	
	OM: Over mature declining or moribund trees of low vigour	The BS category particular consideration has been given to the following • The health, vigour and condition of each tree • The presence of any structural defects in each tree/group and its future life expectancy • The size and form of each tree/group and its suitability within the context of a proposed development • The location of each tree relative to existing site features e.g. its screening value or landscape features • Age class and life expectancy	
	V: Veteran tree possessing certain attributes relating to veteran trees		

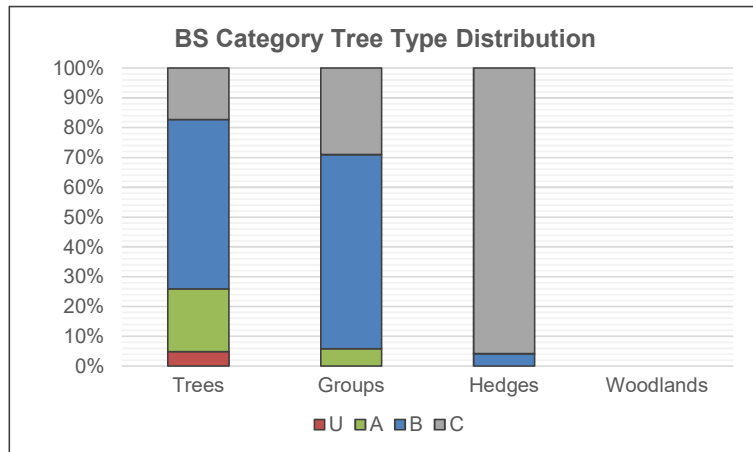
Structural Condition
The following is an example of considerations when inspecting structural condition: - The presence of fungal fruiting bodies around the base of the tree or on the stem, as they could possibly indicate the presence of possible internal decay - Soil cracks and any heaving of the soil around the base - Any abrupt bends in branches and limbs resulting from past pruning - Tight or weak 'V' shaped forks and co-dominant stems - Hazard beam formations and other such biomechanical related defects (as described by Claus Mattheck, Body Language of Trees HMSO Research for Amenity Trees No. 4 1994) - Cavities as a result of limb losses or past pruning - Broken branches or storm damage - Damage to roots - Basal, stem or branch / limb cavities - Crown die-back or abnormal foliage size and colour

Quality Assessment of BS Category
Category U - Trees 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.
Category A - Trees of high quality with an estimated remaining life expectancy of at least 40 years.
Category B - Trees of moderate quality with an estimated remaining life expectancy of at least 20 years.
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 150mm.
Sub-categories: (i) - Mainly arboricultural value (ii) - Mainly landscape value (iii) - Mainly cultural or conservation value

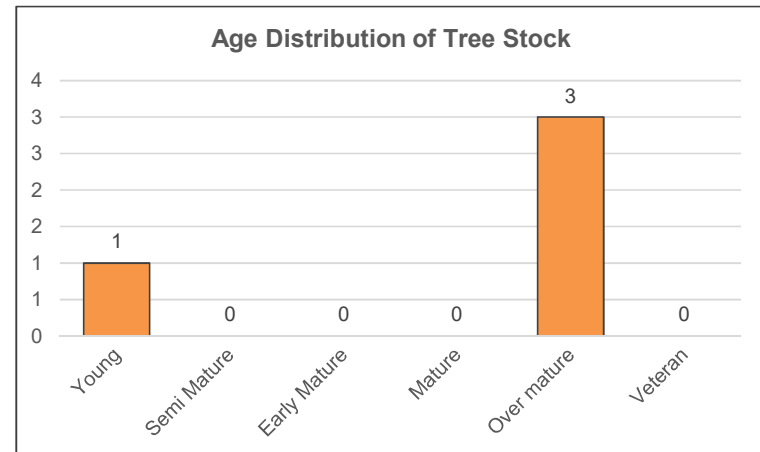
Appendix Summary

	Individual Trees	Totals	Tree Groups and Hedgerows	Totals
Category U	T16, T17, T23, T32	4		0
Category A	T11, T21, T22, T30, T33, T37, T42, T43, T45, T46, T49, T50, T51, T55, T60, T68, T80	17	G26, G29, G31, G60, W1, W2, W3	7
Category B	T1, T2, T3, T4, T5, T6, T7, T8, T9, T12, T13, T15, T19, T20, T24, T26, T27, T28, T29, T31, T34, T36, T38, T39, T40, T41, T44, T47, T48, T52, T53, T57, T62, T64, T65, T66, T69, T70, T71, T73, T74, T75, T76, T77, T78, T79	46	G1, G2, G3, G6, G7, G8, G9, G10, G12, G15, G17, G19, G20, G21, G22, G23, G24, G25, G28, G30, G33, G35, G36, G37, G38, G39, G40, G41, G42, G43, G44, G45, G48, G49, G50, G51, G52, G53, G56, G61, G63, G64, G65, G68, G69, H10	46
Category C	T10, T14, T18, T25, T35, T54, T56, T58, T59, T61, T63, T67, T72, T81	14	G4, G5, G11, G13, G14, G16, G18, G27, G32, G34, G46, G47, G54, G55, G57, G58, G59, G62, G66, G67, H1, H2, H3, H4, H5, H6, H7, H8, H9, H11, H12, H13, H14, H15, H16, H17, H18, H19, H20, H21, H22, H23, H24	43
Total		81	Total	96

BS Category Tree Type Distribution displays the proportion of trees assessed in each type to enable a better understanding of the category distribution.



Age Distribution of Tree Stock shows the number of trees in each age category across the tree stock allowing assessment of their longevity to be made.



Tree No	Species	Height	Stem Dia.	Crown Radius	Age Class	Overall Condition	Structural Condition	RPA	RPA Radius	BS5837 Cat
INDIVIDUAL TREES										
T1	Ash Fraxinus excelsior	15	670	6	M	F	Branch stubs evident No major defects were noted Pruning wounds noted	203	8.0	B (i)
T2	White Willow Salix alba	14	610	8	M	F	Branch stubs evident Broken branches evident Dense ivy cover on main stem	168	7.3	B (i)
T3	English Oak Quercus robur	10	380	5	SM	F	Branch stubs evident Broken branches evident Minor dead wood evident in the crown	65	4.6	B (i)
T4	Ash Fraxinus excelsior	14	420 370	7	M	F	Bark wounds noted Crossing and rubbing branches Minor dead wood evident in the crown	142	6.7	B (i)
T5	Ash Fraxinus excelsior	10	400	N - 5 S - 5 E - 5 W - 3	EM	F	Branch stubs evident Epicormic growth evident within the crown Minor dead wood evident in the crown	72	4.8	B (i)
T6	White Poplar Populus alba	14	560	7	EM	G	Dense undergrowth at the base Light ivy cover on main stem No major defects were noted	142	6.7	B (i)
T7	Ash Fraxinus excelsior	13	est 550	7	M	F	Bark wounds noted Branch stubs evident Dense undergrowth at the base Minor dead wood evident in the crown Fungal brackets to the east and north side of the stem "Inonotus hispidus Shaggy bracket"	137	6.6	B (i)
T8	White Poplar Populus alba	13	500	6	EM	G	Branch stubs evident Included bark union No major defects were noted	113	6.0	B (i)

Tree No	Species	Height	Stem Dia.	Crown Radius	Age Class	Overall Condition	Structural Condition	RPA	RPA Radius	BS5837 Cat
T9	White Poplar Populus alba	15	600	7	EM	G	Branch stubs evident Dense undergrowth at the base No major defects were noted	163	7.2	B (i)
T10	English Oak Quercus robur	18	920	8	OM	P,F	Broken branches evident Major dead wood evident in the crown Minor dead wood evident in the crown Pruning wounds noted Stage headed appearance Crown retrenchment observed	383	11.0	C (i)
T11	English Oak Quercus robur	20	1210	10	M	G	Branch stubs evident Major dead wood evident in the crown Minor dead wood evident in the crown Trial holes to the east of the stem by 5m "Grifola frondosa Hen of the woods"	662	14.5	A (i)
T12	English Oak Quercus robur	18	950	9	M	F	Dense ivy cover on main stem Dense undergrowth at the base Major dead wood evident in the crown Minor dead wood evident in the crown	408	11.4	B (i)
T13	Ash Fraxinus excelsior	13	550	7	EM	F	Broken branches evident Dense undergrowth at the base Low crown form Minor dead wood evident in the crown No major defects were noted	137	6.6	B (i)
T14	Ash Fraxinus excelsior	13	est 580	6	EM	P	Branch stubs evident Dense undergrowth at the base Major dead wood evident in the crown Minor dead wood evident in the crown Specimen in decline	152	7.0	C (i)
T15	Ash Fraxinus excelsior	15	520	8	M	F	Dense undergrowth at the base Possibly a former coppice stool	122	6.2	B (i)
T16	Ash Fraxinus excelsior	6	420	2.5	OM	P	Failed at 4m remaining growth from stem	N/A	N/A	U

Tree No	Species	Height	Stem Dia.	Crown Radius	Age Class	Overall Condition	Structural Condition	RPA	RPA Radius	BS5837 Cat
T17	Ash Fraxinus excelsior	12	520	7	M	P	Basal cavity observed Major dead wood evident in the crown Minor dead wood evident in the crown Woodpecker holes observed Extensive dieback of the crown Possibly a former coppice stool	N/A	N/A	U
T18	Crab Apple Malus sylvestris	8	390	4.5	M	F	Branch socket cavities observed Branch stubs evident Broken branches evident Dense undergrowth at the base Major dead wood evident in the crown Minor dead wood evident in the crown	69	4.7	C (i)
T19	Ash Fraxinus excelsior	9	480	6	EM	F	Branch stubs evident Major dead wood evident in the crown Minor dead wood evident in the crown	104	5.8	B (i)
T20	Ash Fraxinus excelsior	15	760	8	M	F	Basal cavity observed Dense ivy cover on main stem Dense undergrowth at the base Minor dead wood evident in the crown Possibly a former coppice stool	261	9.1	B (i)
T21	English Oak Quercus robur	16	740	8	M	G	Branch stubs evident Broken branches evident No major defects were noted Pruning wounds noted	248	8.9	A (i)
T22	English Oak Quercus robur	11	est 500	7	EM	F	Branch stubs evident No major defects were noted	113	6.0	A (i)
T23	Ash Fraxinus excelsior	13	est 720	7	M	P	Major dead wood evident in the crown Minor dead wood evident in the crown Woodpecker holes observed Major failed stem at 2m leaving large open wound	N/A	N/A	U
T24	English Oak Quercus robur	11	480	N - 4 S - 4 E - 7 W - 2	EM	F	Dense ivy cover on main stem Suppressed crown form Heavy lean to the east from tree which has since been felled	104	5.8	B (i)

Tree No	Species	Height	Stem Dia.	Crown Radius	Age Class	Overall Condition	Structural Condition	RPA	RPA Radius	BS5837 Cat
T25	Ash Fraxinus excelsior	12	330 300 320 290	4.5	M	F	Basal cavity observed Coppiced form Minor dead wood evident in the crown Multi stemmed from base	174	7.4	C (i)
T26	Ash Fraxinus excelsior	10	280 270 330	5	M	F	Bark wounds noted Branch socket cavities observed Branch stubs evident Dense undergrowth at the base	118	6.1	B (i)
T27	Ash Fraxinus excelsior	13	280 380	4.5	EM	F	Broken branches evident Minor dead wood evident in the crown Pruning wounds noted	101	5.7	B (i)
T28	Ash Fraxinus excelsior	11	200 300 310	3.5	EM	F	Basal cavity observed Dense undergrowth at the base Minor dead wood evident in the crown Multi stemmed from base Pruning wounds noted Bottle butt form	102	5.7	B (i)
T29	Lombardy Poplar Populus nigra 'Italica'	21	640	2.5	EM	F	No major defects were noted	185	7.7	B (i)
T30	English Oak Quercus robur	15	1050	8	M	G	Branch stubs evident Broken branches evident Epicormic growth evident within the crown Major dead wood evident in the crown Minor dead wood evident in the crown	499	12.6	A (i)
T31	English Oak Quercus robur	12	670	7	M	F	Dense ivy cover on main stem Dense undergrowth at the base Epicormic growth evident within the crown Major dead wood evident in the crown Minor dead wood evident in the crown	203	8.0	B (i)
T32	Ash Fraxinus excelsior	10	est 700	N - 2 S - 3.5 E - 6 W - 3	OM	P	Heartwood exposed Catastrophic failure of the stem at 3m Fungal brackets on the remaining stem "Inonotus hispidus Shaggy bracket"	N/A	N/A	U

Tree No	Species	Height	Stem Dia.	Crown Radius	Age Class	Overall Condition	Structural Condition	RPA	RPA Radius	BS5837 Cat
T33	English Oak Quercus robur	14	820	8	M	G	Minor dead wood evident in the crown No major defects were noted	304	9.8	A (i)
T34	English Oak Quercus robur	9	350	5	SM	G	Branch stubs evident Dense undergrowth at the base	55	4.2	B (i)
T35	Ash Fraxinus excelsior	14	800	7	M	F	Basal cavity observed Branch socket cavities observed Branch stubs evident Major dead wood evident in the crown Minor dead wood evident in the crown Pruning wounds noted	290	9.6	C (i)
T36	English Oak Quercus robur	18	910	9	M	G	Branch socket cavities observed Major dead wood evident in the crown loss of three limbs in past leaving open wounds	375	10.9	B (i)
T37	English Oak Quercus robur	19	930	10	M	G	Branch stubs evident Minor dead wood evident in the crown No major defects were noted Pruning wounds noted	391	11.2	A (i)
T38	White Poplar Populus alba	18	610	8	EM	G	Included bark union No major defects were noted	168	7.3	B (i)
T39	White Poplar Populus alba	16	460	7	EM	G	Bark wounds noted Included bark union No major defects were noted	96	5.5	B (i)
T40	Ash Fraxinus excelsior	16	470	8	M	F	Branch socket cavities observed Minor dead wood evident in the crown Pruning wounds noted	100	5.6	B (i)
T41	White Poplar Populus alba	13	440	6	EM	G	No major defects were noted	88	5.3	B (i)

Tree No	Species	Height	Stem Dia.	Crown Radius	Age Class	Overall Condition	Structural Condition	RPA	RPA Radius	BS5837 Cat
T42	English Oak Quercus robur	16	1080	10	M	G	Branch stubs evident Dense ivy cover on main stem Minor dead wood evident in the crown Pruning wounds noted	528	13.0	A (i)
T43	English Oak Quercus robur	13	950	9	M	G	Branch stubs evident Major dead wood evident in the crown No major defects were noted Pruning wounds noted	408	11.4	A (i)
T44	Ash Fraxinus excelsior	23	950	10	M	F	Branch socket cavities observed Branch stubs evident Broken branches evident Dense ivy cover on main stem Lateral lever arm observed Major dead wood evident in the crown	408	11.4	B (i)
T45	English Oak Quercus robur	17	1020	8	M	G	Basal cavity observed Major dead wood evident in the crown Minor dead wood evident in the crown No major defects were noted	471	12.2	A (i)
T46	English Oak Quercus robur	16	1180	10	M	F	Branch stubs evident Broken branches evident Major dead wood evident in the crown Minor dead wood evident in the crown Pruning wounds noted	630	14.2	A (i)
T47	Horse Chestnut Aesculus hippocastanum	7	230	4	SM	G	Pruning wounds noted Typical crown form	24	2.8	B (i)
T48	Hybrid Black Poplar Populus x canadensis	20	600	6	EM	G	Branch stubs evident No major defects were noted	163	7.2	B (i)
T49	English Oak Quercus robur	18	1170	11	M	G	Branch stubs evident Light ivy cover on main stem Minor dead wood evident in the crown No major defects were noted Situated offsite Positioned on opposite side of a ditch	619	14.0	A (i)

Tree No	Species	Height	Stem Dia.	Crown Radius	Age Class	Overall Condition	Structural Condition	RPA	RPA Radius	BS5837 Cat
T50	English Oak Quercus robur	17	700	8	M	G	Bark wounds noted Branch stubs evident Epicormic growth evident within the crown Light ivy cover on main stem Minor dead wood evident in the crown	222	8.4	A (i)
T51	English Oak Quercus robur	20	1130	7	M	G	Broken branches evident Dense ivy cover on main stem Major dead wood evident in the crown Minor dead wood evident in the crown	578	13.6	A (i)
T52	Ash Fraxinus excelsior	15	530	5.5	M	F	Branch stubs evident Broken branches evident Minor dead wood evident in the crown Pruning wounds noted	127	6.4	B (i)
T53	Ash Fraxinus excelsior	14	600	7	EM	G	Dense undergrowth at the base Light ivy cover on main stem No major defects were noted	163	7.2	B (i)
T54	White Poplar Populus alba	15	est 450	6	EM	F	Included bark union Roots to the south severed through excavation of ditch and infected with Armillaria mellea Honey fungus	92	5.4	C (i)
T55	English Oak Quercus robur	12	est 550	7	EM	G	Branch stubs evident Minor dead wood evident in the crown No major defects were noted	137	6.6	A (i)
T56	English Oak Quercus robur	10	380	6	SM	F	Dieback of the crown observed Major dead wood evident in the crown Minor dead wood evident in the crown Previously laid form	65	4.6	C (i)
T57	Common Lime Tilia x europaea	8	310	3	SM	F	Basal suckers present Tractor mounted flail damage evident	43	3.7	B (i)

Tree No	Species	Height	Stem Dia.	Crown Radius	Age Class	Overall Condition	Structural Condition	RPA	RPA Radius	BS5837 Cat
T58	Common Ash <i>Fraxinus excelsior</i>	14	890	5	M	F	Bark Wounds observed Secondary leader had recently failed at 5m above ground level leaving large wound at failure site - branch remains attached to the tree Branch socket cavities observed Broken branches evident Characteristic for the species Dense ivy cover throughout the crown and on the main stem Epicormic growth evident within the crown Limited future potential Low crown form	358	10.7	C (i)
T59	Lombardy Poplar <i>Populus nigra 'Italica'</i>	23	Est 800	3.5	M	F	Branch socket cavities observed Branch stubs evident Characteristic for the species Dense ivy cover on main stem Epicormic growth evident within the crown Situating offsite Unable to gain access	290	9.6	C (i)
T60	English Oak <i>Quercus robur</i>	18	810	11	M	G	Branch stubs evident Broken branches evident Dense ivy cover on main stem Major dead wood evident in the crown (>75mm) Minor dead wood evident in the crown (<75mm)	297	9.7	A (i)
T61	Ash <i>Fraxinus excelsior</i>	20	570	6	M	P	Branch socket cavities observed Major dead wood evident in the crown (>75mm) Minor dead wood evident in the crown (<75mm) Woodpecker holes observed <i>Inonotus hispidus</i> Shaggy bracket	147	6.8	C (i)
T62	Ash <i>Fraxinus excelsior</i>	18	620	5	M	F	Branch socket cavities observed Branch stubs evident Broken branches evident	174	7.4	B (i)
T63	Ash <i>Fraxinus excelsior</i>	22	820	N - 4 S - 6 E - 4 W - 4	M	F	Branch socket cavities observed Branch stubs evident Suspected internal cavities between 3m and 6m Possibly a basal cavity through removal of one stem in the past	304	9.8	C (i)

Tree No	Species	Height	Stem Dia.	Crown Radius	Age Class	Overall Condition	Structural Condition	RPA	RPA Radius	BS5837 Cat
T64	Ash Fraxinus excelsior	20	810	N - 4 S - 7 E - 8 W - 3	M	F	Branch socket cavities observed Stem leans to the east	297	9.7	B (i)
T65	Ash Fraxinus excelsior	28	838	9	M	F	Branch socket cavities observed Typical crown form	318	10.1	B (i)
T66	Ash Fraxinus excelsior	14	690	5	M	F	Dense ivy cover on main stem Typical crown form	215	8.3	B (i)
T67	Ash Fraxinus excelsior	3	890	1	M	P	Pollarded form(s) Inonotus hispidus Shaggy bracket	358	10.7	C (i)
T68	English Oak Quercus robur	15	910	9	M	G	Close cultivation of the soil Delaminating bark on main stem Major dead wood evident in the crown (>75mm) Minor dead wood evident in the crown (<75mm) Unidentifiable fungi at the base and up stem to 2m to the north	375	10.9	A (i)
T69	Hybrid Black Poplar Populus x canadensis	17	320	4	EM	G	No major defects were noted	46	3.8	B (i)
T70	Common Lime Tilia x europaea	7	280	4	SM	F	Broken branches evident Included bark union	35	3.4	B (i)
T71	Common Lime Tilia x europaea	7	260	4	SM	F	Broken branches evident Included bark union	31	3.1	B (i)
T72	Horse Chestnut Aesculus hippocastanum	5	140	1	Yng	F	Flail damage evident	9	1.7	C (i)

Tree No	Species	Height	Stem Dia.	Crown Radius	Age Class	Overall Condition	Structural Condition	RPA	RPA Radius	BS5837 Cat
T73	Ash Fraxinus excelsior	22	1050	10	M	F	Broken branches evident Crossing and rubbing branches Dense ivy cover on main stem	499	12.6	B (i)
T74	Pear Pyrus communis	7	320	2.5	EM	G	Flail damage evident	46	3.8	B (i)
T75	Common Lime Tilia x europaea	5	100 100 80 120 100	3	SM	F	Flail damage evident Included bark union Multi stemmed from base	23	2.7	B (i)
T76	Ash Fraxinus excelsior	6	210	2.5	SM	F	Broken branches evident No major defects were noted	20	2.5	B (i)
T77	White Poplar Populus alba	10	280	4	SM	G	No major defects were noted	35	3.4	B (i)
T78	Ash Fraxinus excelsior	7	210	2.5	SM	F	Bark wounds noted Branch socket cavities observed	20	2.5	B (i)
T79	Common Lime Tilia x europaea	7	280	3	SM	G	Branch stubs evident Included bark union	35	3.4	B (i)
T80	English Oak Quercus robur	24	940	7	M	G	Major dead wood evident in the crown (>75mm) Minor dead wood evident in the crown (<75mm)	400	11.3	A (i)
T81	Ash Fraxinus excelsior	10	est 350	4	EM	F	Base obscured Road side tree	55	4.2	C (i)

Group No	Species	Height	Stem Dia.	Crown Radius	Age Class	Overall Condition	Structural Condition	RPA	RPA Radius	BS5837 Cat
GROUPS OF TREES										
G1	Common Lime Tilia x europaea Hawthorn Crataegus monogyna Norway Maple Acer platanoides Sycamore Acer pseudoplatanus Crab Apple Malus sylvestris Turkey Oak Quercus cerris large leaved lime	8	upto 220 250	3.5	SM,EM	F	Dense undergrowth at the base Included bark union Pruning wounds noted	50	4.0	B (ii)
G2	Ash Fraxinus excelsior English Oak Quercus robur Horse Chestnut Aesculus hippocastanum Norway Maple Acer platanoides Sycamore Acer pseudoplatanus Wild Cherry Prunus avium Italian Alder Alnus cordata White Poplar Populus alba	12	upto 440	4	SM,EM	G	Dense ivy cover on main stem Dieback of the crown observed Pruning wounds noted	88	5.3	B (ii)
G3	Ash Fraxinus excelsior Horse Chestnut Aesculus hippocastanum English Elm Ulmus procera	12	410	6	EM	F	Branch socket cavities observed Branch stubs evident Included bark union Vertical split evident Snapped stems present Pseudomonas syringae pv. aesculi Bleeding canker of horse chestnut	76	4.9	B (ii)

Group No	Species	Height	Stem Dia.	Crown Radius	Age Class	Overall Condition	Structural Condition	RPA	RPA Radius	BS5837 Cat
G4	Field Maple Acer campestre Hawthorn Crataegus monogyna Hazel Corylus avellana	5	70	1.5	Yng	F	Characteristic for species	2	0.8	C (ii)
G5	Field Maple Acer campestre Hawthorn Crataegus monogyna Hazel Corylus avellana	5	70	1.5	Yng	F	Characteristic for species	2	0.8	C (ii)
G6	Lawson Cypress Chamaecyparis lawsoniana Lombardy Poplar Populus nigra 'Italica'	24	730	2.5	M	F	Broken branches evident Included bark union No major defects were noted Leyland cypress up to 14m height	241	8.8	B (ii)
G7	Norway Maple Acer platanoides	10	550	8	EM,M	G	Branch stubs evident No major defects were noted	137	6.6	B (ii)
G8	Scots Pine Pinus sylvestris Common Lime Tilia x europaea Hybrid Black Poplar Populus x canadensis Lombardy Poplar Populus nigra 'Italica'	18	600	7	M	F	Branch stubs evident Minor dead wood evident in the crown Typical crown form	163	7.2	B (ii)
G9	Common Lime Tilia x europaea Hybrid Black Poplar Populus x canadensis Norway Maple Acer platanoides	22	700	8.5	SM,M	G	Minor dead wood evident in the crown No major defects were noted Typical crown form	222	8.4	B (ii)

Group No	Species	Height	Stem Dia.	Crown Radius	Age Class	Overall Condition	Structural Condition	RPA	RPA Radius	BS5837 Cat
G10	Common Lime Tilia x europaea Norway Maple Acer platanoides Wild Cherry Prunus avium	5	250	3.5	SM	F	Dense ivy cover on main stem Dense undergrowth at the base Typical crown form positioned amongst the hedgerow	28	3.0	B (ii)
G11	Lawson Cypress Chamaecyparis lawsoniana Common Lime Tilia x europaea English Oak Quercus robur Field Maple Acer campestre Goat Willow Salix caprea Hybrid Black Poplar Populus x canadensis Apple Malus domestica Crab Apple Malus sylvestris English Elm Ulmus procera Goat Willow Salix caprea Hazel Corylus avellana	9	upto 210	3	Yng,SM	G	No major defects were noted recently planted group	20	2.5	C (ii)
G12	Hybrid Black Poplar Populus x canadensis White Willow Salix alba	19	est 380	7	EM,M	G	Branch stubs evident Broken branches evident Minor dead wood evident in the crown No major defects were noted Situated offsite Typical crown form	65	4.6	B (ii)

Group No	Species	Height	Stem Dia.	Crown Radius	Age Class	Overall Condition	Structural Condition	RPA	RPA Radius	BS5837 Cat
G13	Lawson Cypress Chamaecyparis lawsoniana Norway Spruce Picea abies Ash Fraxinus excelsior Common Lime Tilia x europaea English Oak Quercus robur Field Maple Acer campestre Crab Apple Malus sylvestris Privet Ligustrum ovalifolium White Poplar Populus alba Dogwood Cornus sanguinea	3	70	1.5	Yng	F	recently planted trees of limited proportions	2	0.8	C (ii)

Group No	Species	Height	Stem Dia.	Crown Radius	Age Class	Overall Condition	Structural Condition	RPA	RPA Radius	BS5837 Cat
G14	Lawson Cypress Chamaecyparis lawsoniana Common Lime Tilia x europaea English Oak Quercus robur Field Maple Acer campestre Goat Willow Salix caprea Hybrid Black Poplar Populus x canadensis Apple Malus domestica Crab Apple Malus sylvestris English Elm Ulmus procera Goat Willow Salix caprea Hazel Corylus avellana	9	upto 210	3	Yng,SM	G	No major defects were noted recently planted group	20	2.5	C (ii)
G15	Horse Chestnut Aesculus hippocastanum	6	upto 300	3	SM	F	Crossing and rubbing branches Included bark union Minor dead wood evident in the crown No major defects were noted	41	3.6	B (ii)
G16	Elder Sambucus nigra	5	8x 80	3	SM	F	Self seeded group of trees	23	2.7	C (ii)
G17	Austrian Pine Pinus nigra ssp. Nigra Leyland Cypress Cupressocyparis leylandii Norway Spruce Picea abies Field Maple Acer campestre	15	upto 400	3.5	EM,M	G	Situated offsite Typical crown form Triple row of trees Dead stems amongst the group	72	4.8	B (ii)

Group No	Species	Height	Stem Dia.	Crown Radius	Age Class	Overall Condition	Structural Condition	RPA	RPA Radius	BS5837 Cat
G18	Elder Sambucus nigra Field Maple Acer campestre Hawthorn Crataegus monogyna	4	50 50 30 30	1.5	SM	F	Typical crown form Managed laterally outgrown vertically	3	1.0	C (ii)
G19	Lawson Cypress Chamaecyparis lawsoniana English Oak Quercus robur Field Maple Acer campestre Goat Willow Salix caprea Hybrid Black Poplar Populus x canadensis Apple Malus domestica Aspen Populus tremula Goat Willow Salix caprea Hazel Corylus avellana	7	upto 180	3	SM	F	Dense undergrowth at the base Minor dead wood evident in the crown Situated offsite	15	2.2	B (ii)
G20	Ash Fraxinus excelsior Horse Chestnut Aesculus hippocastanum Sycamore Acer pseudoplatanus Italian Alder Alnus cordata	12	480	6	EM,M	F	Included bark union Minor dead wood evident in the crown Multi stemmed from base Pruning wounds noted Single stem forms	104	5.8	B (ii)
G21	Hybrid Black Poplar Populus x canadensis	12	320	4	SM	G	Low crown form No major defects were noted	46	3.8	B (ii)

Group No	Species	Height	Stem Dia.	Crown Radius	Age Class	Overall Condition	Structural Condition	RPA	RPA Radius	BS5837 Cat
G22	Leyland Cypress Cupressocyparis leylandii Ash Fraxinus excelsior English Oak Quercus robur Field Maple Acer campestre Goat Willow Salix caprea Crab Apple Malus sylvestris Goat Willow Salix caprea Hazel Corylus avellana	9	120	3	SM	G	Interlocking crowns No major defects were noted Typical crown form Buffer planted group	7	1.4	B (ii)
G23	Hybrid Black Poplar Populus x canadensis	12	200	3	SM	G	Low crown form No major defects were noted	18	2.4	B (ii)
G24	Leyland Cypress Cupressocyparis leylandii Ash Fraxinus excelsior Elder Sambucus nigra English Oak Quercus robur Field Maple Acer campestre	9	120	3	SM	G	Interlocking crowns No major defects were noted Typical crown form Buffer planted group	7	1.4	B (ii)

Group No	Species	Height	Stem Dia.	Crown Radius	Age Class	Overall Condition	Structural Condition	RPA	RPA Radius	BS5837 Cat
G25	Austrian Pine Pinus nigra ssp. Nigra Common Larch Larix decidua Leyland Cypress Cupressocyparis leylandii Norway Spruce Picea abies Elder Sambucus nigra English Oak Quercus robur	23	410	5	EM,M	G	Branch stubs evident Broken branches evident Crown had been heavily reduced Interlocking crowns	76	4.9	B (ii)
G26	Scots Pine Pinus sylvestris Ash Fraxinus excelsior Blackthorn Prunus spinosa Common Lime Tilia x europaea English Oak Quercus robur Norway Maple Acer platanoides Italian Alder Alnus cordata London Plane Platanus x hispanica	19	750	9	EM,M	G	Branch stubs evident Minor dead wood evident in the crown No major defects were noted Typical crown form	254	9.0	A (ii)
G27	Ash Fraxinus excelsior Hawthorn Crataegus monogyna Norway Maple Acer platanoides Sycamore Acer pseudoplatanus English Elm Ulmus procera	7	upto 200	2.5	SM,EM	F	Dead elms noted Interlocking crowns Light ivy cover on main stem Minor dead wood evident in the crown Managed laterally outgrown vertically	18	2.4	C (ii)

Group No	Species	Height	Stem Dia.	Crown Radius	Age Class	Overall Condition	Structural Condition	RPA	RPA Radius	BS5837 Cat
G28	White Poplar Populus alba	10	400	4.5	SM	G	Included bark union No major defects were noted Typical crown form	72	4.8	B (ii)
G29	Common Lime Tilia x europaea Elder Sambucus nigra Field Maple Acer campestre Horse Chestnut Aesculus hippocastanum Norway Maple Acer platanoides Wych Elm Ulmus glabra	15	470	7	EM,M	G	No major defects were noted Overhead cables pass through the group Pseudomonas syringae pv. aesculi Bleeding canker of horse chestnut Cameraria ohridella Horse chestnut leaf miner	100	5.6	A (ii)
G30	Ash Fraxinus excelsior Norway Maple Acer platanoides Sycamore Acer pseudoplatanus	12	est 320	4	SM,EM	F,G	No major defects were noted Situated offsite	46	3.8	B (ii)
G31	Ash Fraxinus excelsior English Oak Quercus robur Sycamore Acer pseudoplatanus	13	upto 750	7	M	G	Bark wounds noted Basal cavity observed Branch socket cavities observed Branch stubs evident Broken branches evident Close cultivation of the soil Coppiced form Dense undergrowth at the base Major dead wood evident in the crown Minor dead wood evident in the crown Multi stemmed from base Single stem forms Some category u specimen amongst the group Inonotus hispidus Shaggy bracket	254	9.0	A (ii)

Group No	Species	Height	Stem Dia.	Crown Radius	Age Class	Overall Condition	Structural Condition	RPA	RPA Radius	BS5837 Cat
G32	Ash Fraxinus excelsior	12	upto 430	4.5	SM,EM	P,F	Dieback of the crown observed Light ivy cover on main stem Major dead wood evident in the crown Declining and dead forms amongst the group	84	5.2	C (ii)
G33	Hybrid Black Poplar Populus x canadensis	18	520	6	SM,EM	G	Flail damage to the stem and lower growth	122	6.2	B (ii)
G34	Field Maple Acer campestre	9	390	4	EM	F	Branch socket cavities observed Branch stubs evident Minor dead wood evident in the crown Pruning wounds noted Tractor mounted flail damage evident	69	4.7	C (ii)
G35	Ash Fraxinus excelsior English Oak Quercus robur Field Maple Acer campestre Hybrid Black Poplar Populus x canadensis	17	560	6	EM,M	F,G	Branch stubs evident Broken branches evident Dense ivy cover on main stem Light ivy cover on main stem Pruning wounds noted Situating offsite Inonotus hispidus Shaggy bracket	142	6.7	B (ii)
G36	Ash Fraxinus excelsior English Oak Quercus robur	14	680	6	SM,M	F,G	Branch socket cavities observed Branch stubs evident Minor dead wood evident in the crown Tractor mounted flail damage evident	209	8.2	B (ii)
G37	Hybrid Black Poplar Populus x canadensis White Poplar Populus alba	19	720	7	EM,M	G	Branch stubs evident Broken branches evident Tractor mounted flail damage evident	235	8.6	B (ii)

Group No	Species	Height	Stem Dia.	Crown Radius	Age Class	Overall Condition	Structural Condition	RPA	RPA Radius	BS5837 Cat
G38	Ash Fraxinus excelsior English Oak Quercus robur Field Maple Acer campestre Sycamore Acer pseudoplatanus Crab Apple Malus sylvestris White Poplar Populus alba	14	280	6	SM	F	Included bark union Minor dead wood evident in the crown Typical crown form	35	3.4	B (ii)
G39	Ash Fraxinus excelsior Hybrid Black Poplar Populus x canadensis	19	510	8	M	G	No major defects were noted Typical crown form Inonotus hispidus Shaggy bracket	118	6.1	B (ii)
G40	Leyland Cypress Cupressocyparis leylandii Ash Fraxinus excelsior English Oak Quercus robur Field Maple Acer campestre Goat Willow Salix caprea Crab Apple Malus sylvestris Goat Willow Salix caprea Hazel Corylus avellana	9	upto 120	3	SM	G	Interlocking crowns No major defects were noted Typical crown form Buffer planted group	7	1.4	B (ii)
G41	Hybrid Black Poplar Populus x canadensis	11	200	2.5	SM	G	Low crown form No major defects were noted	18	2.4	B (ii)

Group No	Species	Height	Stem Dia.	Crown Radius	Age Class	Overall Condition	Structural Condition	RPA	RPA Radius	BS5837 Cat
G42	Leyland Cypress Cupressocyparis leylandii Ash Fraxinus excelsior Crack Willow Salix fragilis English Oak Quercus robur Field Maple Acer campestre Hybrid Black Poplar Populus x canadensis Silver Birch Betula pendula Wild Cherry Prunus avium Alder Alnus glutinosa Hazel Corylus avellana	15	280	5	SM,EM	F,G	No major defects were noted Typical crown form Felled specimens amongst the group	35	3.4	B (ii)

Group No	Species	Height	Stem Dia.	Crown Radius	Age Class	Overall Condition	Structural Condition	RPA	RPA Radius	BS5837 Cat
G43	Leyland Cypress Cupressocyparis leylandii Scots Pine Pinus sylvestris Yew Taxus baccata Ash Fraxinus excelsior Beech Fagus sylvatica English Oak Quercus robur Field Maple Acer campestre Goat Willow Salix caprea Hybrid Black Poplar Populus x canadensis Silver Birch Betula pendula Goat Willow Salix caprea Hazel Corylus avellana	18	230	5	SM,EM	G	Branch stubs evident Etiolated form Pruning wounds noted	24	2.8	B (ii)
G44	Hybrid Black Poplar Populus x canadensis	18	upto 400	7	EM	G	Included bark union No major defects were noted	72	4.8	B (ii)
G45	English Oak Quercus robur Hybrid Black Poplar Populus x canadensis	20	upto 550	7	EM	G	Included bark union No major defects were noted	137	6.6	B (ii)

Group No	Species	Height	Stem Dia.	Crown Radius	Age Class	Overall Condition	Structural Condition	RPA	RPA Radius	BS5837 Cat
G46	Ash Fraxinus excelsior Blackthorn Prunus spinosa English Oak Quercus robur Hawthorn Crataegus monogyna Crab Apple Malus sylvestris	4	upto 210	1.5	M	F	Interlocking crowns Tractor mounted flail damage evident Maintained laterally outgrown vertically	20	2.5	C (ii)
G47	Ash Fraxinus excelsior	17	850	7	M	P,F	Branch socket cavities observed Branch stubs evident Broken branches evident Major dead wood evident in the crown Minor dead wood evident in the crown Inonotus hispidus Shaggy bracket	327	10.2	C (ii)
G48	Elder Sambucus nigra Hawthorn Crataegus monogyna Crab Apple Malus sylvestris English Elm Ulmus procera	7	110 80 50	1.5	M	F	Dense ivy cover on main stem Maintained laterally outgrown vertically	10	1.7	B (ii)

Group No	Species	Height	Stem Dia.	Crown Radius	Age Class	Overall Condition	Structural Condition	RPA	RPA Radius	BS5837 Cat
G49	Ash Fraxinus excelsior Blackthorn Prunus spinosa Field Maple Acer campestre Hawthorn Crataegus monogyna Horse Chestnut Aesculus hippocastanum Sycamore Acer pseudoplatanus Crab Apple Malus sylvestris Italian Alder Alnus cordata	8	200	1.5	M	F	Basal cavity observed Broken branches evident Coppiced form Gaps present in hedgerow Maintained laterally outgrown vertically Laid hedgerow previously	18	2.4	B (ii), B (iii)
G50	Ash Fraxinus excelsior Blackthorn Prunus spinosa Hawthorn Crataegus monogyna	11	120 80 60	2	M	G	Coppiced form Maintained laterally outgrown vertically Laid hedgerow previously	11	1.9	B (ii)
G51	Ash Fraxinus excelsior	12	230 230 180 280	4	M	F	Branch stubs evident Minor dead wood evident in the crown Previously laid form	98	5.6	B (ii)

Group No	Species	Height	Stem Dia.	Crown Radius	Age Class	Overall Condition	Structural Condition	RPA	RPA Radius	BS5837 Cat
G52	Common Ash Fraxinus excelsior English Oak Quercus robur Field Maple Acer campestre Hawthorn Crataegus monogyna Horse Chestnut Aesculus hippocastanum Lombardy Poplar Populus nigra 'Italica' Norway Maple Drummondii Acer platanoides 'Drummondii' Lawson Cypress Chamaecyparis lawsoniana White Poplar Populus alba	14	upto 510	3	EM,M	F	Characteristic for the species Low crown forms Minor dead wood evident in the crown Multi leadered form No major defects were noted Suppressed crown forms present amongst the group Lawson cypress form outer edge larger trees Relatively unmanaged Dead elders amongst the group	118	6.1	B (ii)
G53	Lawson Cypress Chamaecyparis lawsoniana	10	avg 320	2	M	G	Characteristic for the species Low crown forms Multi leadered form Even crown forms Ivy cover on the main stems 8 no. trees in total	46	3.8	B (ii)
G54	Scarlet Oak Quercus coccinea	5	avg 110	1	SM	F	No major defects	5	1.3	C (ii)
G55	Scarlet Oak Quercus coccinea	5	avg 130	1	SM	G	No major defects	8	1.6	C (ii)

Group No	Species	Height	Stem Dia.	Crown Radius	Age Class	Overall Condition	Structural Condition	RPA	RPA Radius	BS5837 Cat
G56	Crack Willow Salix fragilis English Oak Quercus robur Field Maple Acer campestre Hawthorn Crataegus monogyna Horse Chestnut Aesculus hippocastanum Lombardy Poplar Populus nigra 'Italica' Norway Maple Drummondii Acer platanoides 'Drummondii' Lawson Cypress Chamaecyparis lawsoniana White Poplar Populus alba Scots Pine Pinus sylvestris	12	est 300	3	EM,M	F / G	Characteristic for the species Low crown form Multi leadered form Situating offsite Suppressed crown form Unable to gain access Lawson cypress form outer edge larger trees Relatively unmanaged Dead elders amongst the group Dense landscape buffer	41	3.6	B (ii)
G57	Ash Fraxinus excelsior Blackthorn Prunus spinosa Elder Sambucus nigra Hawthorn Crataegus monogyna Hazel Corylus avellana	10	upto 180 200 210	3.5	M	F	Characteristic for the species Dense undergrowth at the base Interlocking crowns Low crown forms Multi leadered form Mulit stemmed from the base No major defects were noed Unmaintained hedgerow	53	4.1	C (ii)

Group No	Species	Height	Stem Dia.	Crown Radius	Age Class	Overall Condition	Structural Condition	RPA	RPA Radius	BS5837 Cat
G58	Ash Fraxinus excelsior Crack Willow Salix fragilis English Oak Quercus robur Field Maple Acer campestre Goat Willow Salix caprea Crab Apple Malus sylvestris Hazel Corylus avellana Lombardy Poplar Populus nigra 'Italica' Leyland Cypress Cupressocyparis leylandii Norway Spruce Picea abies Dogwood Cornus sanguinea	6	upto 110	1.5	Yng	F / G	Juvenile trees of limited value	5	1.3	C (ii)

Group No	Species	Height	Stem Dia.	Crown Radius	Age Class	Overall Condition	Structural Condition	RPA	RPA Radius	BS5837 Cat
G59	Ash Fraxinus excelsior Crack Willow Salix fragilis English Oak Quercus robur Field Maple Acer campestre Goat Willow Salix caprea Silver Birch Betula pendula Crab Apple Malus sylvestris Hazel Corylus avellana Lombardy Poplar Populus nigra 'Italica' White Poplar Populus alba Leyland Cypress Cupressocyparis leylandii Norway Spruce Picea abies Dogwood Cornus sanguinea	6	upto 110	1.5	Yng	F / G	Juvenile trees of limited value	5	1.3	C (ii)
G60	Ash Fraxinus excelsior English Oak Quercus robur Goat Willow Salix caprea Sweet Chestnut Castanea sativa	18	upto 730	8	SM / EM / M	F	Branch stubs evident Broken branches evident Situated offsite Partially positioned on railway embankment	241	8.8	A (ii), A (iii)
G61	Hybrid Black Poplar Populus x canadensis	19	upto 340	5	EM	G	No major defects were noted	52	4.1	B (ii)

Group No	Species	Height	Stem Dia.	Crown Radius	Age Class	Overall Condition	Structural Condition	RPA	RPA Radius	BS5837 Cat
G62	Ash Fraxinus excelsior Hawthorn Crataegus monogyna Crab Apple Malus sylvestris	5	upto 200	1.5	SM / EM	F	Old laid forms Outgrown hedgerow	18	2.4	C (i)
G63	Ash Fraxinus excelsior	8	280	4	SM	G	Broken branches evident Spoilt the base of the stems	35	3.4	B (ii)
G64	Common Larch Larix decidua	9	640	4.5	EM	F	Dense ivy cover on main stem Minor dead wood evident in the crown (<75mm)	185	7.7	B (ii)
G65	Hybrid Black Poplar Populus x canadensis	18	upto 520	7	EM	G	No major defects were noted Typical crown form	122	6.2	B (ii)
G66	Blackthorn Prunus spinosa Elder Sambucus nigra Hawthorn Crataegus monogyna	3	est 6x60	2	EM	F	Roadside buffer and hedgerow	10	1.8	C (ii)
G67	Hawthorn Crataegus monogyna	4	200	2	M	F	Outgrown hedgerow	18	2.4	C (ii)
G68	Lombardy Poplar Populus nigra 'Italica'	18	est 600	3	M	F	Offsite trees Unable to gain access	163	7.2	B (ii)

Group No	Species	Height	Stem Dia.	Crown Radius	Age Class	Overall Condition	Structural Condition	RPA	RPA Radius	BS5837 Cat
G69	Beech Fagus sylvatica Blackthorn Prunus spinosa Ash Fraxinus excelsior Common Walnut Juglans regia False Acacia Robinia pseudoacacia Hawthorn Crataegus monogyna Holly Ilex aquifolium Lombardy Poplar Populus nigra 'Italica' Leyland Cypress Cupressocyparis leylandii Scots Pine Pinus sylvestris	upto 18	est 600	5	EM-M	F	Offsite trees Unable to gain access	163	7.2	B (ii)

Hedge No	Species	Height	Stem Dia.	Crown Radius	Age Class	Overall Condition	Structural Condition	RPA	RPA Radius	BS5837 Cat
HEDGEROWS										
H1	Hawthorn Crataegus monogyna	3.5	150	1.5	EM	F	Typical crown form Hedgerow laid in the past	10	1.8	C (ii)
H2	Hawthorn Crataegus monogyna English Elm Ulmus procera	3	120	1.5	EM	F	Typical crown form Hedgerow laid in the past	7	1.4	C (ii)
H3	Hawthorn Crataegus monogyna English Elm Ulmus procera	3.5	50 60 50	1.5	SM	F	Maintained hedgerow	4	1.1	C (ii)
H4	Ash Fraxinus excelsior Common Lime Tilia x europaea Hawthorn Crataegus monogyna	2	50 60 50	1.5	SM	F	Maintained hedgerow	4	1.1	C (ii)
H5	Blackthorn Prunus spinosa Field Maple Acer campestre Hawthorn Crataegus monogyna	3.5	80 60 70	1.5	SM	F	Maintained hedgerow Hedge maintained laterally outgrown vertically	7	1.5	C (ii)
H6	Ash Fraxinus excelsior Blackthorn Prunus spinosa Field Maple Acer campestre Hawthorn Crataegus monogyna English Elm Ulmus procera Dogwood Cornus sanguinea	2.5	80 60 50	1.5	SM	F	Characteristic for species Crossing and rubbing branches Light ivy cover on main stem Maintained hedgerow Multi stemmed from base	6	1.3	C (ii)

Hedge No	Species	Height	Stem Dia.	Crown Radius	Age Class	Overall Condition	Structural Condition	RPA	RPA Radius	BS5837 Cat
H7	Ash Fraxinus excelsior Blackthorn Prunus spinosa Common Lime Tilia x europaea Hawthorn Crataegus monogyna Norway Maple Acer platanoides English Elm Ulmus procera	2	80 100 150	1.5	EM	G	Maintained hedgerow Multi stemmed from base No major defects were noted Typical crown form Intermittent young trees amongst the hedgerow	18	2.4	C (ii)
H8	Ash Fraxinus excelsior Blackthorn Prunus spinosa Elder Sambucus nigra Hawthorn Crataegus monogyna Crab Apple Malus sylvestris	5	100 50 40	1.5	M	F	Typical crown form Maintained laterally outgrown vertically	6	1.4	C (ii)
H9	Elder Sambucus nigra Hawthorn Crataegus monogyna Crab Apple Malus sylvestris	2	120 80 60	1	M	F	Maintained hedgerow Previously laid hedgerow	11	1.9	C (ii)
H10	Blackthorn Prunus spinosa Elder Sambucus nigra Hawthorn Crataegus monogyna Crab Apple Malus sylvestris	1.5	220	1.5	M	G	Maintained hedgerow No major defects were noted Previously laid in places	22	2.6	B (ii)

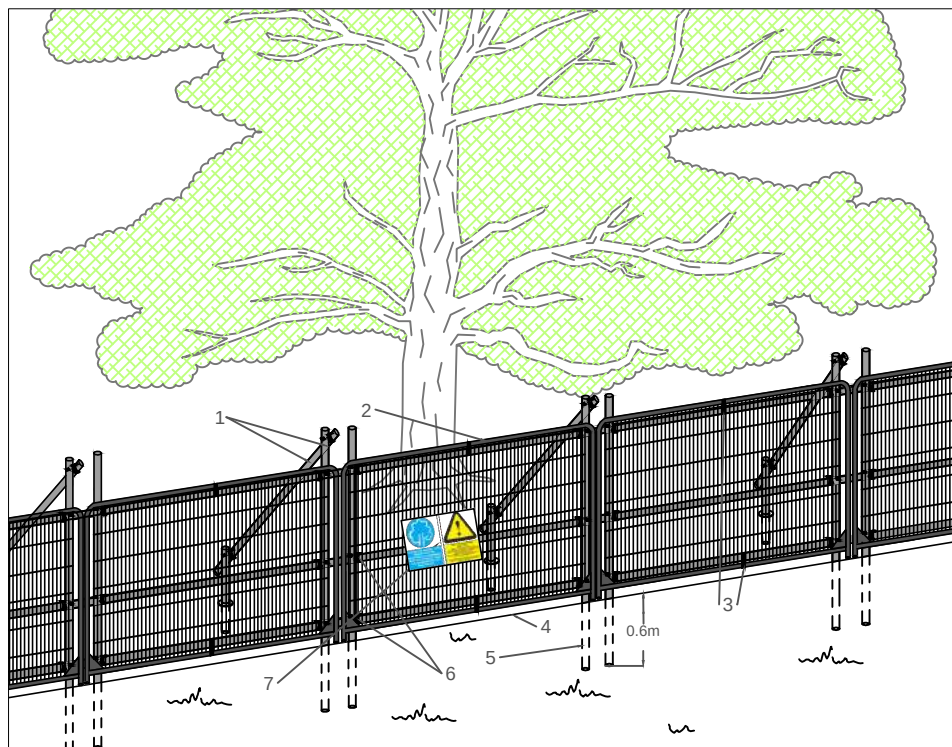
Hedge No	Species	Height	Stem Dia.	Crown Radius	Age Class	Overall Condition	Structural Condition	RPA	RPA Radius	BS5837 Cat
H11	Ash Fraxinus excelsior Blackthorn Prunus spinosa Elder Sambucus nigra Hawthorn Crataegus monogyna Crab Apple Malus sylvestris	3	220 210 110	2	M	G	Gaps present in hedgerow Maintained hedgerow No major defects were noted Previously laid in places	47	3.9	C (ii)
H12	Blackthorn Prunus spinosa Crack Willow Salix fragilis Elder Sambucus nigra Hawthorn Crataegus monogyna	2	210 150	1.5	EM,M	G	Characteristic for species Gaps present in hedgerow Maintained hedgerow Multi stemmed from base	30	3.1	C (ii)
H13	Blackthorn Prunus spinosa Elder Sambucus nigra Hawthorn Crataegus monogyna	2	120 80 150	1.5	M	F	Gaps present in hedgerow Maintained hedgerow Multi stemmed from base Laid forms present in the hedgerow	20	2.5	C (ii)
H14	English Elm Ulmus procera	3.5	50 60 50	1.5	SM	F	Maintained hedgerow	4	1.1	C (ii)

Hedge No	Species	Height	Stem Dia.	Crown Radius	Age Class	Overall Condition	Structural Condition	RPA	RPA Radius	BS5837 Cat
H15	Ash Fraxinus excelsior Blackthorn Prunus spinosa Elder Sambucus nigra Field Maple Acer campestre Hawthorn Crataegus monogyna Wych Elm Ulmus glabra English Elm Ulmus procera	2.5	80 60 70	1.5	SM	F	Maintained hedgerow	7	1.5	C (ii)
H16	Blackthorn Prunus spinosa Hawthorn Crataegus monogyna English Elm Ulmus procera	2	110 50 50	1.5	SM	P	Crossing and rubbing branches Patchy hedgerow of limited value	8	1.6	C (ii)
H17	Elder Sambucus nigra Hawthorn Crataegus monogyna	5	upto 200	2.5	EM	F	Typical crown form Maintained laterally outgrown vertically	18	2.4	C (ii)
H18	Elder Sambucus nigra Hawthorn Crataegus monogyna	4	120 80 50	1.5	SM,EM	F	Typical crown form Managed laterally outgrown vertically	11	1.8	C (ii)
H19	Blackthorn Prunus spinosa Elder Sambucus nigra Hawthorn Crataegus monogyna English Elm Ulmus procera	1.5	120 80 110	1.5	SM,EM	G	Characteristic for species Gaps present in hedgerow Maintained hedgerow Multi stemmed from base	15	2.2	C (ii)

Hedge No	Species	Height	Stem Dia.	Crown Radius	Age Class	Overall Condition	Structural Condition	RPA	RPA Radius	BS5837 Cat
H20	Blackthorn Prunus spinosa Elder Sambucus nigra Hawthorn Crataegus monogyna Crab Apple Malus sylvestris	1.5	220	1.5	M	G	Maintained hedgerow No major defects were noted Previously laid in places	22	2.6	C (ii)
H21	Ash Fraxinus excelsior Blackthorn Prunus spinosa Field Maple Acer campestre Hawthorn Crataegus monogyna English Elm Ulmus procera Dogwood Cornus sanguinea	2.5	80 60 50	1.5	SM	F	Characteristic for species Crossing and rubbing branches Light ivy cover on main stem Maintained hedgerow Multi stemmed from base	6	1.3	C (ii)
H22	Elder Sambucus nigra Hawthorn Crataegus monogyna Crab Apple Malus sylvestris English Elm Ulmus procera	1.5	110 50 60	1.0	SM	P	Crossing and rubbing branches Patchy hedgerow of limited value	8	1.6	C (ii)
H23	Hawthorn Crataegus monogyna English Elm Ulmus procera	2	100 230 80	1	SM / EM / M	F	Maintained hedgerow Typical crown form	31	3.2	C (ii)
H24	Elder Sambucus nigra Hawthorn Crataegus monogyna	3	100 80 80 128	1	EM / M	P	Dense ivy cover on main stem Outgrown hedgerow Patchy hedgerow of limited value	18	2.4	C (ii)

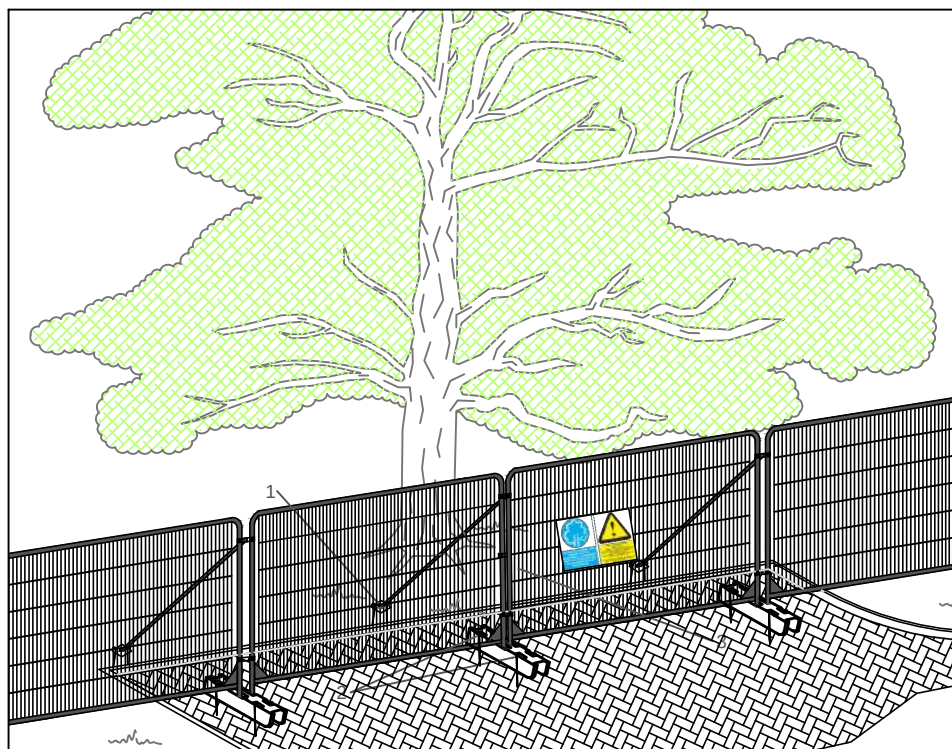
Wood No	Species	Height	Stem Dia.	Crown Radius	Age Class	Overall Condition	Structural Condition	RPA	RPA Radius	BS5837 Cat
WOODLANDS										
W1	Common Larch Larix decidua Lawson Cypress Chamaecyparis lawsoniana Norway Spruce Picea abies Scots Pine Pinus sylvestris Ash Fraxinus excelsior Beech Fagus sylvatica Common Lime Tilia x europaea Crack Willow Salix fragilis English Oak Quercus robur Wild Cherry Prunus avium Privet Ligustrum ovalifolium	20	upto 770	9	EM,M	G	Crossing and rubbing branches Interlocking crowns Major dead wood evident in the crown Minor dead wood evident in the crown Typical crown form Woodland compartment with understory Conifer present	268	9.2	A (ii),A (iii)
W2	Lawson Cypress Chamaecyparis lawsoniana Scots Pine Pinus sylvestris Ash Fraxinus excelsior English Oak Quercus robur Goat Willow Salix caprea Goat Willow Salix caprea	19	upto 400	8	SM,M	G	Crossing and rubbing branches Interlocking crowns Major dead wood evident in the crown Minor dead wood evident in the crown Typical crown forms Woodland compartment with dense understory Conifer present amongst the woodland Several glades observed throughout	72	4.8	A (ii),A (iii)

Wood No	Species	Height	Stem Dia.	Crown Radius	Age Class	Overall Condition	Structural Condition	RPA	RPA Radius	BS5837 Cat
W3	Ash Fraxinus excelsior Crack Willow Salix fragilis Norway Maple Acer platanoides White Poplar Populus alba Lawson Cypress Chamaecyparis lawsoniana Leyland Cypress Cupressocyparis leylandii Norway Spruce Picea abies Scots Pine Pinus sylvestris	25	450	5	SM / EM / M	F / G	Branch stubs evident Broken branches evident Etiolated form Major dead wood evident in the crown (>75mm) Minor dead wood evident in the crown (<75mm) Suppressed crown form	92	5.4	A (ii), A (iii)



Standard specification for protective barrier

1. Standard scaffold poles
2. Heavy gauge 2m tall galvanized tube and welded mesh infill panels
3. Panels secured to scaffold frame with wire ties
4. Ground level
5. Uprights driven into the ground until secure (min depth of 0.6m)
6. Standard scaffold clamps
7. Construction Exclusion Zone signs



Above ground stabilising systems

1. Stabiliser strut with base plate secured with ground pins
2. Feet blocks secured with ground pins
3. Construction Exclusion Zone signs

Protective Fencing to be positioned to the specified dimensions in accordance with Figure 3 Tree Retention Plan

NOTES

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drawing title

APPENDIX B PROTECTIVE FENCING SPECIFICATIONS

CAD file: S:\Arb resources\Basic Templates\Tree Protection\Appendix B - Protective Fencing A4.dwg

Appendix C

Collingtree Lodge, Northampton

Tree Preservation Order No.63

&

Grange Park, Courteenhall

Tree Preservation Order No.2/2001

FIRST SCHEDULE

TREES SPECIFIED INDIVIDUALLY

(encircled in black on the map)

<u>No. on Map</u>	<u>Description</u>	<u>Situation</u>
T1	Common Ash	Near to the western extremity of a site proposed for hotel development north-west of Junction 15 of the M1 Motorway: OS Sheet SP 7554 NW, grid square 753 Easting, 549 Northing
T2	False Acacia	Some 31m from the northern boundary and approximately 118m from the eastern boundary of a site proposed for hotel development north-west of Junction 15 of the M1 Motorway: OS Sheet SP 7554 NE, grid square 755 Easting, 549 Northing
T3	Silver Birch	Some 18m from the northern boundary and approximately 101m from the eastern boundary of a site proposed for hotel development north-west of Junction 15 of the M1 Motorway: grid square 755 Easting, 549 Northing
T4	Beech	Near the northern boundary and approximately 98m from the eastern boundary of a site proposed for hotel development north-west of Junction 15 of the M1 Motorway: grid square 755 Easting, 549 Northing
T5	Beech	On or adjacent to the northern boundary and approximately 83m from the eastern boundary of a site proposed for hotel development north-west of Junction 15 of the M1 Motorway: grid square 755 Easting, 549 Northing
T6	Beech	On or adjacent to the northern boundary and approximately 76m from the eastern boundary of a site proposed for hotel development north-west of Junction 15 of the M1 Motorway: grid square 755 Easting, 549 Northing
T7	Beech	On or adjacent to the northern boundary and approximately 72m from the eastern boundary of a site proposed for hotel development north-west of Junction 15 of the M1 Motorway: grid square 755 Easting, 549 Northing
T8	Beech	On or adjacent to the northern boundary and approximately 66m from the eastern boundary of a site proposed for hotel development north-west of Junction 15 of the M1 Motorway: grid square 755 Easting, 549 Northing
T9	Beech	On or adjacent to the northern boundary and approximately 61m from the eastern boundary of a site proposed for hotel development north-west of Junction 15 of the M1 Motorway: grid square 755 Easting, 549 Northing
T10	Beech	On or adjacent to the northern boundary and approximately 57m from the eastern boundary of a site proposed for hotel development north-west of Junction 15 of the M1 Motorway: grid square 755 Easting, 549 Northing
T11	Beech	On or adjacent to the northern boundary and approximately 51m from the eastern boundary of a site proposed for hotel development north-west of Junction 15 of the M1 Motorway: grid square 755 Easting, 549 Northing
T12	Beech	On or adjacent to the northern boundary and approximately 46m from the eastern boundary of a site proposed for hotel development north-west of Junction 15 of the M1 Motorway: grid square 755 Easting, 549 Northing

T13	Beech	On or adjacent to the northern boundary and approximately 40m from the eastern boundary of a site proposed for hotel development north-west of Junction 15 of the M1 Motorway: grid square 755 Easting, 549 Northing
T14	Beech	On or adjacent to the northern boundary and approximately 35m from the eastern boundary of a site proposed for hotel development north-west of Junction 15 of the M1 Motorway: grid square 755 Easting, 549 Northing
T15	Walnut	Some 24m from the northern boundary and approximately 44m from the eastern boundary of a site proposed for hotel development north-west of Junction 15 of the M1 Motorway: grid square 755 Easting, 549 Northing
T16	Walnut	Some 36m from the northern boundary and approximately 45m from the eastern boundary of a site proposed for hotel development north-west of Junction 15 of the M1 Motorway: grid square 755 Easting, 549 Northing
T17	Pine	Some 48m for the northern boundary and approximately 20m from the eastern boundary of a site proposed for hotel development north-west of Junction 15 of the M1 Motorway: grid square 755 Easting, 549 Northing
T18	False Cypress	Some 36m from the northern boundary and approximately 6m from the eastern boundary of a site proposed for hotel development north-west of Junction 15 of the M1 Motorway: grid square 756 Easting, 549 Northing
T19	Thorn	On the eastern boundary and some 32m from the northern boundary of a site proposed for hotel development north-west of Junction 15 of the M1 Motorway: grid square 756 Easting, 549 Northing
T20	Holly	On or adjacent to the eastern boundary and some 10m from the northern boundary of a site proposed for hotel development north-west of Junction 15 of the M1 Motorway: grid square 756 Easting, 549 Northing
T21	Lombardy Poplar	Near the north-east corner of a site proposed for hotel development north-west of Junction 15 of the M1 Motorway: grid square 756 Easting, 549 Northing

TREES SPECIFIED BY REFERENCE TO AN AREA
(within a dotted black line on the map)

NONE

GROUPS OF TREES
(within a broken black line on the map)

<u>No. on Map</u>	<u>Description</u>	<u>Situation</u>
G1	A group of trees comprising 4 Thorns	On or adjacent to the northern boundary near to the western extremity of a site proposed for hotel development north-west of Junction 15 of the M1 Motorway: OS Sheet SP 7554 NW, grid squares 753 Easting, 549 Northing and 754 Easting, 549 Northing

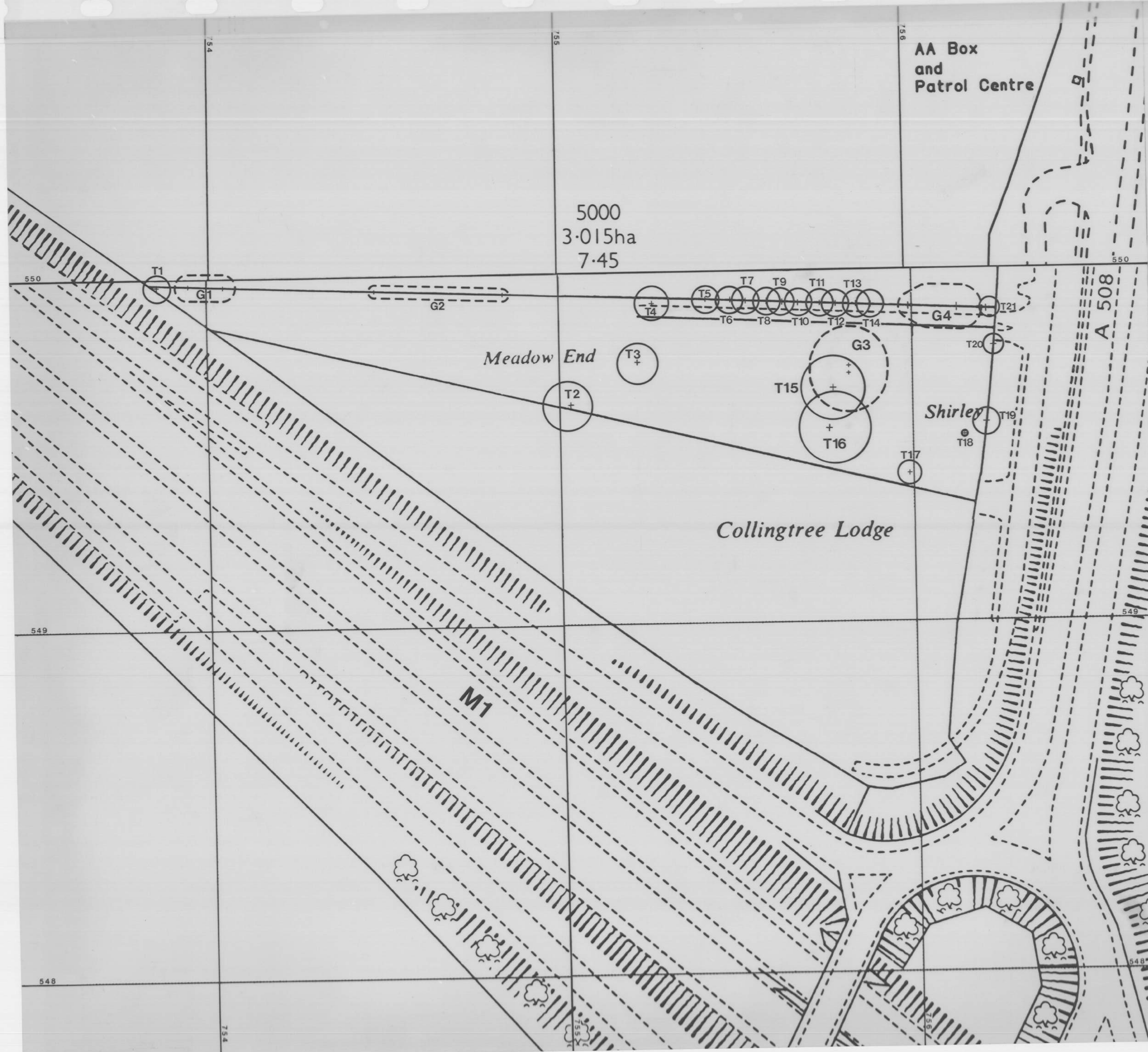
G2	A group of trees comprising 17 Lombardy Poplars	On or adjacent to the northern boundary and approximately 141 to 177m from the eastern boundary of a site proposed for hotel development north-west of Junction 15 of the M1 Motorway: grid square 754 Easting, 549 Northing
G3	A group of trees comprising 2 Beeches	Some 40m from the eastern boundary and approximately 18 to 20 m from the northern boundary of a site proposed for hotel development north-west of Junction 15 of the M1 Motorway: OS Sheet SP 7554 NE, grid square 755 Easting, 549 Northing
G4	A group of trees comprising 6 Beeches	On or adjacent to the northern boundary and approximately 11 to 25m from the eastern boundary of a site proposed for hotel development north-west of Junction 15 of the M1 Motorway: grid squares 755 Easting, 549 Northing and 756 Easting, 549 Northing

WOODLANDS
(within a continuous black line on the map)

NONE

Northampton Borough Council

Tree Preservation Order
No. 63 : Collingtree
Lodge



⊕ Individual Trees

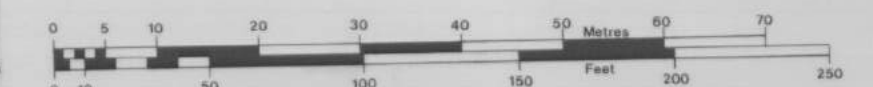
⌈ Group of Trees

Borough Solicitor

Drwg. No. TP·58·44

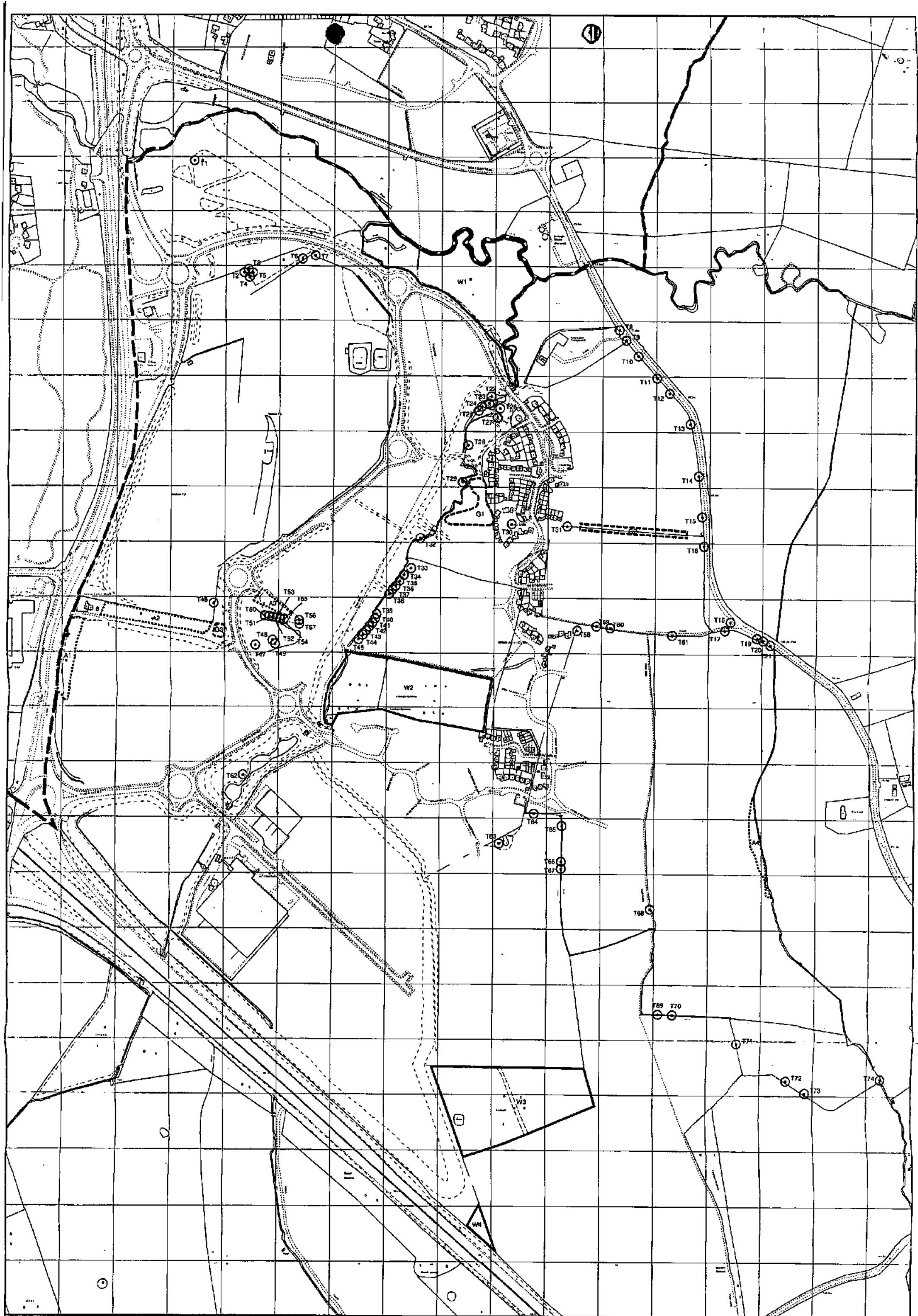
Date 18·12·89

Scale 1:500



D.Watt B.A.(Hons) C.Eng. M.I.C.E.
Chief Technical Services Officer
Cliftonville House Northampton

A3	An area of trees comprising beech, spruce, Norway maple, cypress, pine, cherry, oak.	OS Grid Reference SP 760 551
A4	An area of trees comprising oak, poplar, willow, hawthorn, ash.	OS Grid Reference SP 769 547
Groups of trees (within a broken line on the map)		
Reference on map	Description	Situation
G1	6 ash, 22 oak, 2 willow	OS Grid Reference SP 764 553
G2	30 willow	OS Grid Reference SP 767 553
G3	1 sycamore, 1 beech, 4 horse chestnut	OS Grid Reference SP 759 551
Woodlands (within a continuous black line on the map)		
Reference on map	Description	Situation
W1	Hybrid black poplar, willow, hawthorn, ash, oak.	OS Grid Reference SP 764 557
W2	Poplar, ash, pine, oak, spruce, beech, larch, cypress, lime, Norway maple, sycamore, cherry.	OS Grid Reference SP 763 550
W3	Cypress, ash, pine, oak, sycamore.	OS Grid Reference SP 765 542
W4	Cypress, ash, pine, oak, sycamore	OS Grid Reference SP 764 540



1:6000

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Grange Park, Courteenhall

SCHEDULE 1

SPECIFICATION OF TREES

Trees specified individually (encircled in black on the map)		
Reference on map	Description	Situation
T1	Oak	OS Grid Reference SP 7594 5599
T2	Ash	OS Grid Reference SP 7603 5578
T3	Ash	OS Grid Reference SP 7604 5579
T4	Southern beech	OS Grid Reference SP 7604 5577
T5	Southern beech	OS Grid Reference SP 7604 5578
T6	Oak	OS Grid Reference SP 7614 5581
T7	Oak	OS Grid Reference SP 7616 5581
T8	Oak	OS Grid Reference SP 7673 5568
T9	Oak	OS Grid Reference SP 7674 5566
T10	Oak	OS Grid Reference SP 7676 5563
T11	Oak	OS Grid Reference SP 7680 5559
T12	Oak	OS Grid Reference SP 7682 5556
T13	Oak	OS Grid Reference SP 7686 5551
T14	Oak	OS Grid Reference SP 7687 5542
T15	Oak	OS Grid Reference SP 7688 5534
T16	Oak	OS Grid Reference SP 7689 5529
T17	Oak	OS Grid Reference SP 7693 5514
T18	Oak	OS Grid Reference SP 7694 5515
T19	Grey poplar	OS Grid Reference SP 7698 5512
T20	Hybrid black poplar	OS Grid Reference SP 7700 5512
T21	Hybrid black poplar	OS Grid Reference SP 7701 5511
T22	Hybrid black poplar	OS Grid Reference SP 7649 5556
T23	Hybrid black poplar	OS Grid Reference SP 7648 5555
T24	Oak	OS Grid Reference SP 7647 5554
T25	Willow	OS Grid Reference SP 7646 5553
T26	Oak	OS Grid Reference SP 7650 5554
T27	Oak	OS Grid Reference SP 7650 5552
T28	Ash	OS Grid Reference SP 7645 5547
T29	Ash	OS Grid Reference SP 7644 5540
T30	Oak	OS Grid Reference SP 7653 5533
T31	Oak	OS Grid Reference SP 7663 5532
T32	Ash	OS Grid Reference SP 7636 5530
T33	Hybrid black poplar	OS Grid Reference SP 7634 5525
T34	Hybrid black poplar	OS Grid Reference SP 7633 5524
T35	Hybrid black poplar	OS Grid Reference SP 7632 5522
T36	Hybrid black poplar	OS Grid Reference SP 7631 5522
T37	Hybrid black poplar	OS Grid Reference SP 7631 5521
T38	Hybrid black poplar	OS Grid Reference SP 7630 5520
T39	Hybrid black poplar	OS Grid Reference SP 7628 5516
T40	Hybrid black poplar	OS Grid Reference SP 7627 5516
T41	Hybrid black poplar	OS Grid Reference SP 7627 5515
T42	Hybrid black poplar	OS Grid Reference SP 7626 5514
T43	Hybrid black poplar	OS Grid Reference SP 7626 5513

T44	Hybrid black poplar	OS Grid Reference SP 7625 5513
T45	Hybrid black poplar	OS Grid Reference SP 7624 5512
T46	Ash	OS Grid Reference SP 7598 5518
T47	Lime	OS Grid Reference SP 7605 5511
T48	Yew	OS Grid Reference SP 7608 5512
T49	Wellingtonia	OS Grid Reference SP 7609 5591
T50	Beech	OS Grid Reference SP 7607 5516
T51	Beech	OS Grid Reference SP 7608 5516
T52	Beech	OS Grid Reference SP 7609 5516
T53	Beech	OS Grid Reference SP 7609 5516
T54	Beech	OS Grid Reference SP 7610 5516
T55	Beech	OS Grid Reference SP 7610 5515
T56	Lime	OS Grid Reference SP 7613 5515
T57	Lime	OS Grid Reference SP 7613 5515
T58	Oak	OS Grid Reference SP 7665 5514
T59	Oak	OS Grid Reference SP 7669 5514
T60	Oak	OS Grid Reference SP 7671 5514
T61	Hybrid black poplar	OS Grid Reference SP 7683 5513
T62	Oak	OS Grid Reference SP 7603 5487
T63	Hybrid black poplar	OS Grid Reference SP 7651 5475
T64	Ash	OS Grid Reference SP 7657 5480
T65	Oak	OS Grid Reference SP 7662 5478
T66	Oak	OS Grid Reference SP 7662 5472
T67	Oak	OS Grid Reference SP 7662 5470
T68	Oak	OS Grid Reference SP 7679 5463
T69	Willow	OS Grid Reference SP 7680 5444
T70	Ash	OS Grid Reference SP 7683 5444
T71	Oak	OS Grid Reference SP 7695 5439
T72	Oak	OS Grid Reference SP 7704 5432
T73	Oak	OS Grid Reference SP 7708 5430
T74	Ash	OS Grid Reference SP 7722 5433

Trees specified by reference to an area
(within a dotted black line on the map)

Reference on map	Description	Situation
A1	An area of trees comprising horse chestnut, rowan, plane, oak, Norway maple, hawthorn, cypress, alder, ash, poplar.	OS Grid Reference SP 757 550
A2	An area of trees comprising wellingtonia, cypress, spruce, oak, Norway maple, swedish whitebeam, cherry, coast redwood, beech.	OS Grid Reference SP 758 551

Appendix 4.3



Roxhill Developments Ltd

M1 Junction 15 West, Northampton
(Bypass & Satellite Junctions)
Arboricultural Assessment

April 2018

FPCR Environment and Design Ltd

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Rev	Issue Status	Prepared / Date	Approved/Date
-	Final	TCB / 16.04.2018	CTT / 16.04.2018

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Table 2: Summary of Impact on Tree Stock

PLANS

Tree Survey Plans (5772-T-01 to 5772-T-09)

Tree Retention Plans (5772-T-10 to 5772-T-18)

APPENDICES

Appendix A: Tree Schedule

Appendix B: Protective Fencing Specifications

1.0 INTRODUCTION

- 1.1 This report has been prepared by FPCR Environment and Design Limited on behalf of Roxhill Developments Ltd to present the findings of an arboricultural assessment and survey of trees located on land surrounding and adjacent to various sections of minor roads leading to the motorway junction 15 of the M1.
- 1.2 The tree survey and assessment of existing trees has been carried out in accordance with guidance contained within British Standard 5837:2012 '*Trees in Relation to Design, Demolition and Construction - Recommendations*' (hereafter referred to as BS5837). The guidelines set out a structured assessment methodology to assist in determining which trees would be deemed either as being suitable or unsuitable for retention.
- 1.3 This report should be read in conjunction with the Arboricultural Assessment (M1 Junction 15 West, Northampton) Ref: 5772AA Final Rev B, produced by FPCR Environment and Design Limited and dated April 2018.
- 1.4 This report presents the findings of a further assessment of trees associated with ten areas surrounding CourteenHall, Collingtree, Roade, Stoke Bruerne, Hunsbury Meadows and Alderton. These areas have been shown on Tree Survey Plan (drawing no. 5772-T-01). The purpose of the report is therefore to firstly present the results of an assessment of the existing trees' arboricultural value, based on their current condition and quality and to secondly provide an assessment of impact arising from the proposed development of the site.
- 1.5 It is understood following review of the Local Planning Authority website, Northampton Borough Council, that there are no tree preservation orders or conservation area designations that would apply to any trees present on, or in close proximity to the assessment site and therefore no statutory constraints would apply to the development in respect of trees.

2.0 METHODOLOGY

- 2.1 The survey of trees has been carried out in accordance with the criteria set out in Chapter 4 of BS5837. The survey has been undertaken by a suitably qualified and experienced arboriculturalist and has recorded information relating to all those trees within the site and those adjacent to the site which may be of influence to any proposals. Trees were assessed for their arboricultural quality and benefits within the context of the proposed development in a transparent, understandable and systematic way.
- 2.2 Trees have been assessed as groups or woodlands where it has been determined appropriate. The term group has been applied where trees form cohesive arboricultural features either aerodynamically, visually or culturally including biodiversity or habitat potential for example parkland or wood pasture. An assessment of individual trees within groups or woodlands has been made where a clear need to differentiate between them, for example, in order to highlight significant variation between attributes including physiological or structural condition or where a potential conflict may arise.

- 2.3 Trees have been divided into one of four categories based on Table 1 of BS5837, '*Cascade chart for tree quality assessment*'. For a tree to qualify under any given category it should fall within the scope of that category's definition (see below). Category U trees are those which would be lost in the short term for reasons connected with their physiology or structural condition. They are, for this reason not considered in the planning process on arboricultural grounds. Categories A, B and C are applied to trees that should be of material considerations in the development process. Each category also having one of three further sub-categories (i, ii, iii) which are intended to reflect arboricultural, landscape and cultural or conservation values accordingly.
- 2.4 **Category (U) – (Red):** Trees which are unsuitable for retention and are 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 within this category are:
- Trees that have a serious irremediable structural defect such that their early loss is expected due to collapse and includes trees that will become unviable after removal of other category U trees.
 - Trees that are dead or are showing signs of significant, immediate or irreversible overall decline.
 - Trees that are infected with pathogens of significance to the health and/ or safety of other nearby trees or are very low quality trees suppressing adjacent trees of better quality.
 - Certain category U trees can have existing or potential conservation value which may make it desirable to preserve.
- 2.5 **Category (A) – (Green):** Trees that are considered for retention and are of high quality with an estimated remaining life expectancy of at least 40 years with potential to make a lasting contribution. Such trees may comprise:
- Sub category (i) trees that are particularly good examples of their species, especially if rare or unusual, or are essential components of groups such as formal or semi-formal arboricultural features for example the dominant and/or principal trees within an avenue.
 - Sub category (ii) trees, groups or woodlands of particular visual importance as arboricultural and / or landscape features.
 - Sub category (iii) trees, groups or woodlands of significant conservation, historical, commemorative or other value for example veteran or wood pasture.
- 2.6 **Category (B) – (Blue):** Trees that are considered for retention and are of moderate quality with an estimated remaining life expectancy of at least 20 years with potential to make a significant contribution. Such trees may comprise:
- Sub category (i) trees that might be included in category A but are downgraded because of impaired condition for example the presence of significant though remediable defects, including unsympathetic past management and storm damage.
 - Sub category (ii) 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.
 - Sub category (iii) trees with material conservation or other cultural value.

2.7 **Category (C) – (Grey):** Trees that are considered for retention and are of low quality with an estimated remaining life expectancy of at least 10 years or young trees with a stem diameter below 150mm. Such trees may comprise:

- Sub category (i) unremarkable trees of very limited merit or such impaired condition that they do not qualify in higher categories.
- Sub category (ii) trees present in groups or woodlands, but without this conferring on them significantly greater collective landscape value or trees offering low or only temporary / transient screening benefits.
- Sub category (iii) trees with no material conservation or other cultural value.

Tree Schedule

2.8 Appendix A presents details of any individual trees, groups, hedgerows and woodlands found during the assessment including heights, diameters at breast height, crown spread (given as a radial measurement from the stem), age class, comments as to the overall condition at the time of inspection, BS5837 category of quality and suitability for retention and the root protection area.

2.9 General observations particularly of structural and physiological condition for example the presence of any decay and physical defect and preliminary management recommendations have also been recorded where appropriate.

Hedgerows

2.10 For the purposes of this assessment, a hedgerow is described as any boundary line of trees or shrubs less than 5m wide at the base and are managed under a regular pruning regime. Hedgerows and substantial internal or boundary hedges (including evergreen screens) have been recorded including lateral spread, height and stem diameter(s). Where trees are present within a hedgerow that are significantly different in character from the remainder, these have been identified and recorded separately.

2.11 A tree survey in accordance with BS5837 does not assess hedgerows against the Hedgerow Regulations 1997 or specifically from an ecological perspective, and is outside the scope of this assessment.

Veteran Trees

2.12 Veteran trees are important components of the landscape, their importance can be for a number of reasons including that of their ecological, social, cultural and historic value. Veteran Trees are a material consideration within the planning process and their importance is specifically recognised within the National Planning Policy Framework 2012. Should any veteran trees be identified during the initial level 2 BS5837 assessment further survey work of those trees and their communities will be required sufficient to meet planning application needs. From an ecological perspective, veteran trees provide a rare and specialist niche habitat and therefore preservation of this habitat is considered highly important.

- 2.13 Veteran trees and many of their associated specialised species are becoming increasingly rare within the landscape and therefore some veteran tree landscapes and their associated species are now protected, both nationally and Europe wide through the Natura 2000 Directive.

Methodology for the Assessment of Veteran Trees

- 2.14 The methodologies and assessment criteria used to determine whether or not any trees within the Site were of veteran status are as follows. The defining criteria for the definition of a veteran tree is one that has all or most of the following characteristics listed below based on the following references:
- *The estimated girth size categories used to determine a veteran tree by species has been according to 'Estimated girth size categories for Veteran Trees (from Rural Development Service 2006 Environmental Stewardship-Farm Environment Plan Guidance 009). See Table 1 below.*
 - *Smith & Bunce (2004) and amended according to English Nature's Development of a Veteran Tree Site Assessment Protocol (Castle & Mileto 2005);*
 - *Read 2000 (Veteran Trees – a guide to good management, Veteran Tree Initiative and English Nature (now Natural England);*
 - *Ancient Tree Hunt (Owen and Alderman 2008);*
 - *Ancient and Other Veteran Trees: Further Guidance on Management (editor David Lonsdale 2013 and Reed)*
- 2.15 The veteran tree assessment undertaken at the Site has been carried out using an adaptation of English Nature's Specialist Survey Method (SSM). The adapted system was originally designed by Treework Environmental Practice for English Nature (now Natural England) for collecting data on the associated features and habitat attributes of veteran trees. Crucially this survey method is designed to be adaptable by having a range of levels and detail of survey information.
- 2.16 The survey for veteran trees at the Site has therefore been at SSM Level 2, which is designed for the recording of essential veteran tree information but does not include the recording and interpreting of veteran tree habitats or signs of associated/dependant organisms yet will, where present, make reference to potential habitat to support such specialist associations and indicate where further specialist survey work would be required. Such data should only be recorded and interpreted by a suitably qualified Ecologist or Entomologist.
- 2.17 The Level 2 assessment collects a minimum level of information which would allow determination of veteran status but future management recommendations will need to be determined following a more detailed assessment and would take into consideration some of the more recent research work and guidance for the management of veteran trees contained within *Ancient and Other Veteran Trees: Further Guidance on Management* (Lonsdale and Reed, 2013).
- 2.18 The term 'veteran' refers to those trees that display habitat features associated with ancient trees. This term can include both ancient trees and trees that display these features prior to the ancient stage. It is also used to describe the habitat features themselves (as in 'veteran features').

- 2.19 Table 1, below, shows the estimated girth size categories that have been used to determine a Veteran tree by species.

Table 1: Estimated girth size categories for Veteran Trees (from Rural Development Service 2006 Environmental Stewardship-Farm Environment Plan Guidance 009)

Tree Girth (minimum)	Diameter at Breast Height (dbh) – (minimum)	Species
190 cm	60cm	Birch species and Hawthorn
240cm	75cm	Field Maple, Rowan, Grey and Goat Willow, Hornbeam, Cherry and Alder
310cm	100cm	Oak species, Ash, Scots Pine, Yew and Elm species
470cm	150cm	Lime species, Sycamore, Horse Chestnut, Poplar species, other Pine species, Beech, Sweet Chestnut and White and Crack Willows

List of Veteran Tree Characteristics

How to recognise an ancient and or veteran tree:

- 2.20 According to the above listed guidance⁶ in paragraph 2.10, the defining criteria for a veteran tree is one which shows the required amount and quality of physical attributes, characteristics and features pertaining to veteran trees as listed below.
- biological, aesthetic or cultural interest, because of its great age (NB the biological interest is largely derived from the development of a diverse range of habitats associated with dead and decaying wood⁷ source *Ancient and other veteran trees: further guidance on management* (editor David Lonsdale 2013),
 - a growth stage that is described as ancient or post-mature,
 - a chronological age that is old relative to others of the same species,
 - a girth that is very large for the species, allowing for the local growing conditions (NB for the size-based attributes these would depend on the tree species concerned, together with soil and climate but the following criteria apply generally to oak; trees with a diameter at breast height of more than 1.0 m (girth 3.2 m) are potentially interesting and trees with a diameter of more than 1.5 m (girth 4.7 m) are valuable with respect to conservation.
 - extensive decay or hollowing in exposed parts of the central wood;
 - a crown structure that, for the species concerned, is characteristic of the latter stages of life;
 - a crown that has undergone retrenchment, i.e. it has become smaller (owing to dieback and breakage) since maturity.

2.21 Other key attributes of Veteran trees (i.e. the more of these a tree has, the stronger the indication that it is a veteran)

- Major trunk cavities or progressive hollowing
- Naturally forming water pools
- Decay holes
- Physical damage to trunk
- Bark loss
- Large quantity of dead wood in the canopy
- Sap runs
- Crevices in the bark, under branches or on the root plate sheltered from direct rainfall
- Fungal fruiting bodies (e.g. from heart-rotting species)
- High number of interdependent wildlife species
- Epiphytic plants (if these are abundant or include rare species)
- An old look
- High aesthetic interest.

2.22 Other attributes which can additionally apply are:

- A pollard form or other form indicating previous management
- Cultural/historic value
- A prominent position in the landscape

2.23 Having a large stem diameter for the species alone does not qualify a tree as being veteran. In order for it to qualify as a veteran tree, mature trees are assessed as to whether they possess either three or more of the characteristic features listed above or significant signs of one or more of the additional associated attributes.

Other Considerations

2.24 It may be necessary during detailed design to undertake further assessment and accurate positioning of woody species within hedgerows and tree groups to assist structural calculations for foundation design of structures in accordance with current building regulations. Knowledge of soil type was not known at the time of this tree assessment. If a current soil survey of the site has taken place then it must be read in conjunction with the results of the tree survey.

2.25 The exact position of individual trees or species included as part of a tree group, hedgerow or woodland should be checked and verified on site prior to any decisions for foundation design, tree operations or construction activity being undertaken. Further survey work would be required for calculating foundation depths in accordance with NHBC Chapter 4.2 Building near Trees.

Conditions of Tree Survey

- 2.26 The survey was completed from ground level only and from within the boundary of the site. Aerial tree inspections or the internal condition of the stem/s or branches were not undertaken at this stage as this level of survey is beyond the scope of the initial assessment. Evaluation of tree condition given within this assessment applies to the date of survey and cannot be assumed to remain unchanged. It may be necessary to review these within 12 months, in accordance with sound arboricultural practice.

Site Plans

- 2.27 The individual positions of trees and groups have been shown on the Tree Survey Plan. The positions of trees are based on a topographical / land survey, as far as possible, supplied by the client. Where topographical information has not identified the position of trees and hedgerows, their relation to any existing surrounding features has been plotted using a global positioning system and aerial photography to provide approximate locations. The crown spread, root protection area and shade pattern (where appropriate) are also indicated on this plan.
- 2.28 As part of this assessment, a Tree Retention Plan, has been prepared to show the proposed layout in relation to the existing tree cover allowing an assessment of any potential conflicts. The plan also identifies which trees would be required to be removed or retained as part of the proposed development.

Tree Constraints and Root Protection Areas

- 2.29 Below ground constraints to future development are represented by the area surrounding the tree containing sufficient rooting volume for the specimen to have the best chance of survival in the long term which is identified as the root protection area (RPA). The RPA has been calculated in accordance with section 4.6 of BS5837 and requires suitable protection in order for the tree to be successfully incorporated into any future scheme. Where applicable the shape of the Root Protection Area has been modified to take into account the presence of any nearby obstacles (existing or past) which may have restricted root growth and the likely root distribution i.e. the presence of hard standing, structures and underground apparatus.
- 2.30 Where groups of trees have been assessed, the Root Protection Area has been shown based on the maximum sized tree in any one group and so may exceed the Root Protection Area required for some of the individual specimens within the group. Further detailed inspection of the individual trees forming a group may be required where development impacts upon the group.
- 2.31 Above ground constraints such as the current crown spread of the trees and an illustration of the shade pattern (where appropriate) have been considered and identified within the Tree Survey Plan and Tree Retention Plan indicates their potential area of shading influence.

3.0 RESULTS

- 3.1 A total of 109 individual trees, 68 groups of trees, 35 hedgerows and a single woodland were surveyed as part of the Arboricultural Assessment. Trees were surveyed as individual trees and groups of trees where examples are clearly present as per the description. Refer to Tree Survey Plan and Appendix A 'Tree Schedule' for full details of the trees included in this assessment. The table below summarises the trees assessed. Several of the trees have been discussed in more detail following the table, owing to their physical condition or arboricultural significance.

Results Summary

- 3.2 The majority of tree cover observed was typical for the species and setting and consisted of roadside hedgerows in various states of management with mature individual standard trees sporadically positioned throughout. New planting also formed tree groups around newer areas of highway infrastructure such as roundabouts. Trees associated with private properties were also present and for the majority provided tree cover of a higher quality.

Table 1: Summary of Trees by Retention Category

	Individual Trees	Total	Groups of Trees	Total
Category U - Unsuitable	T15, T16, T18, T29, T41, T44, T50, T54, T66, T96,	10		0
Category A (High Quality / Value)	T1, T6, T24, T35, T39, T40, T42, T43, T69, T75, T76, T77, T78, T79, T80,	15	G38, W1	2
Category B (Moderate Quality / Value)	T2, T3, T7, T8, T10, T11, T12, T14, T17, T19, T20, T21, T22, T23, T25, T26, T27, T28, T30, T31, T32, T33, T34, T36, T37, T38, T45, T48, T51, T52, T53, T55, T60, T61, T62, T63, T64, T65, T67, T70, T72, T73, T74, T81, T82, T83, T85, T88, T93, T94, T97, T105,	52	G1, G2, G3, G4, G5, G6, G8, G9, G10, G15, G16, G17, G18, G19, G20, G22, G23, G24, G25, G30, G31, G32, G34, G39, G41, G44, G45, G47, G48, G50, G53, G54, G55, G56, G59, G64, G65, G66, G67, H3, H9, H11, H19,	Groups ĩ 39 Hedges - 4
Category C (Low Quality / Value)	T4, T5, T9, T13, T31, T46, T47, T49, T56, T57, T58, T59, T68, T71, T84, T87, T89, T90, T91, T92, T95, T98, T99, T100, T101, T102, T103, T104, T106, T107, T108, T109,	32	G7, G11, G12, G13, G14, G17, G21, G26, G27, G28, G29, G33, G35, G36, G37, G40, G42, G43, G46, G49, G51, G52, G57, G58, G60, G61, G62, G63, G68, H1, H2, H4, H5, H6, H7, H8, H10, H12, H13, H14, H15, H16, H17, H18, H20, H21, H22, H23, H24, H25, H26, H27, H28, H29, H30, H31, H32, H33, H34, H35	Groups ĩ 29 Hedges ĩ 31

- 3.3 Trees of high Arboricultural value and retention category A consisted of 15 individual specimens and a single woodland. Trees of high quality were typically mature examples of English oak *Quercus robur*. A number of trees associated with frontages to private properties were also deemed to be high in quality and included beech *Fagus sylvatica* and common lime *Tilia x europaea*.
- 3.4 A woodland block situated to the north west of Courteenhall and a single tree group associated with the access to Courteenhall were both recorded as high quality and category A due to their importance to the surrounding landscape.
- 3.5 Tree cover of moderate quality and category B consisted of 52 individual trees, 39 tree groups and 4 hedgerows. A wide range of species were recorded with example of ash *Fraxinus excelsior*, field maple *Acer campestre*, Sycamore Alder, Hybrid black poplar and lime amongst others. Hedgerows consisted of native mixed species in various managed states which has created linear features.

- 3.6 Low quality tree cover comprised of 32 individual trees, 29 groups and 31 hedgerows and therefore provided the majority of tree cover assessed. This tree cover exhibited multiple conditions ranging from broken branches, crossing and rubbing stems, dense ivy, dead wood and sparse crowns. Trees were generally fair to poor in condition and therefore low in quality. Hedgerow material was either sparse with gaps and undergrowth or low in form. Retention category C was recorded for this tree cover.
- 3.7 10 individual trees were recorded as being unsuitable for retention and category U. These were a mixture of English oak, ash, field maple and horse chestnut *Aesculus hippocastanum*. Specimens displayed signs of significantly declining health such as crown die back or limited live growth along with structural conditions such as heavy leaning stems.
- 3.8 Recorded by the BS 5837 survey was a single veteran tree (T39); according to accepted assessment methodologies and published guidance, cited in Chapter 2 Methodology. This tree was an ash with a large open cavity and hollowing stem and multiple broken branches, *Inonotus hispidus* was also present.

4.0 ARBORICULTURAL IMPACT ASSESSMENT

- 4.1 The following paragraphs present a summary of the tree survey and discussion of particular trees and groups recorded in the context of any proposed development in the form of an Arboricultural Impact Assessment in accordance with section 5.4 of BS5837. Any final tree retentions will need to be reconciled with the advice contained within this report.
- 4.2 The AIA has been based upon the Highway and Junction works drawings: 180207 NGW-BWB-HGN-HW-M2-D-100_Highway GA and 180226 NGW-BWB-HGN-R-M2-001_2d Alignment (bypass 13.03.18) and seeks to outline the relationship between the proposals and the existing trees and hedgerows. The drawing shows the proposals for a new bypass to the west of Roade along with highway improvements at eight sections of road including a number of junctions. An overlay of the above layout has been incorporated in the Tree Retention Plan to assist in identifying the relationship and any potential conflicts between the proposals and the existing trees and hedgerows.
- 4.3 Proposed highway works will include road widening, re-alignment, construction of new roundabouts and public links along with earthworks and drainage attenuation.
- 4.4 The majority of tree loss will be associated with the construction of a new bypass to the north west of Roade which will include the construction of three roundabouts, a bridge and extensive earthworks.
- 4.5 Additional losses will occur at the junction with Stoke Road and Knock Lane, along Blisworth Road, at the junction between Watering Lane and London Road and at the junction between Courteenhall Road and Northampton Road.
- 4.6 Overall trees losses comprise of two category A trees, 29 individual trees or groups of moderate quality trees and a further 35 areas of low quality tree cover. Tree groups will be partially removed where possible to reduce impacts.

- 4.7 Unfortunately the scheme is not able to accommodate the veteran ash tree listed above due to its position in relation to the bypass and without compromising the trees future survival or a major re-design. The loss of this tree should be seen as a constraint as this tree is an isolated individual which does not form part of a community of veteran trees.
- 4.8 Overall the loss of tree cover is considered to be acceptable due to the requirements for highway improvements in relation to the proposed development of J15. New tree planting will be provided alongside any new carriageway infrastructure to mitigate for the loss of this tree cover currently providing linear tree cover linking the various elements of the site.

New Tree Planting

- 4.9 New tree planting will form an integral part of the new development however, proposals for new tree planting should be appropriate for the future use of the site and not just aim to improve the existing tree population.
- 4.10 As part of the development proposals an adequate quantity of structured tree planting has been demonstrated predominantly within or close to hard landscaped areas of car parking or alongside the primary access roads within the roadside verges. The purpose and function of this new tree planting should be understood from the start of any design stages so that key objectives from a landscape perspective can also be achieved.
- 4.11 The success of any landscaping scheme relies on an adequate provision of a high quality rooting environment within which trees can thrive and reach their full potential. Planting trees with due care and consideration can, in the long term, provide a greater return on a schemes green investment and ensure trees remain healthy and grow to mature proportions. Healthy mature trees integrate well into the built environment; increase the maturity of the landscape; help provide a natural green and leafy urban environment in which people would want to reside whilst also benefiting local wildlife.
- 4.12 The planting of trees within confined urban environments should consider the use of appropriately designed planting pits specifically engineered to promote tree health and longevity. The rooting environment will need to provide an adequate volume of quality soil for roots to suitably develop by calculating the amount of available soil volumes needed and selecting species whose mature size is compatible with the site. This is an integral component of the planning stage (Lindsey & Bassuk, 1991).
- 4.13 Wherever possible, following discussions with the developer and utility company⁶, common service trenches should be specified to minimise land take associated with underground service provision and facilitation access for future maintenance.
- 4.14 The landscaping scheme should consider the use of both native tree species (for their low maintenance requirements and nature conservation value) and ornamental species (for their contribution to urban design and amenity value). Species choices should be selected on the basis of their suitability for the final site use. Furthermore, during the design process consultation should be made with the Local Planning Authority to obtain information on their tree strategy and incorporate the planting proposals with any local policies and initiatives and/or Biodiversity Action Plans (BAP).

- 4.15 Careful consideration would need to be given to the following: ultimate height and canopy spread, form, habit, density of crown, potential shading effect, colour, water demand, soil type and maintenance requirements in relation to both the built form of the new development and existing properties. Through careful species selection, the landscape scheme shall reduce the risk of trees being removed in the future on the grounds of nuisance. Nuisance can be perceived in a number of ways and vary from person to person however most commonly, within the context of trees, low overhanging branches, excessive shading, seasonal leaf fall and the misinformed perception that trees close to buildings cause damage.
- 4.16 Tree planting should be avoided where they may obstruct overhead power lines or cables. Any underground apparatus should be ducted or otherwise protected at the time of construction to enable trees to be planted without resulting in future conflicts.

Tree Management

- 4.17 The layout of the development is currently reserved for subsequent approval. In the course of a reserved matters application pursuant to layout, a review of the relationship between the layout and the retained trees should be undertaken by a qualified arboriculturalist to assess the existing tree cover and prepare a schedule of tree works.
- 4.18 All retained trees should be subjected to sound arboricultural management as recommended within section 8.8.3 of BS5837 *Post Development Management of Existing Trees*, where there is a potential for public access in order to satisfy the landowner's duty of care. Additionally, inspections annually and following major storms should be carried out by an experienced arboriculturalist or arborist to identify any potential public safety risks and to agree remedial works as required.
- 4.19 All tree works undertaken should comply with British Standard 3998:2010 and should therefore be carried out by skilled tree surgeons. It would be recommended that quotations for such work be obtained from Arboricultural Association Approved Contractors as this is the recognised authority for certification of tree work contractors.
- 4.20 All vegetation and, particularly, woody vegetation proposed for clearance should be removed outside of the bird-breeding season (March - September inclusive) as all birds are protected under the Wildlife and Countryside Act, 1981 (as amended) whilst on the nest. Where this is not possible, vegetation should be checked for the presence of nesting birds prior to removal by an experienced ecologist.

General Design Principles in Relation to Retained Trees

- 4.21 In a subsequent Reserved Matters application following the final layout of the scheme, assessment of the distance of proposed development in relation to the calculated root protection area of retained trees should be made which will inform the final layout.

- 4.22 Ground investigation through the use of pneumatic excavation, such as an Air Spade and digging of trial pits, may be required should there be areas where it is not possible to modify the layout to avoid conflict with retained trees. Ground investigations would aim to determine the actual location of the physical roots without causing them damage in the process. Such an assessment would enable consideration of the practicality and suitability of certain tree friendly construction methods and would better inform decision making for a design.
- 4.23 Further assessment of the impact to actual roots found during the ground investigations can then be made and solutions reached thus, greatly reducing any potential future impacts on retained trees whilst allowing the development to proceed and minimising risks to future tree health. Ultimately the aim would be to reduce conflicts between trees and buildings, and achieve successful tree retention.
- 4.24 The use of no-dig construction methods should be considered prior to decisions being made as to the removal of each tree concerned, where conflicts between trees identified for retention and the layout arise. Such methods of construction and the use of industry led specialist engineering solutions i.e. three dimensional load bearing cellular confinement systems can be used particularly in the case of carriageways, footways and driveways in order to avoid unnecessary losses of trees.
- 4.25 The routing of below ground services should also be considered with regard to the retained trees as part of a subsequent reserved matters application pursuant to layout. As recommended by the guidance given in section 7.7 of BS5837 services, where possible, should not encroach within the Root Protection Areas of retained trees. If below-ground services are proposed within a Root Protection Area, modifications to the alignment of the service route may need to be made in order to minimise adverse effects on root stability and overall tree health.
- 4.26 Consideration may also need to be given to the potential for tree roots of newly planted trees and hedgerows to affect or compromise the future services. As far as feasible, it would be preferable that proposed services near both the existing and any new planting should be ducted for ease of access and maintenance and grouped together to minimise any future disturbance.

5.0 TREE PROTECTION MEASURES

- 5.1 Retained trees will be adequately protected during works ensuring that the calculated root protection area for all retained trees can be appropriately protected through the erection of the requisite tree protection barriers. Measures to protect trees should follow the guidance in BS5837 and will be applied where necessary for the purpose of protecting trees within the site whilst allowing sufficient access for the implementation of the proposed layout. These have been broadly summarised below.

General Information and Recommendations

- 5.2 All trees retained on site will be protected by suitable barriers or ground protection measures around the calculated RPA, crown spread of the tree or other defined constraints of this assessment as detailed by section 6 and 7 of BS5837.

- 5.3 Barriers will be erected prior to commencement of any construction work and before demolition including erection of any temporary structures. Once installed, the area protected by fencing or other barriers will be regarded as a construction exclusion zone. Fencing and barriers will not be removed or altered without prior consultation with the Project Arboriculturalist.
- 5.4 Any trees that are not to be retained as part of the proposals should be felled prior to the erection of protective barriers. Particular attention needs to be given by site contractors to minimise damage or disturbance to retained specimens.
- 5.5 Where it has been agreed, construction access may take place within the root protection area if suitable ground protection measures are in place. This may comprise single scaffold boards over a compressible layer laid onto a geo-textile membrane for pedestrian movements. Vehicular movements over the root protection area will require the calculation of expected loading and the use of proprietary protection systems.
- 5.6 Confirmation that tree protective fencing or other barriers have been set out correctly should be gained prior to the commencement of site activity.

Tree Protection Barriers

- 5.7 Tree protection fencing should be fit for the purpose of excluding any type of construction activity and suitable for the degree and proximity of works to retained trees. Barriers must be maintained to ensure that they remain rigid and complete for the duration of construction activities on site.
- 5.8 In most situations, fencing should comprise typical construction fencing panels attached to scaffold poles driven vertically into the ground. For particular areas where construction activity is anticipated to be of a more intense nature, supporting struts, acting as a brace should be added and fixed into position through the application of metal pins driven into the ground to offer additional resistance against impacts. Where site circumstances and the risk to retained trees do not necessitate the default level of protection an alternative will be specified appropriate to the level / nature of anticipated construction activity. The recommended methods of fencing specifications for this site have been illustrated in Appendix B.
- 5.9 It may be appropriate on some sites to use temporary site offices, hoardings and lower level barrier protection as components of the tree protection barriers. Details of the specific protection barriers for the site can be provided should the application be approved, as part of a site specific Arboricultural Method Statement for a Reserved Matters application and in accordance with the guidance contained within BS5837.

Protection outside the exclusion zone

- 5.10 Once the areas around trees have been protected by the barriers, any works on the remaining site area may be commenced providing activities do not impinge on protected areas.
- 5.11 All weather notices should be attached to the protective fencing to indicate that construction activities are not permitted within the fenced area. The area within the protective barriers will then remain a construction exclusion zone throughout the duration of the construction phase of the proposed development. Protection fencing signs can be provided upon request.
- 5.12 Wide or tall loads etc should not come into contact with retained trees. Banksman should supervise transit of vehicles where they are in close proximity to retained trees.

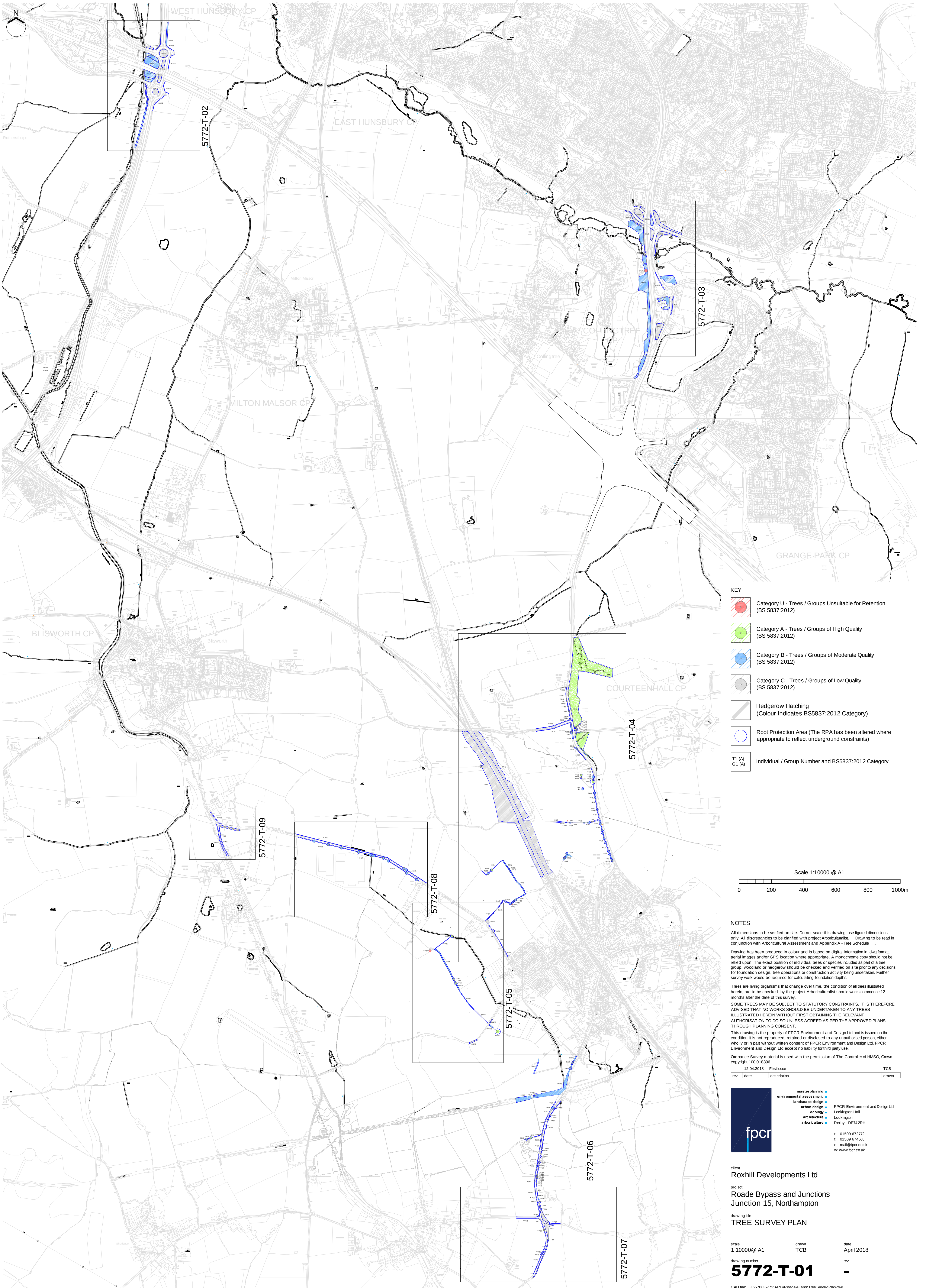
- 5.13 Oil, bitumen, cement or other material that is potentially injurious to trees should not be stacked or discharged within 10m of a tree stem. No concrete should be mixed within 10m of a tree. Allowance should be made for the slope of ground to prevent materials running towards the tree.
- 5.14 No fires will be lit where flames are anticipated to extend to within 5m of tree foliage, branches or trunk, taking into consideration wind direction and size of fire.
- 5.15 Notice boards, telephone cables or other services should not be attached to any part of a retained tree.
- 5.16 Any trees which need to be felled adjacent to or are present within a continuous canopy of retained trees, must be removed with due care (it may be necessary to remove such trees in sections).

Protection of Trees Close to the Site

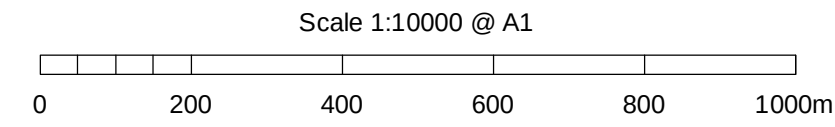
- 5.17 A number of trees were located on the boundaries of the site and therefore the root protection area and crown spread of these trees will need to be protected in the same way as all the retained trees within the site. All trees located outside the boundaries of the assessment site yet within close proximity to works should be adequately protected during the course of the development by barriers or ground protection around the calculated root protection area.
- 5.18 Any trees which are to be retained and whose Root Protection Areas may be affected by the development should be monitored, during and after construction, to identify any alterations in quality with time and to assess and undertake any remedial works required as a result.

Protection for Aerial Parts of Retained Trees

- 5.19 Where it is deemed necessary to operate a wide or tall load, plant bearing booms, jibs and counterweights or other such equipment as part of the construction works it is best advised that appropriate, but limited tree surgery, be carried out beforehand to remove any obstructive branches. Any such equipment would have potential to cause damage to parts of the crown material, i.e. low branches and limbs, of retained trees within the protective barriers. This is termed as *access facilitation pruning* within BS5837. Any such pruning should be undertaken in accordance with a specification prepared by an arboriculturalist.
- 5.20 A pre-commencement site meeting with contractors who are responsible for operating machinery will be required, as described above, to firstly highlight the potential for damage occurring to tree crowns and to ensure that extra care is applied when manoeuvring machinery during such operations within close proximity to retained trees to avoid any contact.
- 5.21 In the event of having caused any branch or limb damage to retained trees it is strongly recommended that suitable tree surgery be carried out, in accordance with British Standard 3998:2010 and in agreement with the Local Planning Authority prior to correcting the damage, upon completion of development.



- KEY
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 -  Category A - Trees / Groups of High Quality (BS 5837:2012)
 -  Category B - Trees / Groups of Moderate Quality (BS 5837:2012)
 -  Category C - Trees / Groups of Low Quality (BS 5837:2012)
 -  Hedgerow Hatching (Colour Indicates BS5837:2012 Category)
 -  Root Protection Area (The RPA has been altered where appropriate to reflect underground constraints)
 -  Individual / Group Number and BS5837:2012 Category



NOTES

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12.04.2018	First Issue		TCB



client
Roxhill Developments Ltd

project
Roade Bypass and Junctions
Junction 15, Northampton

drawing title
TREE SURVEY PLAN

scale
1:10000@ A1

drawn
TCB

date
April 2018

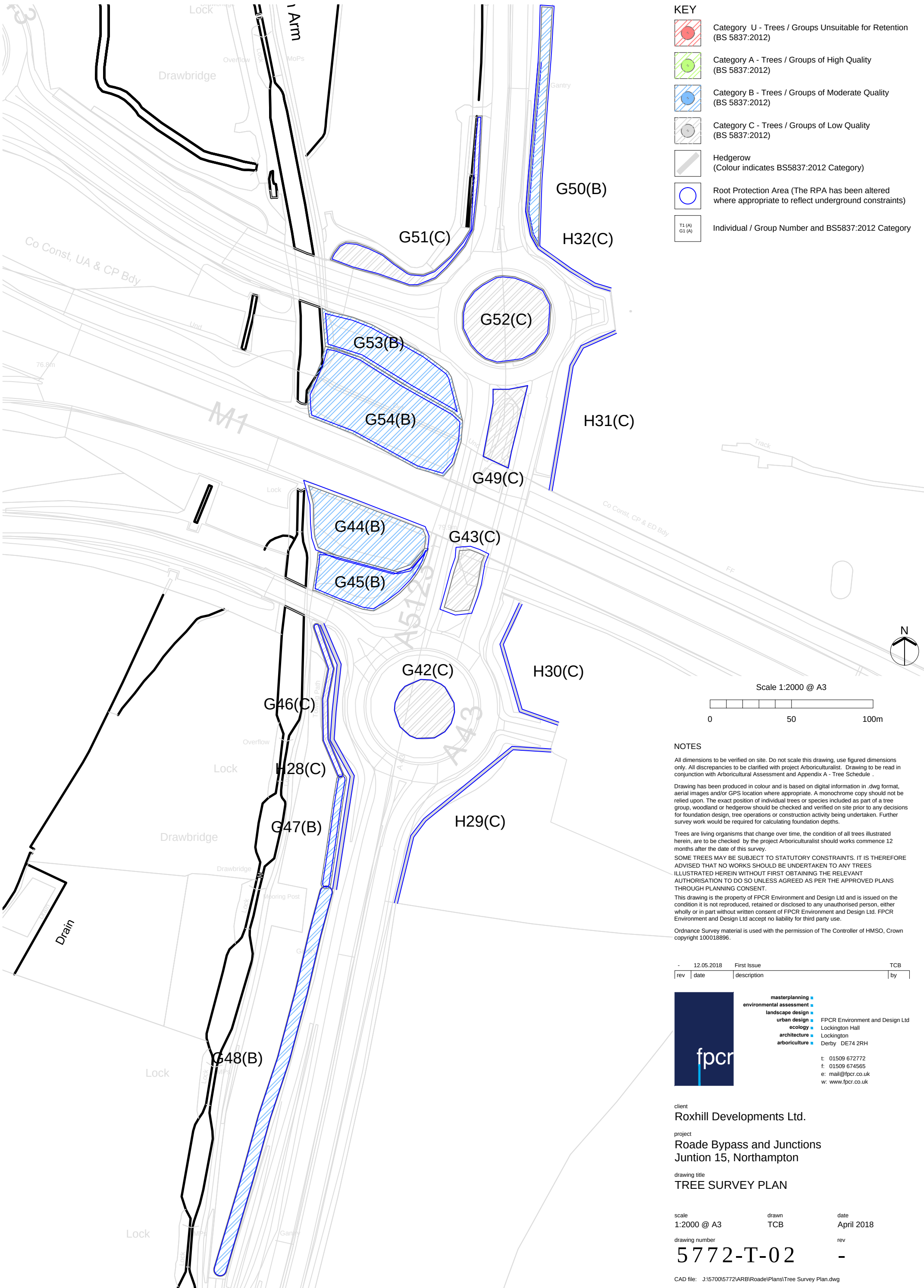
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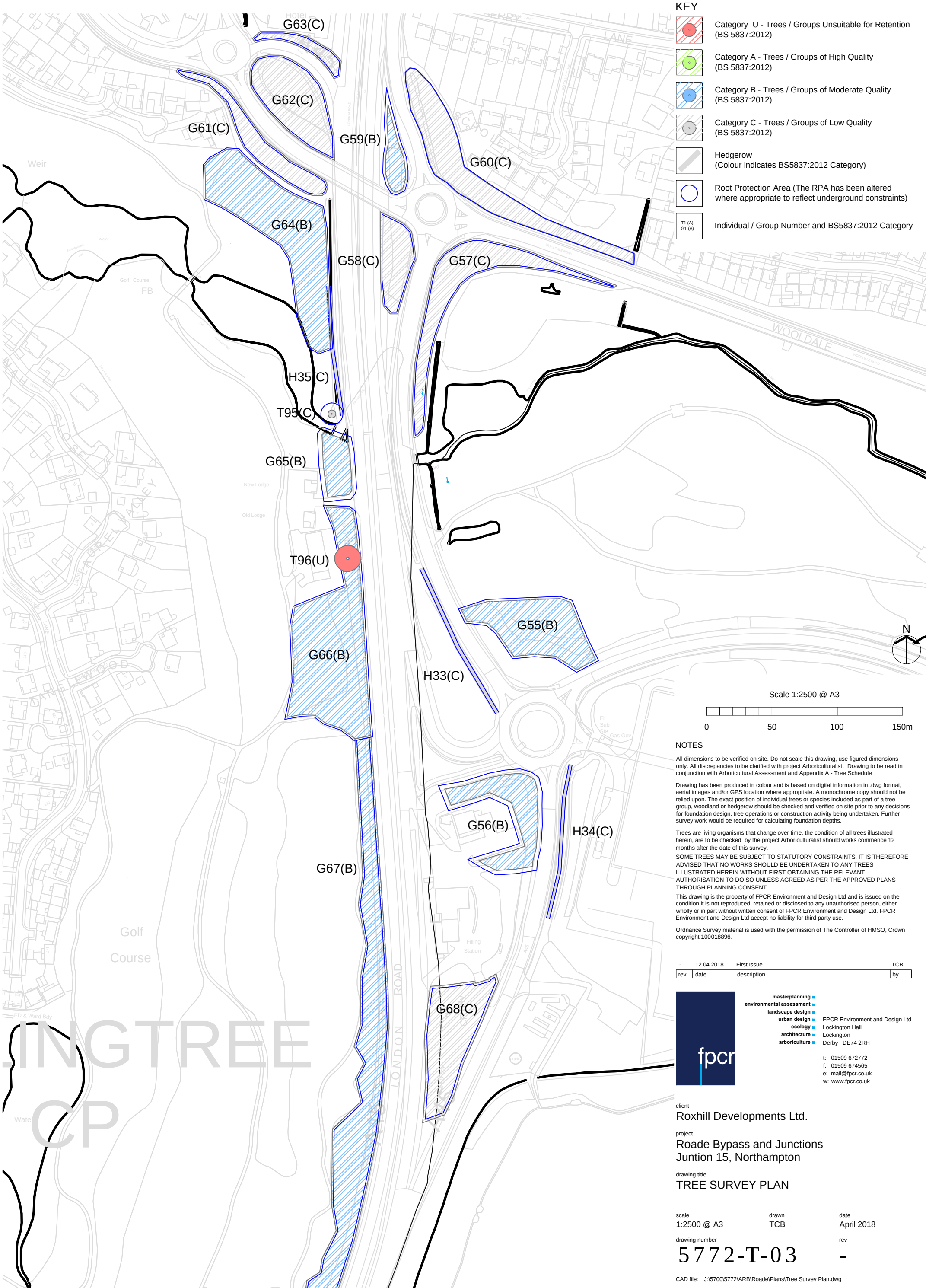
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 - Category C - Trees / Groups of Low Quality (BS 5837:2012)
 - Hedgerow (Colour indicates BS5837:2012 Category)
 - Root Protection Area (The RPA has been altered where appropriate to reflect underground constraints)
 - T1 (A)
G1 (A)
 - Individual / Group Number and BS5837:2012 Category

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client
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project
Roade Bypass and Junctions
Juntion 15, Northampton

drawing title
TREE SURVEY PLAN

scale
1:2500 @ A3

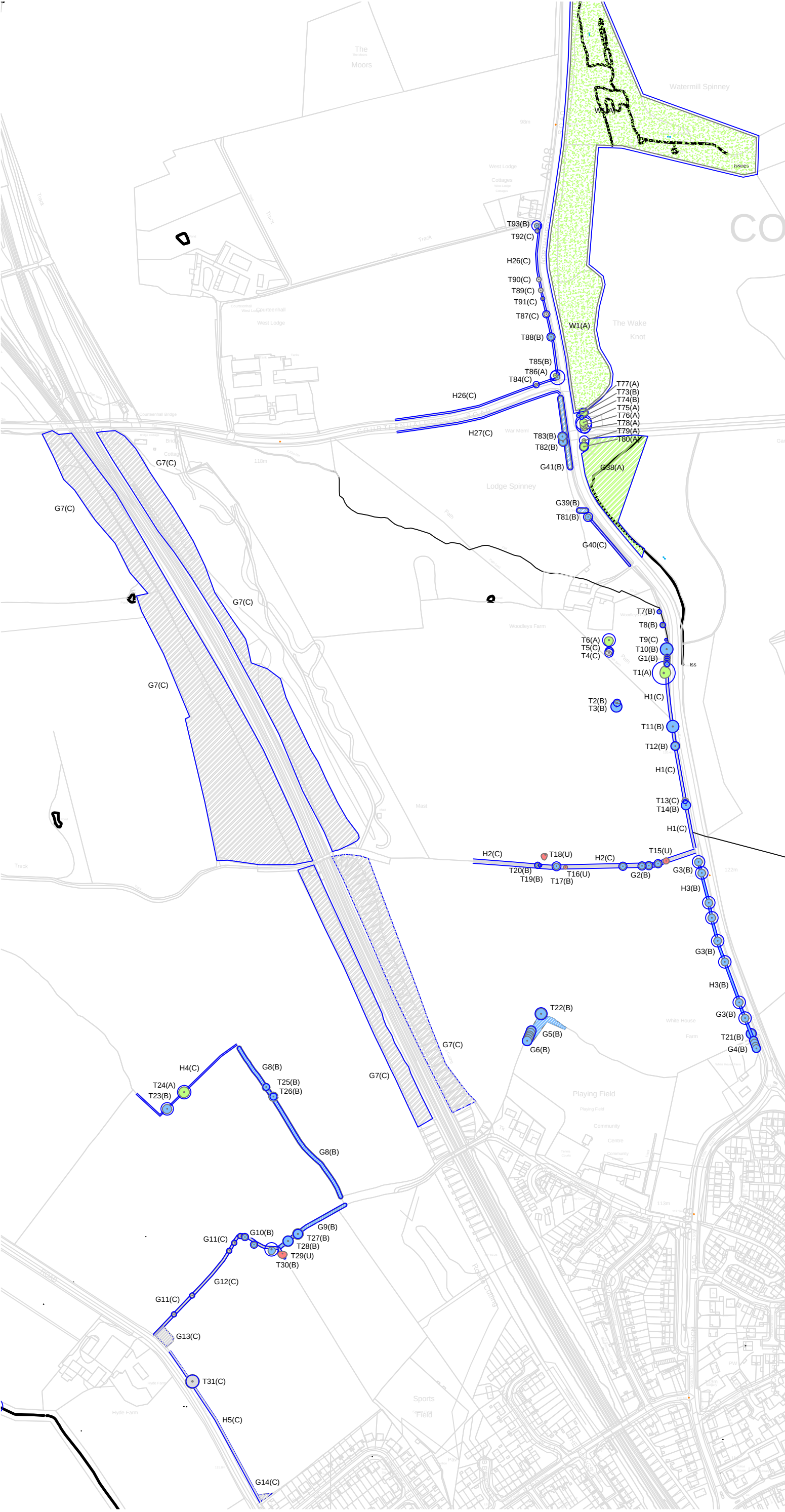
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drawing number
5772-T-03

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KEY

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Road Bypass and Junctions
Junction 15, Northampton

drawing title

TREE SURVEY PLAN

scale

1:5000 @ A3

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TCB

date

April 2018

drawing number

5772-T-04

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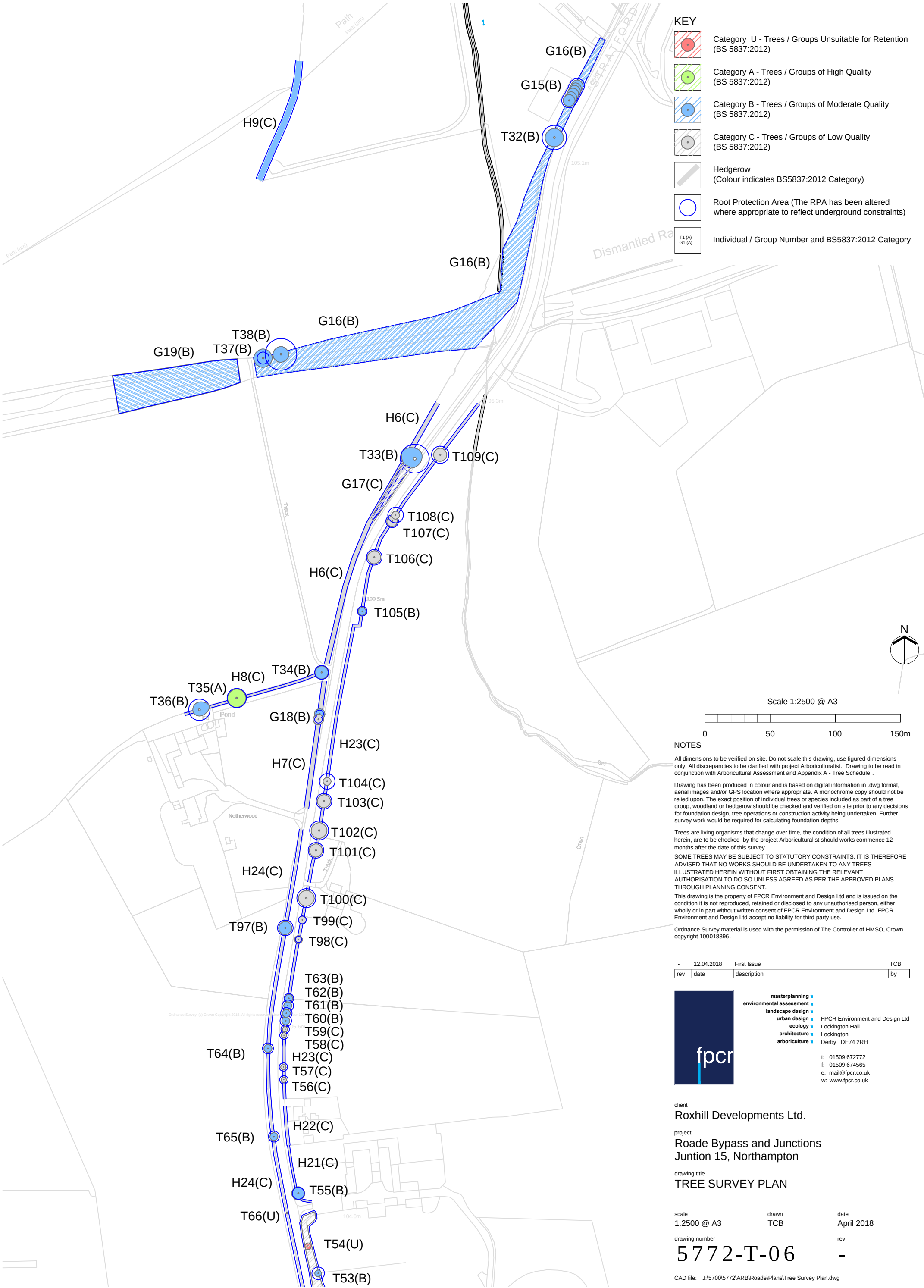
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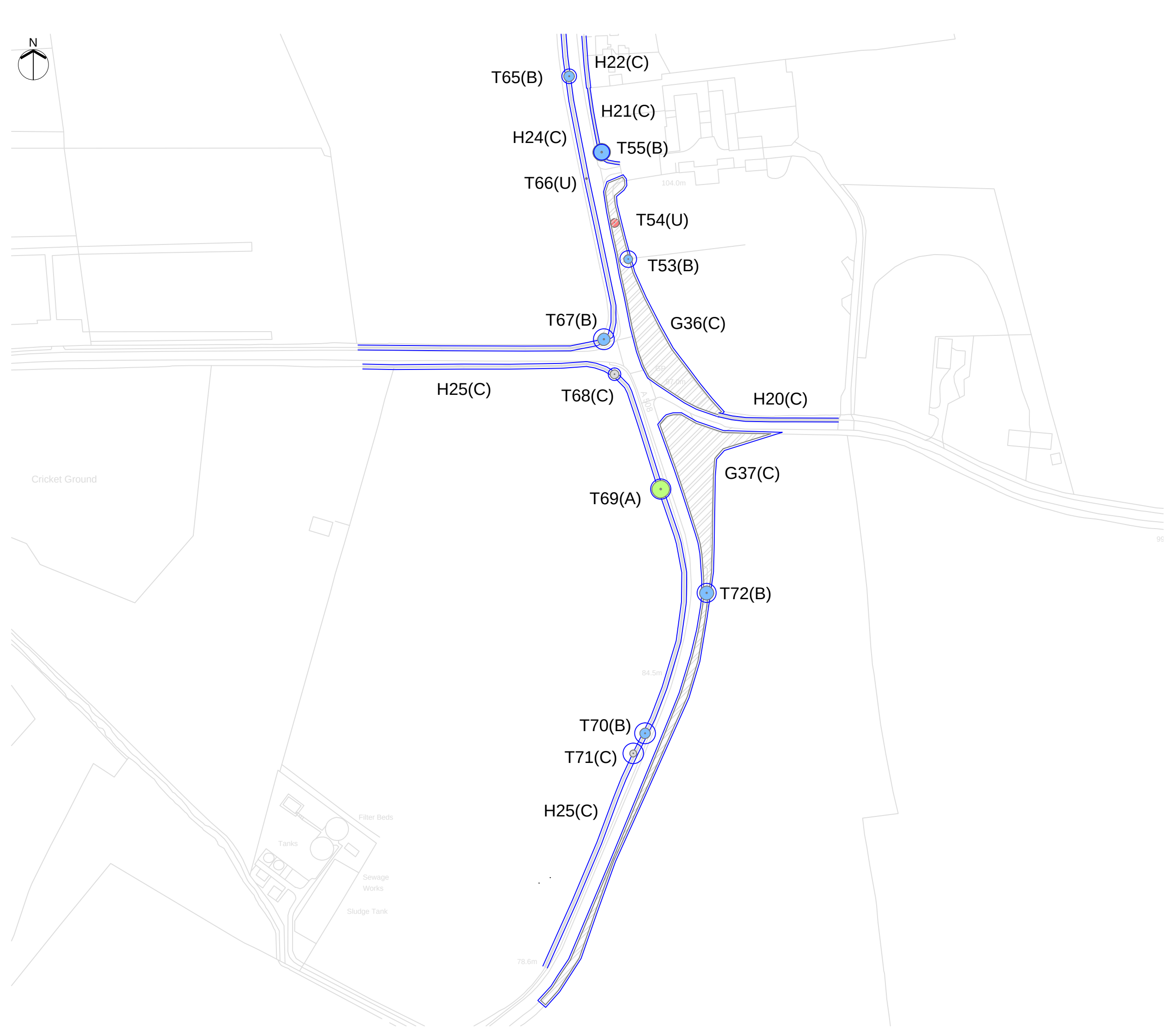
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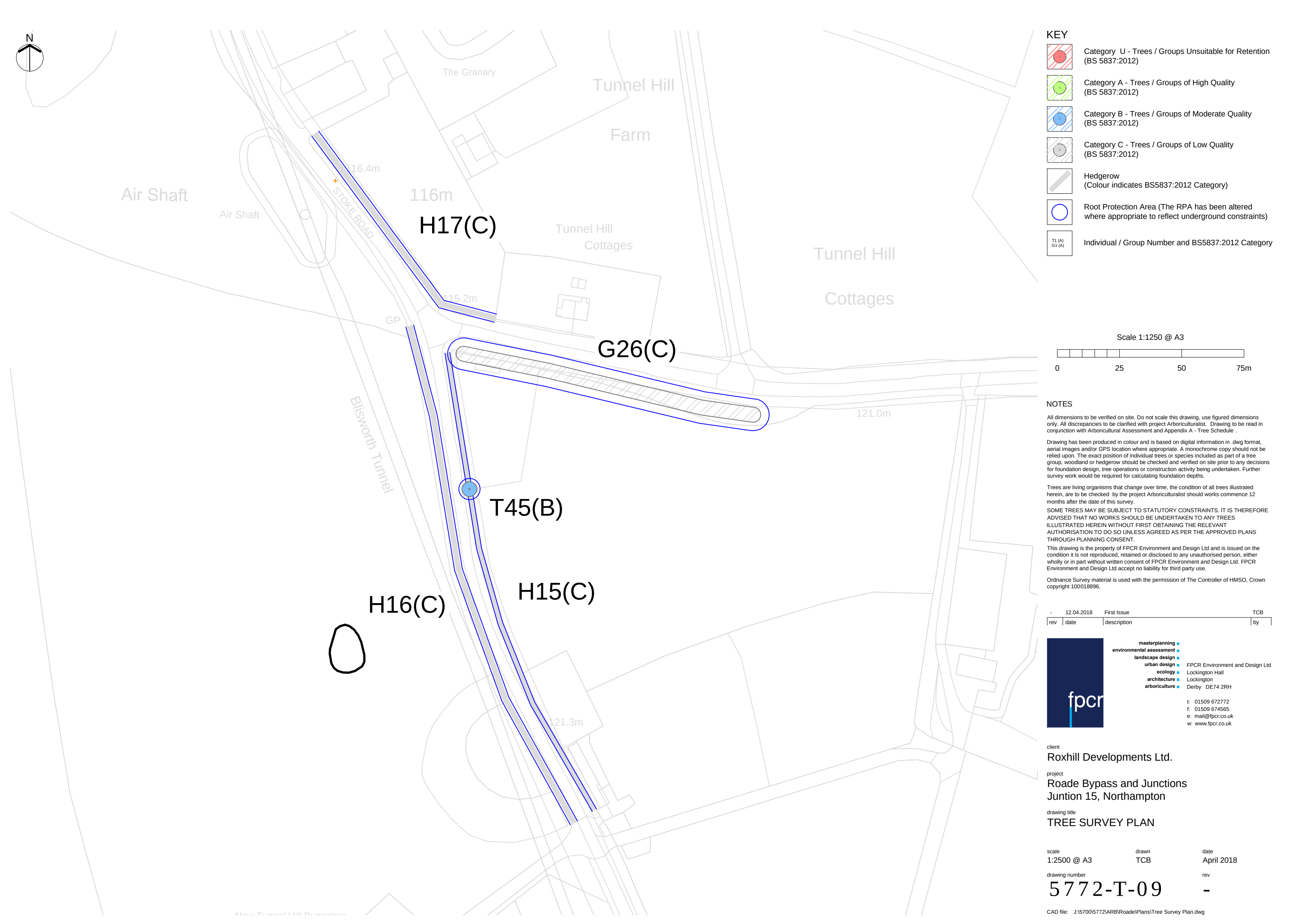
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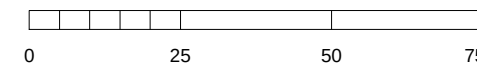
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T1 (A)	
G1 (A)	

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drawing title
TREE SURVEY PLAN

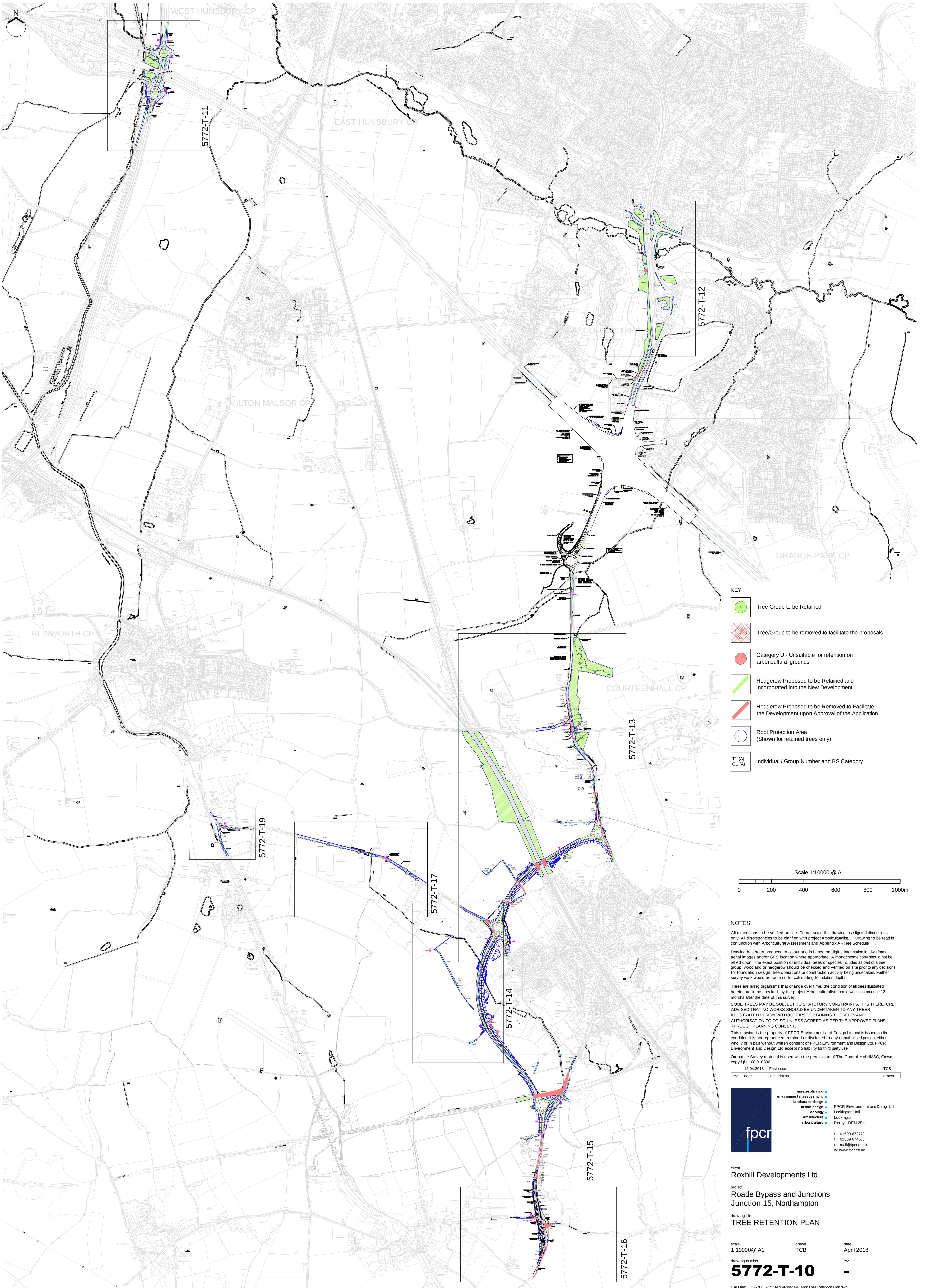
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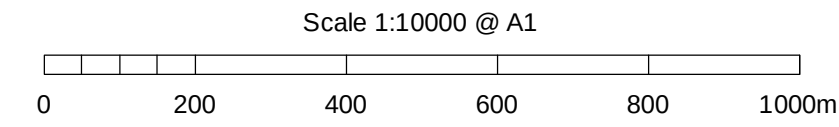
date
April 2018

drawing number
5772-T-09

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- KEY
- Tree Group to be Retained
 - Tree/Group to be removed to facilitate the proposals
 - Category U - Unsuitable for retention on arboricultural grounds
 - Hedgerow Proposed to be Retained and Incorporated into the New Development
 - Hedgerow Proposed to be Removed to Facilitate the Development upon Approval of the Application
 - Root Protection Area (Shown for retained trees only)
 - Individual / Group Number and BS Category



NOTES

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- masterplanning
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- landscape design
- urban design
- ecology
- architecture
- arboriculture

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project
Roade Bypass and Junctions
Junction 15, Northampton

drawing title
TREE RETENTION PLAN

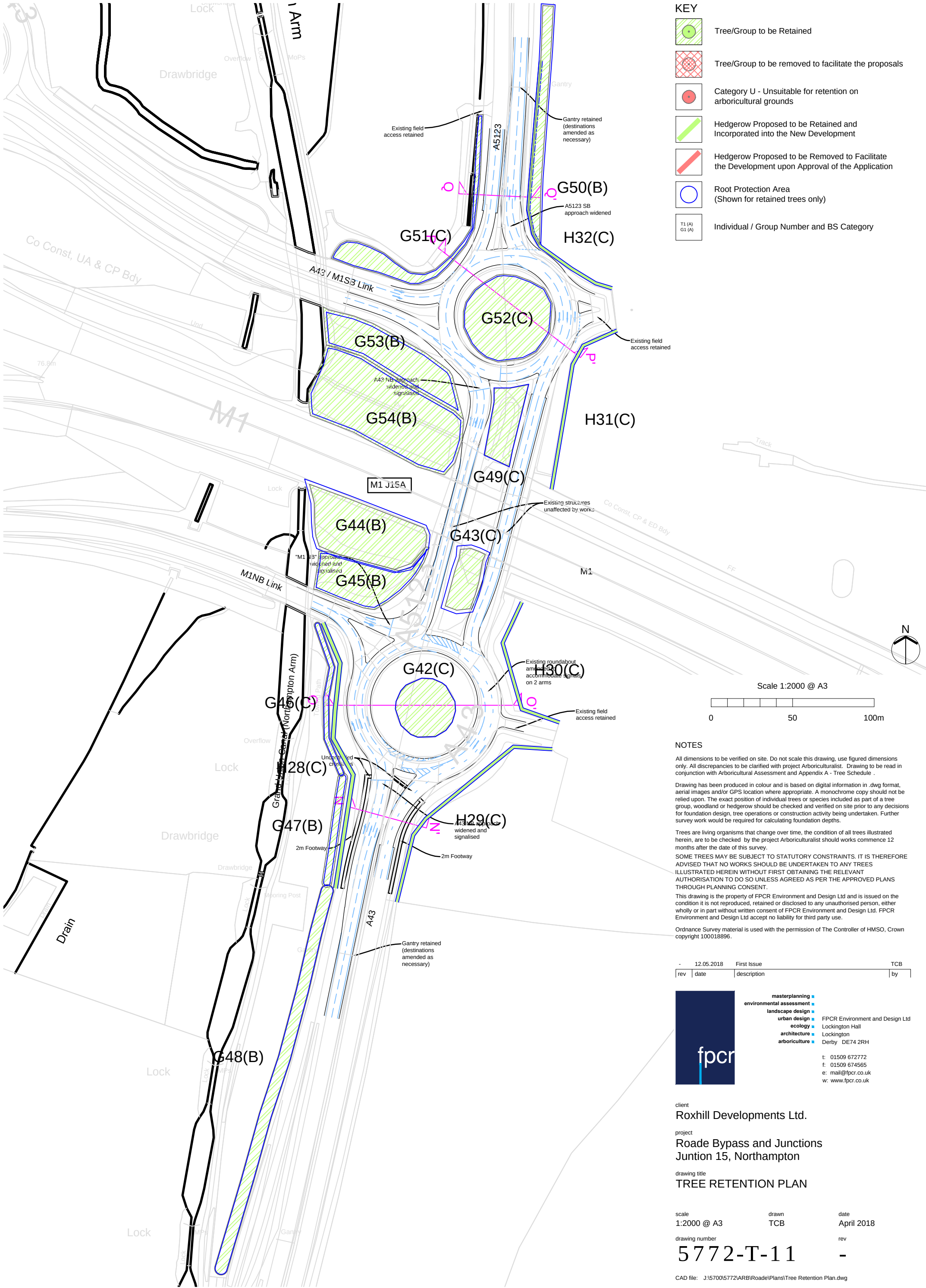
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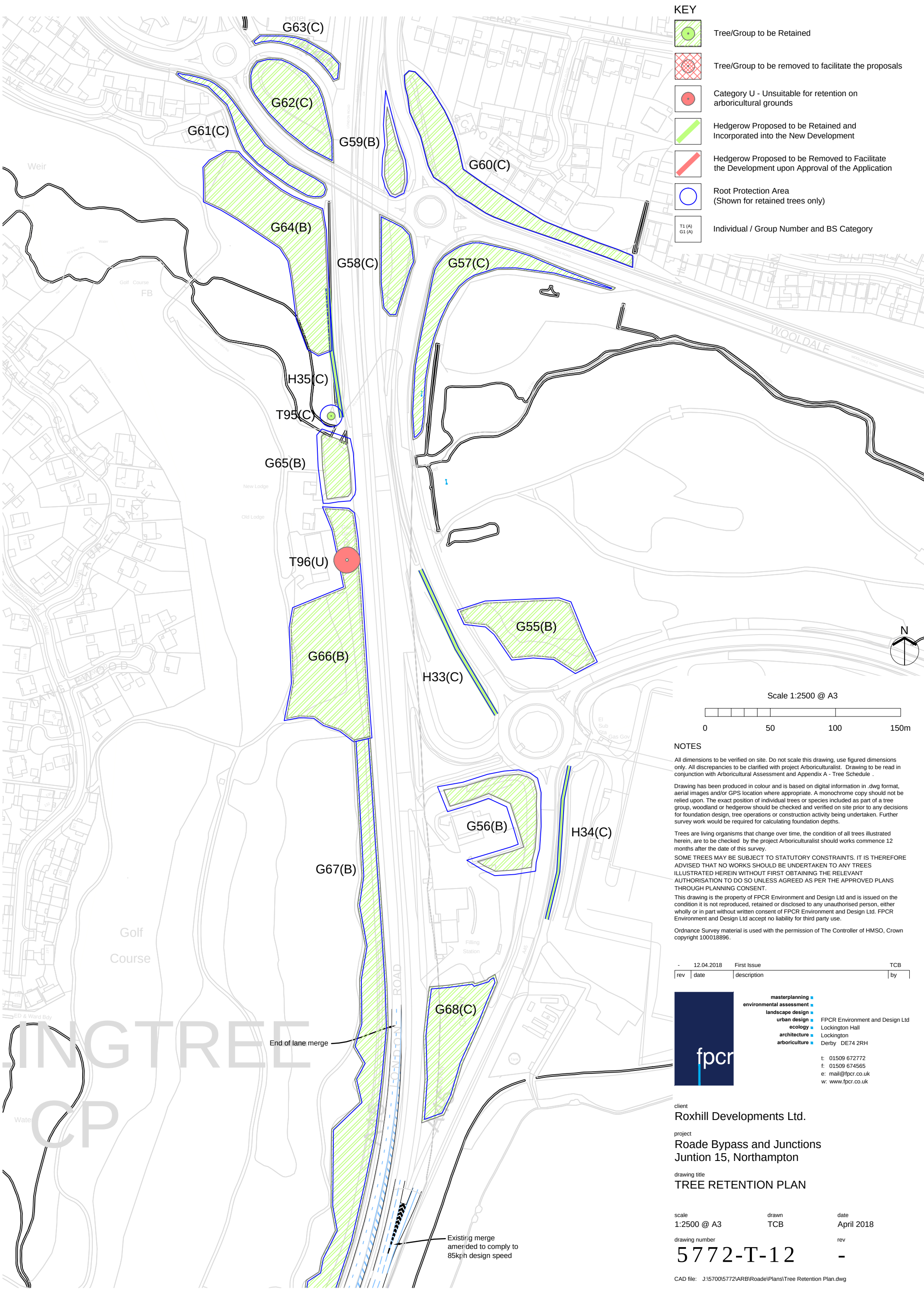
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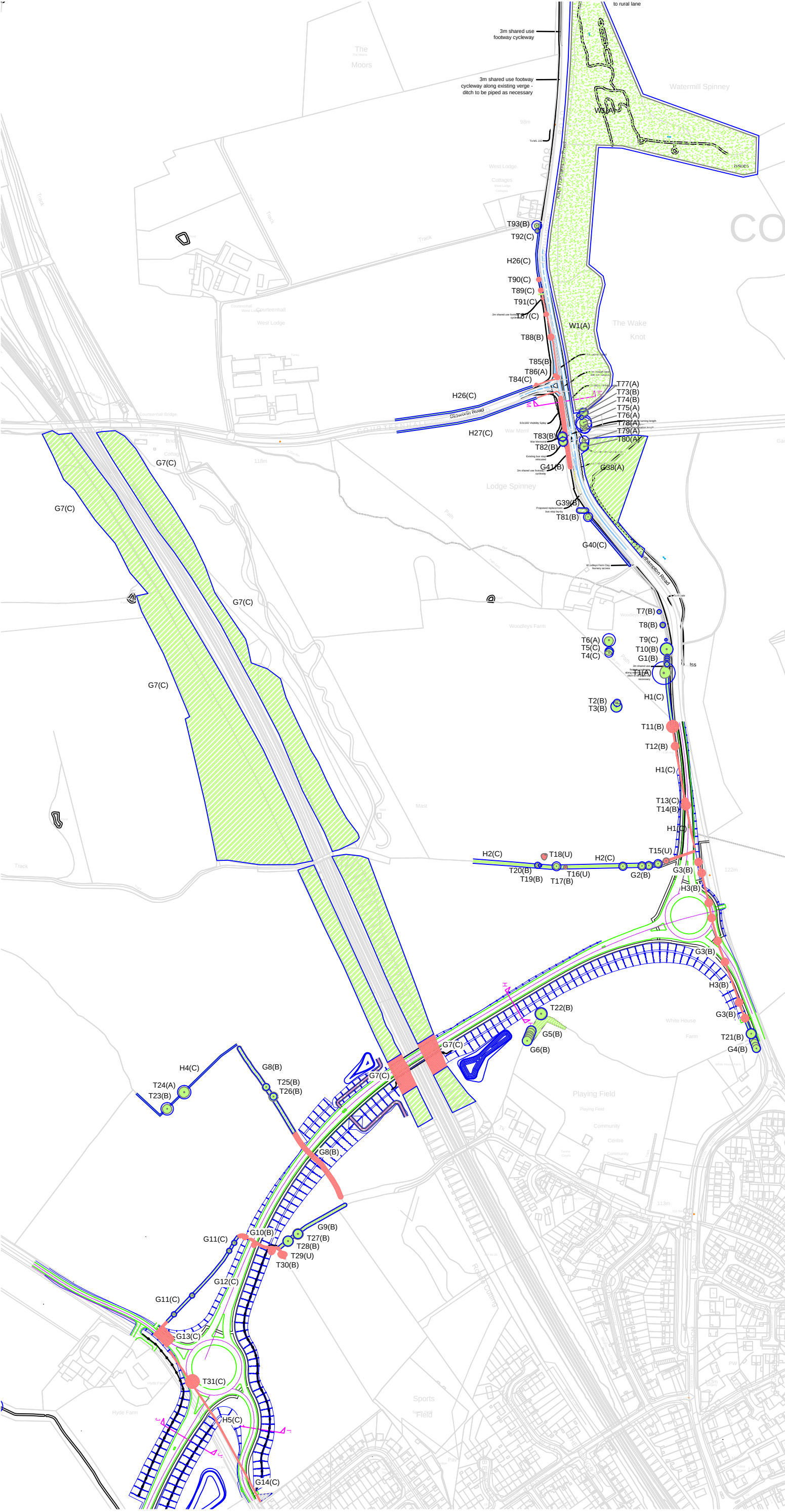
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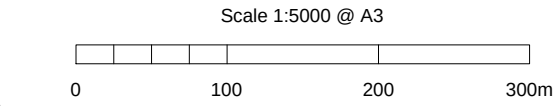
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- KEY**
- Tree/Group to be Retained
 - Tree/Group to be removed to facilitate the proposals
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client
Roxhill Developments Ltd.

project
**Road Bypass and Junctions
Junction 15, Northampton**

drawing title
TREE RETENTION PLAN

scale
1:5000 @ A3

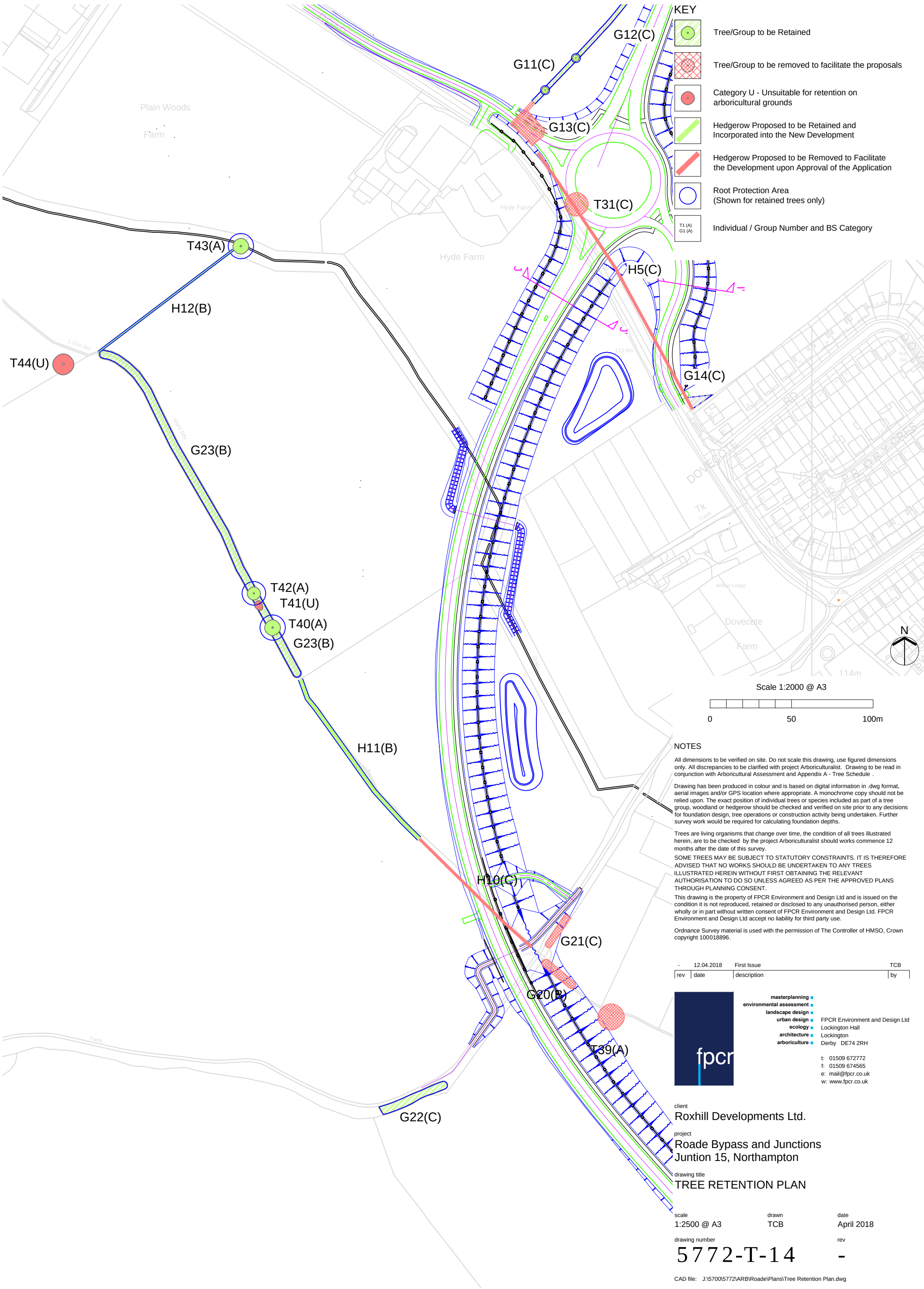
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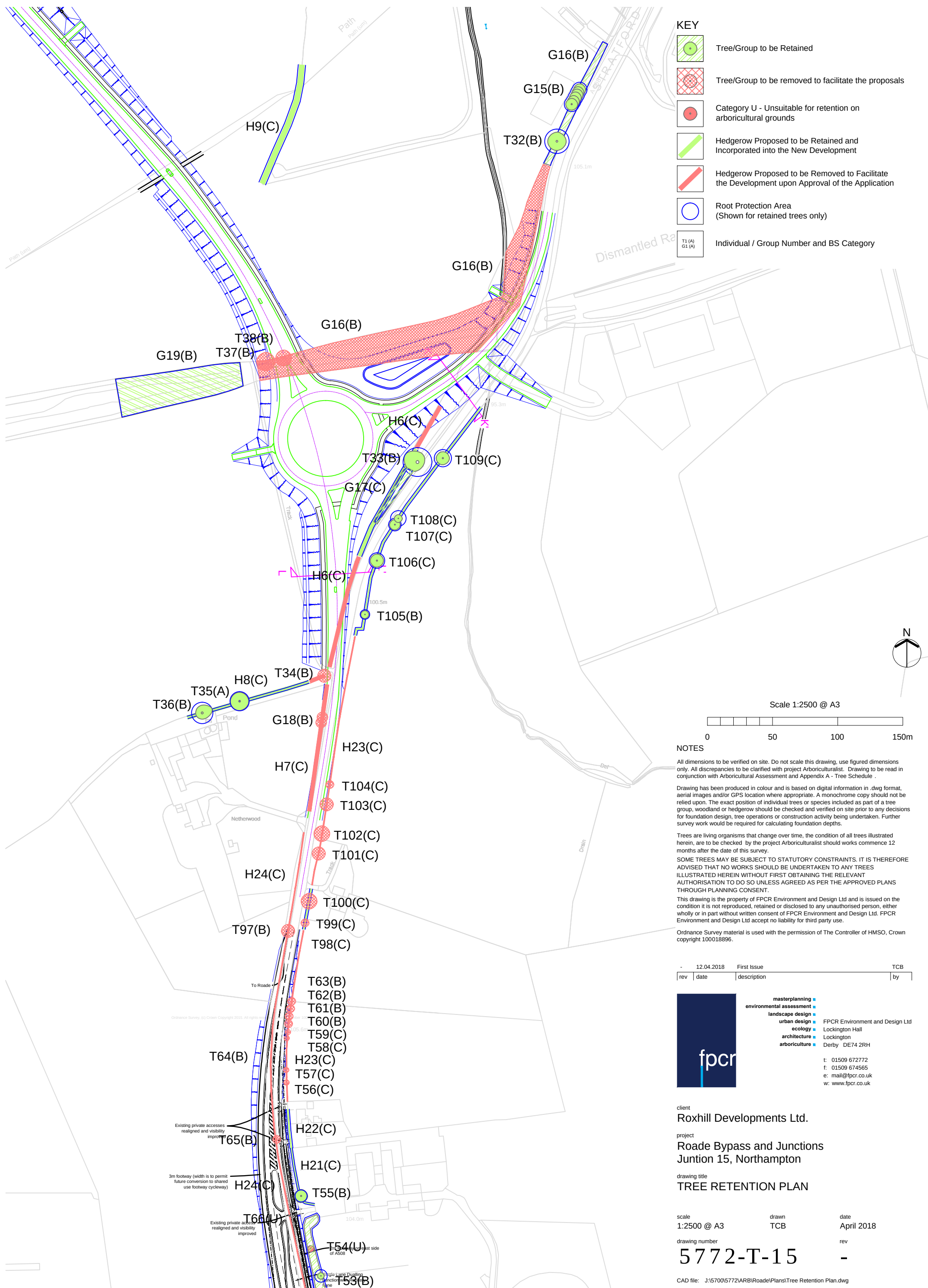
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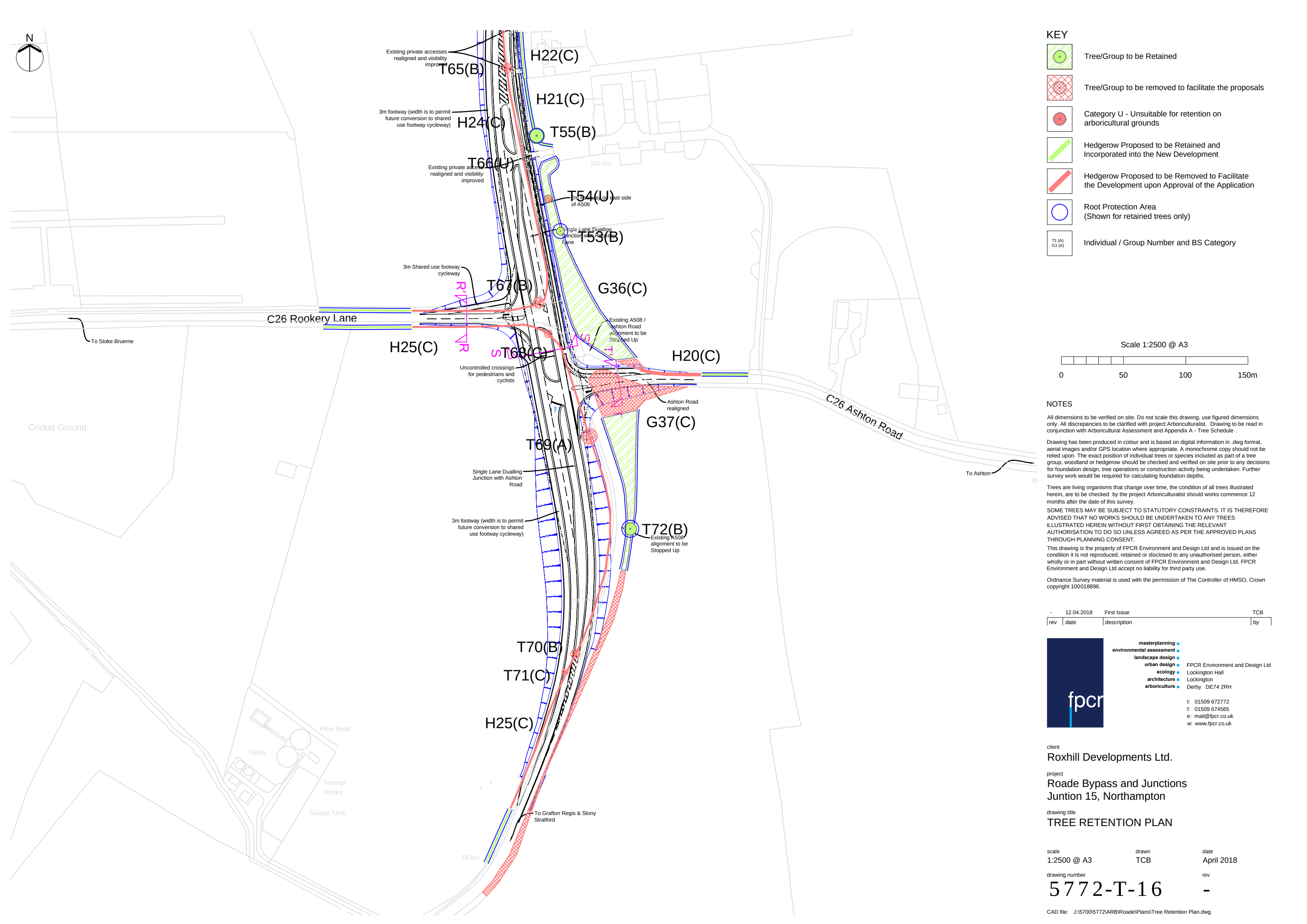
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KEY

Tree/Group to be Retained

Tree/Group to be removed to facilitate the proposals

Category U - Unsuitable for retention on arboricultural grounds

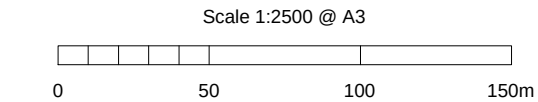
Hedgerow Proposed to be Retained and Incorporated into the New Development

Hedgerow Proposed to be Removed to Facilitate the Development upon Approval of the Application

Root Protection Area
(Shown for retained trees only)

T1 (A)
G1 (A)

Individual / Group Number and BS Category



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client

Roxhill Developments Ltd.

project

Roade Bypass and Junctions
Junction 15, Northampton

drawing title

TREE RETENTION PLAN

scale

1:2500 @ A3

drawn

TCB

date

April 2018

drawing number

5772-T-16

rev

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Root Protection Area
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T1 (A)
G1 (A)

Individual / Group Number and BS Category

Scale 1:2500 @ A3

0

50

100

150m

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drawing title

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scale

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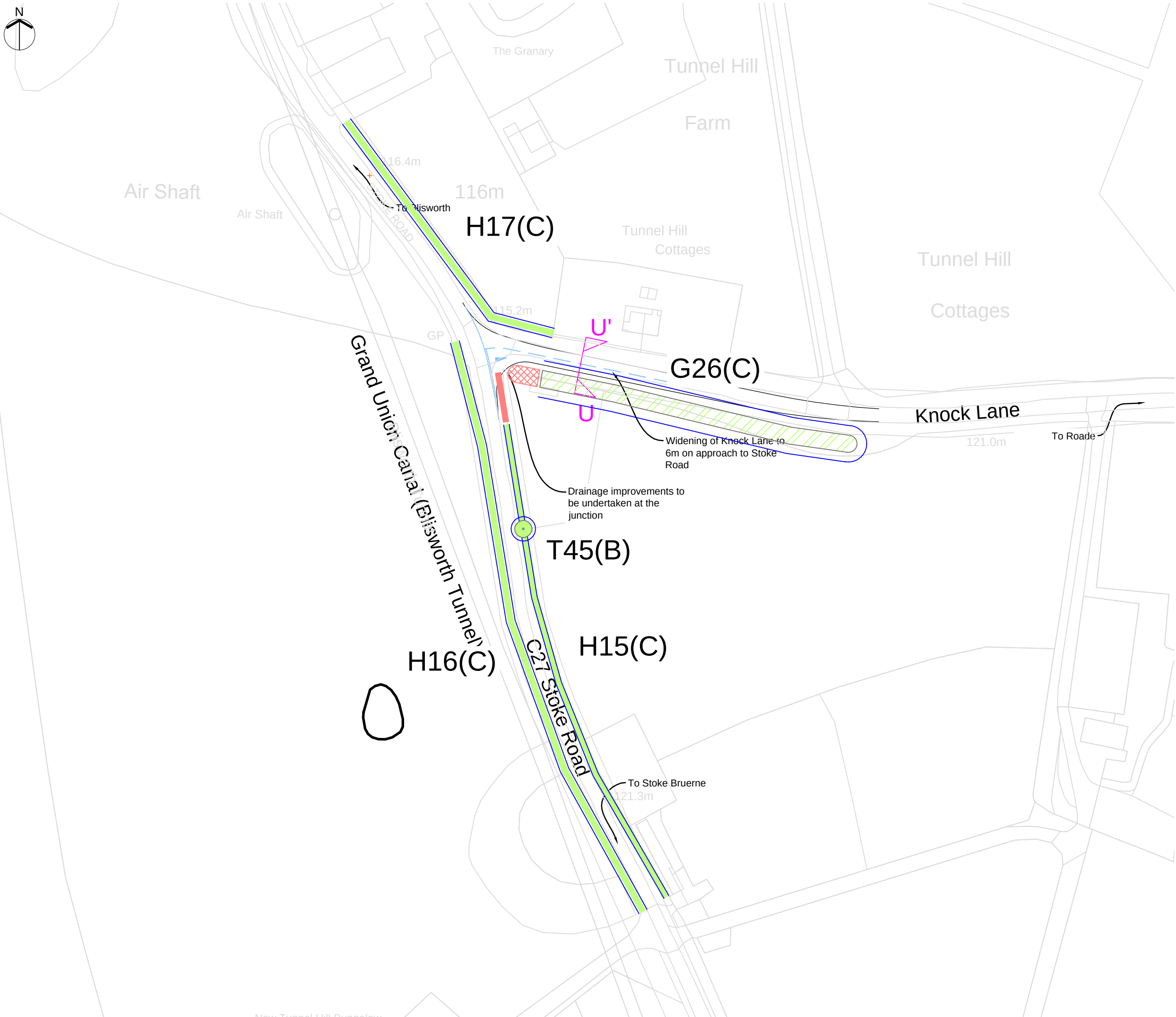
drawing number

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T1 (A)

G1 (A)

Individual / Group Number and BS Category

Scale 1:1250 @ A3

0

25

50

75m

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5772-T-18

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Appendix A - Tree Schedule

Measurements	Age Class	Overall Condition	Root Protection Area (RPA)
Height - Measured using a digital laser clinometer (m)	YNG: Young trees up to ten years of age	G - Good: Trees with only a few minor defects and in good overall health needing little, if any attention	The RPA Radius column provides the extent of an equivalent circle from the centre of the stem (m). The RPA is calculated using the formulae described in paragraph 4.6.1 of British Standard 5837: 2012 and is indicative of the rooting area required for a tree to be successfully retained. Tree roots extend beyond the calculated RPA in many cases and where possible a greater distance should be protected. Where veteran trees have been identified the RPA has been calculated in accordance with Natural England guidance i.e. 15x the stem diameter, uncapped.
Stem Dia. - Diameter measured (mm) in accordance with Annex C of the BS5837	SM: Semi-mature trees less than 1/3 life expectancy	F - Fair: Trees with minor rectifiable defects or in the early stages of stress from which it may recover	
Crown Radius - Measured using a digital laser clinometer radially from the main stem (m)	EM: Early mature trees 1/3 - 2/3 life expectancy	P - Poor: Trees with major structural and/or physiological defects such that it is unlikely the tree will recover in the long term	
Abbreviations est - Estimated stem diameter avg - Average stem diameter for multiple stems upto - Maximum stem diameter of a group	M: Mature trees over 2/3 life expectancy	D - Dead: This could also apply to trees in an advanced state of decline and unlikely to recover	
	OM: Over mature declining or moribund trees of low vigour	The BS category particular consideration has been given to the following The health, vigour and condition of each tree The presence of any structural defects in each tree/group and its future life expectancy The size and form of each tree/group and its suitability within the context of a proposed development The location of each tree relative to existing site features e.g. its screening value or landscape features Age class and life expectancy	
	V: Veteran tree possessing certain attributes relating to veteran trees		

Structural Condition
The following is an example of considerations when inspecting structural condition: • The presence of fungal fruiting bodies around the base of the tree or on the stem, as they could possibly indicate the presence of possible internal decay • Soil cracks and any heaving of the soil around the base • Any abrupt bends in branches and limbs resulting from past pruning • Tight or weak ðshaped forks and co-dominant stems • Hazard beam formations and other such biomechanical related defects (as described by Claus Mattheck, Body Language of Trees HMSO Research for Amenity Trees No. 4 1994) • Cavities as a result of limb losses or past pruning • Broken branches or storm damage • Damage to roots • Basal, stem or branch / limb cavities • Crown die-back or abnormal foliage size and colour

Quality Assessment of BS Category
Category U - Trees 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.
Category A - Trees of high quality with an estimated remaining life expectancy of at least 40 years.
Category B - Trees of moderate quality with an estimated remaining life expectancy of at least 20 years.
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 150mm.
Sub-categories: (i) - Mainly arboricultural value (ii) - Mainly landscape value (iii) - Mainly cultural or conservation value

Tree No	Species	Height	Stem Dia.	Crown Radius	Age Class	Overall Condition	Structural Condition	RPA	RPA Radius	BS5837 Cat
INDIVIDUAL TREES										
T1	English Oak Quercus robur	17	1500	N - 9 S - 7 E - 9 W - 4	OM	G	Major dead wood evident in the crown (>75mm) Minor dead wood evident in the crown (<75mm) Loss of major limb to the south east side at 2m Heartwood exposed Aged future veteran tree	707	Capped at 15m	A (i)
T2	Field Maple Acer campestre	7	400	N - 3 S - 1 E - 4.5 W - 3	M	F	Close cultivation of the soil Minor dead wood evident in the crown (<75mm) Suppressed crown form Exposed buttress roots with some decay evident	72	4.8	B (i)
T3	Ash Fraxinus excelsior	12	610	7	M	F	Branch stubs evident Broken branches evident Close cultivation of the soil Major dead wood evident in the crown (>75mm) Minor dead wood evident in the crown (<75mm) Areas of dead crown through storm conditions and exposed position	168	7.3	B (i)
T4	Ash Fraxinus excelsior	8	470	N - 2.5 S - 2.5 E - 3 W - 5	EM	P	Bark wounds noted Basal cavity observed Branch socket cavities observed Branch stubs evident Broken branches evident Delaminating bark on main stem Dieback of the crown observed Major dead wood evident in the crown (>75mm) Minor dead wood evident in the crown (<75mm)	100	5.6	C (i)
T5	Ash Fraxinus excelsior	10	450	N - 6 S - 3 E - 6 W - 3.5	EM	F	Bark wounds noted Branch socket cavities observed Branch stubs evident Major dead wood evident in the crown (>75mm) Minor dead wood evident in the crown (<75mm)	92	5.4	C (i)
T6	English Oak Quercus robur	14	700	N - 4 S - 8 E - 5 W - 5	M	G	Branch socket cavities observed Branch stubs evident Broken branches evident Low crown form Major dead wood evident in the crown (>75mm) Minor dead wood evident in the crown (<75mm)	222	8.4	A (i)

Tree No	Species	Height	Stem Dia.	Crown Radius	Age Class	Overall Condition	Structural Condition	RPA	RPA Radius	BS5837 Cat
T7	Alder <i>Alnus glutinosa</i>	7	240	2.5	SM	G	Dense undergrowth at the base Multi leadered form	26	2.9	B (i)
T8	Alder <i>Alnus glutinosa</i>	7	300	2.5	SM	G	Dense undergrowth at the base	41	3.6	B (i)
T9	Horse Chestnut <i>Aesculus hippocastanum</i>	4.5	150	1.5	Yng	P	Numerous areas of necrotic bark evident to west side	10	1.8	C (i)
T10	Aspen <i>Populus tremula</i>	19	700	8	M	G	Flail damage evident No major defects were noted	222	8.4	B (i)
T11	Hybrid Black Poplar <i>Populus x canadensis</i>	20	670	8	M	G	No major defects were noted	203	8.0	B (i)
T12	English Oak <i>Quercus robur</i>	13	480	5	EM	F	Dense ivy cover on main stem Flail damage evident Major dead wood evident in the crown (>75mm) Minor dead wood evident in the crown (<75mm)	104	5.8	B (i)
T13	Ash <i>Fraxinus excelsior</i>	14	180 140 80	N - 5 S - 1 E - 4 W - 4	SM	F	Multi stemmed from base Outgrown hedgerow tree	26	2.9	C (i)
T14	Hybrid Black Poplar <i>Populus x canadensis</i>	20	510	6	M	G	Dense undergrowth at the base No major defects were noted	118	6.1	B (i)
T15	Ash <i>Fraxinus excelsior</i>	12	520	4	EM	P	Bark wounds noted Basal cavity observed Delaminating bark on main stem Major dead wood evident in the crown (>75mm) Minor dead wood evident in the crown (<75mm) Failure expected in immediate future Stem physically swaying in the wind	N/A	N/A	U

Tree No	Species	Height	Stem Dia.	Crown Radius	Age Class	Overall Condition	Structural Condition	RPA	RPA Radius	BS5837 Cat
T16	Ash Fraxinus excelsior	6	400	2.5	M	P	Significant decay of the stem from ground level to 3m Imminent failure expected	N/A	N/A	U
T17	Ash Fraxinus excelsior	10	490	4	M	F	Dense ivy cover on main stem Major dead wood evident in the crown (>75mm) Minor dead wood evident in the crown (<75mm)	109	5.9	B (i)
T18	English Oak Quercus robur	6	920	N - 1 S - 7 E - 2 W - 5	OM	D	Close cultivation of the soil Dead standing stem	N/A	N/A	U
T19	English Oak Quercus robur	8	180	2	SM	G	Dense undergrowth at the base Light ivy cover	15	2.2	B (i)
T20	Hybrid Black Poplar Populus x canadensis	10	350	2.5	SM	G	Dense undergrowth at the base Light ivy cover	55	4.2	B (i)
T21	Ash Fraxinus excelsior	13	290 260 270 280	6	EM	F	Broken branches evident Coppiced form Flail damage evident Included bark union Minor dead wood evident in the crown (<75mm) Multi stemmed from base	137	6.6	B (i)
T22	Sycamore Acer pseudoplatanus	17	660	7	M	F	Dense undergrowth at the base Low crown form Woodpecker holes observed Suspected internal cavity at 2.5m through pruning wound	197	7.9	B (i)
T23	English Oak Quercus robur	11	est 680	6	M	G	Broken branches evident Dense undergrowth at the base Flail damage evident No major defects were noted Unable to gain access	209	8.2	B (i)

Tree No	Species	Height	Stem Dia.	Crown Radius	Age Class	Overall Condition	Structural Condition	RPA	RPA Radius	BS5837 Cat
T24	English Oak Quercus robur	18	est 740	7	M	G	Branch stubs evident Broken branches evident Dense undergrowth at the base Major dead wood evident in the crown (>75mm) Minor dead wood evident in the crown (<75mm) Unable to gain access	248	8.9	A (i)
T25	English Oak Quercus robur	9	est 280 240	5	SM	F	Included bark union Twin stemmed from base	62	4.4	B (i)
T26	English Oak Quercus robur	9	340 180	6	EM	F	Branch stubs evident Broken branches evident Minor dead wood evident in the crown (<75mm) Stem has developed from stool of felled tree or immediately adjacent to it	67	4.6	B (i)
T27	Ash Fraxinus excelsior	13	510	7	EM	F	Broken branches evident Light ivy cover Minor dead wood evident in the crown (<75mm)	118	6.1	B (i)
T28	English Oak Quercus robur	8	540	7	EM	F	Dense ivy cover on main stem Dense undergrowth at the base Major dead wood evident in the crown (>75mm) Minor dead wood evident in the crown (<75mm)	132	6.5	B (i)
T29	Field Maple Acer campestre	9	420 340 410	N - 3 S - 6 E - 6 W - 6	M	P	Two large stems have failed to the east side Remaining stool decayed and supporting large amount of weight	N/A	N/A	U
T30	English Oak Quercus robur	10	310 470 370 200 200	N - 2.5 S - 7 E - 5 W - 4	M	G	Light ivy cover Multi stemmed from base No major defects were noted All stems lean to the south	242	8.8	B (i)
T31	Ash Fraxinus excelsior	18	690	9	M	F	Minor dead wood evident in the crown (<75mm) Inonotus brackets at 2m and 3m above ground level to south with swollen stem evident	215	8.3	C (i)

Tree No	Species	Height	Stem Dia.	Crown Radius	Age Class	Overall Condition	Structural Condition	RPA	RPA Radius	BS5837 Cat
T32	Ash Fraxinus excelsior	18	620 380 280	7	M	F	Dense ivy cover on main stem Dense undergrowth at the base Included bark union Multi stemmed from base Hollow base suspected	275	9.4	B (i)
T33	Ash Fraxinus excelsior	20	est 920	N - 7 S - 8 E - 5 W - 11	M	F	Branch socket cavities observed Broken branches evident Dense undergrowth at the base Pruning wounds noted Storm damage present Woodpecker holes observed Low crown to west side Inonotus hispidus brackets	383	11.0	B (i)
T34	Ash Fraxinus excelsior	9	est 10x 140	5	M	F	Coppiced form Dense ivy cover on main stem Dense undergrowth at the base Multi stemmed from base	89	5.3	B (i)
T35	English Oak Quercus robur	15	620	7	M	G	Minor and major dead wood present in the crown Minor ivy present	174	7.4	A (i)
T36	Ash Fraxinus excelsior	11	680	N - 5 S - 4 E - 8 W - 4	M	F	Epicormic growth present on the branches in the crown Broken branches and storm damage evident Minor dead wood	209	8.2	B (i)
T37	Ash Fraxinus excelsior	12	Est 380	7	EM	G	Minor stubs Dense ivy at the base No major defects observed Included bark union at crown break	65	4.6	B (i)
T38	Ash Fraxinus excelsior	16	7 x 380	6	M	G	Multi stemmed from the base Old coppice stool with extensive mature regrowth One stem topped at 3m Included bark union	457	12.1	B (i)
T39	Ash Fraxinus excelsior	18	1170	N - 7 S - 10 E - 7 W - 7	V	P	Major dead wood evident in the crown (>75mm) Open to of the stem to the north side Multiple broken branches and storm damage evident Hollow stem Inonotus Hispidus Veteran tree	968	17.6	A (i) & A(iii)

Tree No	Species	Height	Stem Dia.	Crown Radius	Age Class	Overall Condition	Structural Condition	RPA	RPA Radius	BS5837 Cat
T40	English Oak <i>Quercus robur</i>	10	810	6	M	G	Low crown form Minor dead wood evident in the crown (<75mm) Broken branches present Branch stubs evident Nesting material in the crown	297	9.7	A (i)
T41	Ash <i>Fraxinus excelsior</i>	7	610	N - 2.5 S - 5 E - 2 W - 4	OM	P	Loss of the upper crown with open stem cavity 6m from the ground level Major dead wood evident in the crown (>75mm)	N/A	N/A	U
T42	English Oak <i>Quercus robur</i>	15	750	5	M	G	Major dead wood No major defects observed	254	9.0	A (i)
T43	English Oak <i>Quercus robur</i>	12	810	6	M	G	Typical crown form No major defects observed	297	9.7	A (i)
T44	Ash <i>Fraxinus excelsior</i>	11	700	N - 8 S - 3 E - 3 W - 3	OM	P	Off site by 7m Extensive decay of the stem observed	N/A	N/A	U
T45	Ash <i>Fraxinus excelsior</i>	10	240 210 80 130	3	EM	F	Coppiced form Dense ivy cover on main stem Major dead wood evident in the crown (>75mm) Minor dead wood evident in the crown (<75mm)	57	4.2	B (i)
T46	Weeping Willow <i>Salix x sepulcralis</i> 'Chrycosoma'	7	est 220	3.5	SM	G	Characteristic for species No major defects were noted	22	2.6	C (i)
T47	Elder <i>Sambucus nigra</i>	5	est 110 120	2	EM	F	Characteristic for species No major defects were noted	12	2.0	C (i)
T48	Monterey Cypress <i>Cupressus macrocarpa</i>	20	est 460	3.5	EM	G	Characteristic for species No major defects were noted	96	5.5	B (i)

Tree No	Species	Height	Stem Dia.	Crown Radius	Age Class	Overall Condition	Structural Condition	RPA	RPA Radius	BS5837 Cat
T49	Elder Sambucus nigra	3	avg 120	1.5	EM	F	Characteristic for species No major defects were noted	7	1.4	C (i)
T50	Ash Fraxinus excelsior	13	avg 400	2.5	M	P	Bark wounds noted Branch socket cavities observed Broken branches evident Major dead wood evident in the crown (>75mm) Dying and heavily damaged	N/A	N/A	U
T51	Ash Fraxinus excelsior	13	avg 380	3	M	G	Characteristic for species No major defects were noted	65	4.6	B (i)
T52	English Oak Quercus robur	11	avg 380	3	EM	G	Characteristic for species No major defects were noted	65	4.6	B (i)
T53	Scots Pine Pinus sylvestris	13	est 400	2.5	EM	F	Characteristic for species Established ivy cover No major defects were noted	72	4.8	B (i)
T54	English Oak Quercus robur	12	avg 420	2.5	M	P	Broken branches evident Established ivy cover Major dead wood evident in the crown (>75mm) Partially collapsed to tip of crown	N/A	N/A	U
T55	Ash Fraxinus excelsior	20	est 380	5	M	G	Characteristic for species No major defects were noted	65	4.6	B (i)
T56	Ash Fraxinus excelsior	9	avg 270	2	EM	F	Broken branches evident Characteristic for species Established ivy cover Minor dead wood evident in the crown (<75mm)	33	3.2	C (i)

Tree No	Species	Height	Stem Dia.	Crown Radius	Age Class	Overall Condition	Structural Condition	RPA	RPA Radius	BS5837 Cat
T57	Ash Fraxinus excelsior	9	avg 270	2	EM	F	Broken branches evident Characteristic for species Established ivy cover Minor dead wood evident in the crown (<75mm)	33	3.2	C (i)
T58	Sycamore Acer pseudoplatanus	9	avg 270	2	EM	F	Broken branches evident Characteristic for species Established ivy cover Minor dead wood evident in the crown (<75mm)	33	3.2	C (i)
T59	Ash Fraxinus excelsior	9	avg 270	2	EM	F	Broken branches evident Characteristic for species Established ivy cover Minor dead wood evident in the crown (<75mm)	33	3.2	C (i)
T60	Ash Fraxinus excelsior	15	avg 370	3	M	F	Broken branches evident Characteristic for species Established ivy cover Minor dead wood evident in the crown (<75mm)	62	4.4	B (i)
T61	Ash Fraxinus excelsior	15	avg 370	3	M	F	Broken branches evident Characteristic for species Established ivy cover Minor dead wood evident in the crown (<75mm)	62	4.4	B (i)
T62	Ash Fraxinus excelsior	15	avg 370	3	M	F	Broken branches evident Characteristic for species Established ivy cover Minor dead wood evident in the crown (<75mm)	62	4.4	B (i)
T63	Field Maple Acer campestre	5	avg 300	3	EM	F	Characteristic for species Established ivy cover No major defects were noted	41	3.6	B (ii)

Tree No	Species	Height	Stem Dia.	Crown Radius	Age Class	Overall Condition	Structural Condition	RPA	RPA Radius	BS5837 Cat
T64	Ash Fraxinus excelsior	11	avg 350	3	EM	G	Characteristic for species Established ivy cover No major defects were noted	55	4.2	B (i)
T65	Ash Fraxinus excelsior	11	avg 350	3	EM	G	Characteristic for species Established ivy cover No major defects were noted	55	4.2	B (i)
T66	Ash Fraxinus excelsior	3	avg 600	0.5	OM	D		N/A	N/A	U
T67	Ash Fraxinus excelsior	14	avg 270 240 240 240	3.5	EM	G	Coppiced form No major defects were noted	111	5.9	B (i)
T68	Ash Fraxinus excelsior	11	avg 300	2.5	EM	P	Epicormic growth evident within the crown Stem removed over road Part of old hedgerow	41	3.6	C (i)
T69	Ash Fraxinus excelsior	20	avg 480	5	M	G	Characteristic for species No major defects were noted Pruning wounds noted	104	5.8	A (i)
T70	English Oak Quercus robur	18	avg 500	3	M	F	Characteristic for species Major dead wood evident in the crown (>75mm) Pruning wounds noted	113	6.0	B (i)

Tree No	Species	Height	Stem Dia.	Crown Radius	Age Class	Overall Condition	Structural Condition	RPA	RPA Radius	BS5837 Cat
T71	Ash Fraxinus excelsior	20	avg 490	2	M	F	Epicormic growth evident within the crown Established ivy cover Suspected old limb collapse	109	5.9	C (i)
T72	Ash Fraxinus excelsior	15	est 300 250 240	4	EM	F	Characteristic for species Multi stemmed from base No major defects were noted	95	5.5	B (ii)
T73	Hawthorn Crataegus monogyna	7	avg 220	3	M	G	Characteristic for species No major defects were noted	22	2.6	B (i)
T74	Hawthorn Crataegus monogyna	7	avg 220	3	M	G	Characteristic for species No major defects were noted	22	2.6	B (i)
T75	Beech Fagus sylvatica	28	avg 850	5	M	G	Characteristic for species No major defects were noted Pruning wounds noted	327	10.2	A (i)
T76	Beech Fagus sylvatica	28	avg 850	5	M	G	Characteristic for species No major defects were noted Pruning wounds noted	327	10.2	A (i)
T77	Beech Fagus sylvatica	18	avg 500	5	M	G	Characteristic for species No major defects were noted Pruning wounds noted	113	6.0	A (i)

Tree No	Species	Height	Stem Dia.	Crown Radius	Age Class	Overall Condition	Structural Condition	RPA	RPA Radius	BS5837 Cat
T78	Common Lime <i>Tilia x europaea</i>	22	avg 500	2.5	M	G	Base obscured Characteristic for species Epicormic growth evident within the crown No major defects were noted	113	6.0	A (i)
T79	Common Lime <i>Tilia x europaea</i>	22	avg 500	2.5	M	G	Base obscured Characteristic for species Epicormic growth evident within the crown No major defects were noted	113	6.0	A (i)
T80	Beech <i>Fagus sylvatica</i>	18	avg 500	5	M	G	Characteristic for species No major defects were noted Pruning wounds noted	113	6.0	A (i)
T81	Norway Maple <i>Acer platanoides</i>	21	est 500	4	M	G	Multi leadered form No major defects were noted	113	6.0	B (i)
T82	Common Lime <i>Tilia x europaea</i>	22	avg 500	5	M	G	Characteristic for species Multi leadered form No major defects were noted	113	6.0	B (i)
T83	Common Lime <i>Tilia x europaea</i>	22	avg 500	5	M	G	Characteristic for species Multi leadered form No major defects were noted	113	6.0	B (i)
T84	Norway Maple <i>Acer platanoides</i>	6	avg 340	2	EM	F	Broken branches evident Limited future potential	52	4.1	C (i)

Tree No	Species	Height	Stem Dia.	Crown Radius	Age Class	Overall Condition	Structural Condition	RPA	RPA Radius	BS5837 Cat
T85	Sycamore Acer pseudoplatanus	25	avg 800	3	M	F	Characteristic for species Multi leadered form Pruning wounds noted	290	9.6	B (i)
T86	Common Lime Tilia x europaea	22	avg 500	2.5	M	G	Base obscured Characteristic for species Epicormic growth evident within the crown No major defects were noted	113	6.0	A (i)
T87	Ash Fraxinus excelsior	15	avg 280 280	3	EM	F	Characteristic for species Multi stemmed from base No major defects were noted	71	4.8	C (i)
T88	Hazel Corylus avellana	17	avg 450	4	M	G	Characteristic for species Multi leadered form No major defects were noted	92	5.4	B (i)
T89	Ash Fraxinus excelsior	13	avg 250	3	EM	F	Characteristic for species No major defects were noted	28	3.0	C (i)
T90	Sycamore Acer pseudoplatanus	13	avg 250	3	EM	F	Characteristic for species No major defects were noted	28	3.0	C (i)
T91	Small leaved Lime Tilia cordata	5	avg 220	1.5	SM	F	Characteristic for species No major defects were noted	22	2.6	C (i)
T92	Small leaved Lime Tilia cordata	10	est 250	2	EM	F	Characteristic for species No major defects were noted	28	3.0	C (i)

Tree No	Species	Height	Stem Dia.	Crown Radius	Age Class	Overall Condition	Structural Condition	RPA	RPA Radius	BS5837 Cat
T93	English Oak <i>Quercus robur</i>	10	est 540	3	M	F	Characteristic for species Major dead wood evident in the crown (>75mm)	132	6.5	B (i)
T94	Norway Maple <i>Acer platanoides</i>	14	avg 320	2.5	EM	F	Characteristic for species Multi leadered form	46	3.8	B (i)
T95	Western Red Cedar <i>Thuja plicata</i>	15	est 700	3	M	F	Dense ivy cover on main stem Unable to gain access	222	8.4	C (i)
T96	Horse Chestnut <i>Aesculus hippocastanum</i>	18	est 700	N - 5 S - 5 E - 10 W - 1	M	P	Heavy lean to the east possibly root plate lift	N/A	N/A	U
T97	English Oak <i>Quercus robur</i>	10	est 500	5	M	F	Characteristic for species No major defects were noted	113	6.0	B (i)
T98	Sycamore <i>Acer pseudoplatanus</i>	6	est 200	3	EM	F	Outgrown from hedgerow No major defects were noted	18	2.4	C (i)
T99	Ash <i>Fraxinus excelsior</i>	8	est 250	3	EM	F	Outgrown from hedgerow Dense ivy No major defects were noted	28	3.0	C (i)
T100	Ash <i>Fraxinus excelsior</i>	16	est 600	6	M	F	Base obscured Dense ivy No major defects were noted	163	7.2	C (i)
T101	Ash <i>Fraxinus excelsior</i>	16	est 500	5	M	F	Base obscured Dense ivy Sparse crown	113	6.0	C (i)
T102	Ash <i>Fraxinus excelsior</i>	16	est 600	6	M	F	Base obscured Dense ivy No major defects were noted	163	7.2	C (i)

Tree No	Species	Height	Stem Dia.	Crown Radius	Age Class	Overall Condition	Structural Condition	RPA	RPA Radius	BS5837 Cat
T103	Ash Fraxinus excelsior	14	est 500	5	M	F	Base obscured Dense ivy No major defects were noted	113	6.0	C (i)
T104	Ash Fraxinus excelsior	10	est 500	3	M	P	Base obscured Dense ivy Tree in decline	113	6.0	C (i)
T105	Ash Fraxinus excelsior	6	est 300	3	EM	F	Base obscured No major defects were noted	41	3.6	B (i)
T106	Ash Fraxinus excelsior	10	est 500	5	M	F	Base obscured Dense ivy Sparse crown	113	6.0	C (i)
T107	Ash Fraxinus excelsior	12	est 400	4	EM	P	Base obscured Dense ivy Sparse crown	72	4.8	C (i)
T108	Ash Fraxinus excelsior	10	est 500	3	M	P	Base obscured Dense ivy Tree in decline	113	6.0	C (i)
T109	Ash Fraxinus excelsior	14	est 550	5	M	F	Multi leader form Pruning wounds No major defects were noted	137	6.6	C (i)

Group No	Species	Height	Stem Dia.	Crown Radius	Age Class	Overall Condition	Structural Condition	RPA	RPA Radius	BS5837 Cat
GROUPS OF TREES										
G1	Ash Fraxinus excelsior Blackthorn Prunus spinosa Goat Willow Salix caprea	10	upto 250	4	SM	F	Dense undergrowth at the base Multi stemmed from base Outgrown hedgerow Single stem forms	28	3.0	B (ii)
G2	Hybrid Black Poplar Populus x canadensis	18	upto 440	4	SM / EM	G	Dense undergrowth at the base Light ivy cover Typical crown form	88	5.3	B (ii)
G3	Hybrid Black Poplar Populus x canadensis Aspen Populus tremula White Poplar Populus alba	20	upto 680	5	EM / M	G	Pruning wounds noted Northern specimen has swollen stem from ground level to 2m	209	8.2	B (ii)
G4	Sycamore Acer pseudoplatanus	16	upto 140 330 160 210	5	EM / M	F	Dense ivy cover on main stem Minor dead wood evident in the crown (<75mm) Multi stemmed from base Situated offsite	90	5.3	B (ii)
G5	Beech Fagus sylvatica Blackthorn Prunus spinosa Elder Sambucus nigra Goat Willow Salix caprea Hawthorn Crataegus monogyna	7	460	3	SM / EM	F / G	Branch stubs evident Crossing and rubbing branches Flail damage evident Outgrown hedgerow	96	5.5	B (ii)
G6	Sycamore Acer pseudoplatanus	14	upto 540	6	M	F	Crossing and rubbing branches Dense ivy cover on main stem Multi stemmed and single stem forms	132	6.5	B (ii)

Group No	Species	Height	Stem Dia.	Crown Radius	Age Class	Overall Condition	Structural Condition	RPA	RPA Radius	BS5837 Cat
G7	Mixed Species	6	upto 250	3	SM / EM / M	F	Sporadic self-seeded group of trees Typical crown form Trees located on railway embankment	28	3.0	C (ii)
G8	Ash Fraxinus excelsior English Oak Quercus robur Field Maple Acer campestre Hawthorn Crataegus monogyna English Elm Ulmus procera	8	upto 180	3	SM / EM / M	F	Dead trees noted Old laid forms Outgrown hedgerow	15	2.2	B (ii)
G9	Ash Fraxinus excelsior Blackthorn Prunus spinosa Elder Sambucus nigra Field Maple Acer campestre Hawthorn Crataegus monogyna English Elm Ulmus procera	5	upto 200	2	SM / EM	F	Dense ivy cover on main stem Dense undergrowth at the base Flail damage evident Outgrown hedgerow	18	2.4	B (ii)
G10	Field Maple Acer campestre	7	400	3.5	EM	F	Dense undergrowth at the base Light ivy cover Multi stemmed and single stem forms	72	4.8	B (ii)
G11	Ash Fraxinus excelsior	8	upto 280	2.5	SM / EM	P / F	Multi stemmed and single stem forms Some trees formed from stools with decay Inonotus obliquus noted	35	3.4	C (ii)
G12	Blackthorn Prunus spinosa Field Maple Acer campestre Hawthorn Crataegus monogyna	3	6x 60	1.5	SM / EM	F	Maintained hedgerow Typical crown form	10	1.8	C (ii)

Group No	Species	Height	Stem Dia.	Crown Radius	Age Class	Overall Condition	Structural Condition	RPA	RPA Radius	BS5837 Cat
G13	Blackthorn Prunus spinosa English Elm Ulmus procera	5	upto 140	2.5	Yng / SM	P / F	Sporadic self-seeded group of trees	9	1.7	C (ii)
G14	Ash Fraxinus excelsior Wych Elm Ulmus glabra English Elm Ulmus procera Lawson Cypress Chamaecyparis lawsoniana	8	upto 180	2.5	SM	P / F	Dense undergrowth at the base Light ivy cover Sporadic self-seeded group of trees	15	2.2	C (ii)
G15	Ash Fraxinus excelsior	14	upto 7x 180	4.5	EM	F	Coppiced form Dense ivy cover on main stem Dense undergrowth at the base Multi stemmed from base	103	5.7	B (ii)
G16	Ash Fraxinus excelsior Blackthorn Prunus spinosa Hawthorn Crataegus monogyna Wild Cherry Prunus avium Crab Apple Malus sylvestris English Elm Ulmus procera Hazel Corylus avellana	7	upto 110 120 150	2.5	SM / EM	F	Dead trees noted Dense ivy cover on main stem Dense undergrowth at the base	22	2.7	B (ii)

Group No	Species	Height	Stem Dia.	Crown Radius	Age Class	Overall Condition	Structural Condition	RPA	RPA Radius	BS5837 Cat
G17	Ash Fraxinus excelsior Blackthorn Prunus spinosa Elder Sambucus nigra Crab Apple Malus sylvestris English Elm Ulmus procera	4	upto 70	1.5	Yng / SM	F	Sporadic self-seeded group of trees Typical crown form	2	0.8	C (ii)
G18	Ash Fraxinus excelsior	7	upto 240	4	SM	P / F	Outgrown hedgerow trees Lower quality tree to the south of the group	26	2.9	B (ii)
G19	Elder Sambucus nigra Field Maple Acer campestre Hawthorn Crataegus monogyna	8	upto 180 140	3	SM / EM	F	Outgrown hedgerow Maintained hedgerow Typical crown form	24	2.7	B (ii)
G20	Blackthorn Prunus spinosa English Elm Ulmus procera Hazel Corylus avellana	7	upto 210	3	SM / EM	F	Hazel coppice present among the younger tree buffer	20	2.5	B (ii)
G21	Blackthorn Prunus spinosa Elder Sambucus nigra	5	6 x 60	3	SM / EM	F	Typical self-seeded form	10	1.8	C (ii)
G22	Ash Fraxinus excelsior English Oak Quercus robur Field Maple Acer campestre Hawthorn Crataegus monogyna	8	upto 240	3.5	SM	G	Outgrown hedgerow form	26	2.9	B (ii)

Group No	Species	Height	Stem Dia.	Crown Radius	Age Class	Overall Condition	Structural Condition	RPA	RPA Radius	BS5837 Cat
G23	Ash Fraxinus excelsior English Oak Quercus robur Field Maple Acer campestre Hawthorn Crataegus monogyna	8	upto 240	3.5	SM	G	Outgrown hedgerow form	26	2.9	B (ii)
G24	Ash Fraxinus excelsior English Oak Quercus robur	12	upto 750	7	SM / EM / M	F / G	Base obscured Branch socket cavities observed Branch stubs evident Broken branches evident Light ivy cover Typical crown form	254	9.0	B (ii)
G25	Ash Fraxinus excelsior Elder Sambucus nigra Silver Birch Betula pendula Wild Cherry Prunus avium Balsam Poplar Populus balsamifera Crab Apple Malus sylvestris	12	avg 250	3	EM	F	Characteristic for species Interlocking crowns Sporadic self-seeded group of trees	28	3.0	B (ii)

Group No	Species	Height	Stem Dia.	Crown Radius	Age Class	Overall Condition	Structural Condition	RPA	RPA Radius	BS5837 Cat
G26	Ash Fraxinus excelsior Blackthorn Prunus spinosa Elder Sambucus nigra Field Maple Acer campestre Hazel Corylus avellana	5	upto 280	3	SM / EM / M	F	Flail damage evident Light ivy cover Outgrown hedgerow Typical crown form	35	3.4	C (ii)
G27	Ash Fraxinus excelsior Elder Sambucus nigra Hawthorn Crataegus monogyna Sycamore Acer pseudoplatanus Wild Cherry Prunus avium	7	avg 150	2	SM	P / F	Broken branches evident Interlocking crowns Sporadic self-seeded group of trees	10	1.8	C (ii)
G28	Ash Fraxinus excelsior Blackthorn Prunus spinosa English Oak Quercus robur Hawthorn Crataegus monogyna Wych Elm Ulmus glabra	4	avg 120	2	SM	F	No major defects were noted Sporadic self-seeded group of trees	7	1.4	C (ii)

Group No	Species	Height	Stem Dia.	Crown Radius	Age Class	Overall Condition	Structural Condition	RPA	RPA Radius	BS5837 Cat
G29	Ash Fraxinus excelsior Blackthorn Prunus spinosa English Oak Quercus robur Hawthorn Crataegus monogyna Wych Elm Ulmus glabra	4	avg 120	2	SM	F	No major defects were noted Sporadic self-seeded group of trees	7	1.4	C (ii)
G30	Ash Fraxinus excelsior Norway Maple Acer platanoides	8	avg 270	3	EM	F	Characteristic for species Interlocking crowns Sporadic self-seeded group of trees	33	3.2	B (ii)
G31	Ash Fraxinus excelsior Elder Sambucus nigra English Oak Quercus robur Hawthorn Crataegus monogyna Norway Maple Acer platanoides	8	avg 250	1.5	SM / EM	F	Characteristic for species No major defects were noted Sporadic self-seeded group of trees	28	3.0	B (ii)

Group No	Species	Height	Stem Dia.	Crown Radius	Age Class	Overall Condition	Structural Condition	RPA	RPA Radius	BS5837 Cat
G32	Ash Fraxinus excelsior Elder Sambucus nigra English Oak Quercus robur Hawthorn Crataegus monogyna Norway Maple Acer platanoides	8	avg 250	2.5	SM / EM	F	Characteristic for species No major defects were noted Sporadic self-seeded group of trees	28	3.0	B (ii)
G33	Blackthorn Prunus spinosa Hawthorn Crataegus monogyna Wych Elm Ulmus glabra Prunus sp.	3	avg 110	1	SM	F	Characteristic for species No major defects were noted Very. Sporadic	5	1.3	C (ii)
G34	Ash Fraxinus excelsior Wych Elm Ulmus glabra	11	avg 270	2.5	EM	G	Characteristic for species No major defects were noted	33	3.2	B (ii)
G35	Wych Elm Ulmus glabra	4	avg 120	1.5	SM	F	Characteristic for species Sporadic self-seeded group of trees	7	1.4	C (ii)

Group No	Species	Height	Stem Dia.	Crown Radius	Age Class	Overall Condition	Structural Condition	RPA	RPA Radius	BS5837 Cat
G36	Ash Fraxinus excelsior Elder Sambucus nigra Goat Willow Salix caprea Hawthorn Crataegus monogyna Wild Cherry Prunus avium Wych Elm Ulmus glabra	10	avg 260	2	SM / EM / M	P / F / G	Characteristic for species Dead trees noted Interlocking crowns Minor dead wood evident in the crown (<75mm)	31	3.1	C (ii)
G37	Ash Fraxinus excelsior Blackthorn Prunus spinosa Elder Sambucus nigra Hawthorn Crataegus monogyna Wych Elm Ulmus glabra	5	est 200	1.5	SM	P / F	Dead trees noted Established ivy cover	18	2.4	C (ii)
G38	Beech Fagus sylvatica Elder Sambucus nigra Hawthorn Crataegus monogyna Wild Cherry Prunus avium Wych Elm Ulmus glabra Lawson Cypress Chamaecyparis lawsoniana	13	avg 250	3	EM	G	Characteristic for species No major defects were noted Sporadic self-seeded group of trees Part of a large woodland	28	3.0	A (ii)

Group No	Species	Height	Stem Dia.	Crown Radius	Age Class	Overall Condition	Structural Condition	RPA	RPA Radius	BS5837 Cat
G39	Lawson Cypress Chamaecyparis lawsoniana	20	est 300	2.5	M	G	Characteristic for species Interlocking crowns No major defects were noted	41	3.6	B (ii)
G40	Ash Fraxinus excelsior Elder Sambucus nigra Hawthorn Crataegus monogyna Norway Maple Acer platanoides Wych Elm Ulmus glabra	4	avg 100	1.5	EM	P / F	Characteristic for species Sporadic self-seeded group of trees	5	1.2	C (ii)
G41	Small leaved Lime Tilia cordata	11	avg 320	2.5	EM	G	Characteristic for species No major defects were noted	46	3.8	B (ii)
G42	Field Maple Acer campestre Hawthorn Crataegus monogyna Hybrid Black Poplar Populus x canadensis Silver Birch Betula pendula Wild Cherry Prunus avium Hazel Corylus avellana Holly Ilex aquifolium Dogwood Cornus sanguinea	6	upto 180	2	Yng / SM	F	Densely planted group with suppressed forms	15	2.2	C (ii)

Group No	Species	Height	Stem Dia.	Crown Radius	Age Class	Overall Condition	Structural Condition	RPA	RPA Radius	BS5837 Cat
G43	Silver Birch Betula pendula Wild Cherry Prunus avium	7	upto 180	2	SM	F	No major defects were noted Typical crown form	15	2.2	C (ii)
G44	Crack Willow Salix fragilis Hybrid Black Poplar Populus x canadensis Dogwood Cornus sanguinea	18	upto 450	7	M	F / G	Branch stubs evident Broken branches evident Typical crown form On embankment of M1	92	5.4	B (ii)
G45	Ash Fraxinus excelsior Goat Willow Salix caprea Silver Birch Betula pendula Dogwood Cornus sanguinea	8	upto 150	3	SM	F	Branch stubs evident Broken branches evident Typical crown form	10	1.8	B (ii)
G46	Field Maple Acer campestre Wild Cherry Prunus avium Hazel Corylus avellana	4	upto 120	2	Yng	F	Broken branches evident Dense undergrowth at the base Scrub forms	7	1.4	C (ii)
G47	Ash Fraxinus excelsior Silver Birch Betula pendula	9	upto 170	3	SM	G	Standing in the boundary hedgerow	13	2.0	B (ii)
G48	Elder Sambucus nigra Hawthorn Crataegus monogyna	7	upto 9x 100	4	M	F	Spoil at bases from excavation adjacent in the past	41	3.6	B (ii)

Group No	Species	Height	Stem Dia.	Crown Radius	Age Class	Overall Condition	Structural Condition	RPA	RPA Radius	BS5837 Cat
G49	Field Maple Acer campestre Hawthorn Crataegus monogyna Silver Birch Betula pendula Wild Cherry Prunus avium	7	upto 180	2	SM	F	No major defects were noted Typical crown form	15	2.2	C (ii)
G50	Ash Fraxinus excelsior English Oak Quercus robur Field Maple Acer campestre	9	upto 150	2.5	SM	F / G	Branch stubs evident Broken branches evident Included bark union Typical crown form	10	1.8	B (ii)
G51	Ash Fraxinus excelsior English Oak Quercus robur Wild Cherry Prunus avium Hazel Corylus avellana Scots Pine Pinus sylvestris	6	upto 100	2	Yng	F / G	No major defects were noted Typical crown form	5	1.2	C (ii)

Group No	Species	Height	Stem Dia.	Crown Radius	Age Class	Overall Condition	Structural Condition	RPA	RPA Radius	BS5837 Cat
G52	Field Maple Acer campestre Hawthorn Crataegus monogyna Hybrid Black Poplar Populus x canadensis Silver Birch Betula pendula Wild Cherry Prunus avium Hazel Corylus avellana Holly Ilex aquifolium Dogwood Cornus sanguinea	6	upto 100	2	Yng / SM	F	Densely planted group with suppressed forms	5	1.2	C (ii)
G53	Crack Willow Salix fragilis Hazel Corylus avellana Dogwood Cornus sanguinea	8	upto 180	4	SM / M	F	Multi stemmed from base Typical crown form Densely planted group	15	2.2	B (ii)
G54	Ash Fraxinus excelsior Crack Willow Salix fragilis Hybrid Black Poplar Populus x canadensis	18	upto 280	5	EM / M	F / G	Trees positioned on embankment of M1	35	3.4	B (ii)
G55	Blackthorn Prunus spinosa Field Maple Acer campestre Goat Willow Salix caprea Hybrid Black Poplar Populus x canadensis Silver Birch Betula pendula	8	upto 140	2.5	SM	G	Buffer planting Thinning required	9	1.7	B (ii)

Group No	Species	Height	Stem Dia.	Crown Radius	Age Class	Overall Condition	Structural Condition	RPA	RPA Radius	BS5837 Cat
G56	Dawyck beech <i>Fagus sylvatica</i> 'Dawyck'	6	210	3	SM	G	No major defects were noted Typical crown form	20	2.5	B (ii)
G57	Field Maple <i>Acer campestre</i> Goat Willow <i>Salix caprea</i> Hybrid Black Poplar <i>Populus x canadensis</i> Silver Birch <i>Betula pendula</i> Alder <i>Alnus glutinosa</i> Dawyck beech <i>Fagus sylvatica</i> 'Dawyck'	8	upto 150	3	SM	F / G	Typical crown form Buffer planting along embankment	10	1.8	C (ii)
G58	English Oak <i>Quercus robur</i> Field Maple <i>Acer campestre</i> Goat Willow <i>Salix caprea</i> Hybrid Black Poplar <i>Populus x canadensis</i> Silver Birch <i>Betula pendula</i> Alder <i>Alnus glutinosa</i> Aspen <i>Populus tremula</i> dawick beech Scots Pine <i>Pinus sylvestris</i>	8	upto 150	3	SM / EM	F / G	Typical crown form Buffer planting along embankment	10	1.8	C (ii)

Group No	Species	Height	Stem Dia.	Crown Radius	Age Class	Overall Condition	Structural Condition	RPA	RPA Radius	BS5837 Cat
G59	Field Maple Acer campestre Goat Willow Salix caprea Hybrid Black Poplar Populus x canadensis Norway Maple Acer platanoides Scots Pine Pinus sylvestris	18	upto 500	8	SM / EM	F / G	Typical crown form Buffer planting along embankment	113	6.0	B (ii)
G60	Field Maple Acer campestre Goat Willow Salix caprea Hybrid Black Poplar Populus x canadensis Silver Birch Betula pendula Alder Alnus glutinosa Dawycck beech Fagus sylvatica 'Dawycck'	14	upto 300	3	SM	F / G	Typical crown form Buffer planting along embankment	41	3.6	C (ii)
G61	English Oak Quercus robur Silver Birch Betula pendula Aspen Populus tremula Scots Pine Pinus sylvestris	8	upto 150	3	SM	F / G	Typical crown form Buffer planting along embankment	10	1.8	C (ii)

Group No	Species	Height	Stem Dia.	Crown Radius	Age Class	Overall Condition	Structural Condition	RPA	RPA Radius	BS5837 Cat
G62	English Oak Quercus robur Field Maple Acer campestre Silver Birch Betula pendula Aspen Populus tremula Scots Pine Pinus sylvestris	8	upto 150	3	SM	F / G	Typical crown form Buffer planting along embankment	10	1.8	C (ii)
G63	English Oak Quercus robur Field Maple Acer campestre Silver Birch Betula pendula Aspen Populus tremula	10	upto 150	3	SM	F / G	Typical crown form Buffer planting along embankment	10	1.8	C (ii)
G64	Crack Willow Salix fragilis	20	est 350	3	EM	F / G	Branch stubs evident Broken branches evident Established ivy cover Multi leadered form	55	4.2	B (ii)
G65	Ash Fraxinus excelsior Common Lime Tilia x europaea Sycamore Acer pseudoplatanus Yew Taxus baccata	21	upto 700	5	M	F	Branch stubs evident Broken branches evident Established ivy cover Within property boundary	222	8.4	B (ii)
G66	Common Lime Tilia x europaea Horse Chestnut Aesculus hippocastanum Sycamore Acer pseudoplatanus	25	est 700	7	M	F	Established ivy cover Major dead wood evident in the crown (>75mm) Minor dead wood evident in the crown (<75mm)	222	8.4	B (ii)

Group No	Species	Height	Stem Dia.	Crown Radius	Age Class	Overall Condition	Structural Condition	RPA	RPA Radius	BS5837 Cat
G67	Hybrid Black Poplar Populus x canadensis Leyland Cypress Cupressocyparis leylandii	22	300	5	EM	G	Light ivy cover Pruning wounds noted Typical crown form	41	3.6	B (ii)
G68	English Oak Quercus robur Goat Willow Salix caprea Hybrid Black Poplar Populus x canadensis Norway Maple Acer platanoides Wild Cherry Prunus avium Leyland Cypress Cupressocyparis leylandii	18	350	6	SM / M	P	Extensive flooding spoil and litter in the group	55	4.2	C (ii)

Hedge No	Species	Height	Stem Dia.	Crown Radius	Age Class	Overall Condition	Structural Condition	RPA	RPA Radius	BS5837 Cat
HEDGEROWS										
H1	Ash Fraxinus excelsior Blackthorn Prunus spinosa Elder Sambucus nigra Field Maple Acer campestre Hawthorn Crataegus monogyna Hazel Corylus avellana	2.5	58 80 110	1	SM	F	Maintained hedgerow Old laid forms Intermittent patchy hedgerow	10	1.8	C (ii)
H2	Ash Fraxinus excelsior Blackthorn Prunus spinosa Field Maple Acer campestre Hawthorn Crataegus monogyna English Elm Ulmus procera Hazel Corylus avellana	2.5	120 120 100 70 110	1.5	M	F	Maintained hedgerow Multi stemmed from base Old laid forms	25	2.8	C (ii)
H3	Ash Fraxinus excelsior Blackthorn Prunus spinosa Field Maple Acer campestre Hawthorn Crataegus monogyna	2.5	50 50 50 60 80	1	EM / M	G	Light ivy cover Maintained hedgerow Old laid forms	8	1.6	B (ii)
H4	Blackthorn Prunus spinosa Hawthorn Crataegus monogyna English Elm Ulmus procera	4	75	1.5	SM / EM / M	F	Outgrown hedgerow Typical crown form	3	0.9	C (ii)

Hedge No	Species	Height	Stem Dia.	Crown Radius	Age Class	Overall Condition	Structural Condition	RPA	RPA Radius	BS5837 Cat
H5	Blackthorn Prunus spinosa Field Maple Acer campestre English Elm Ulmus procera	2	50 60 80	1	SM / EM	G	Maintained hedgerow Typical crown form	6	1.3	C (ii)
H6	Elder Sambucus nigra English Elm Ulmus procera	2	6x 60	1.5	SM / EM	F	Flail damage evident Maintained hedgerow Old laid forms	10	1.8	C (ii)
H7	Ash Fraxinus excelsior Elder Sambucus nigra Field Maple Acer campestre English Elm Ulmus procera	2	6 x 60	1.5	SM / EM	F	Flail damage evident Maintained hedgerow Old laid forms	10	1.8	C (ii)
H8	Blackthorn Prunus spinosa Ash Fraxinus excelsior Elder Sambucus nigra Hawthorn Crataegus monogyna	1.5	50 50 50	1.5	SM	F	Maintained hedgerow	3	1.0	C (ii)
H9	Blackthorn Prunus spinosa Elder Sambucus nigra Field Maple Acer campestre Hawthorn Crataegus monogyna Hazel Corylus avellana	5	180 150	2	M	F	Outgrown hedgerow vertically Typical crown form	25	2.8	B (ii)

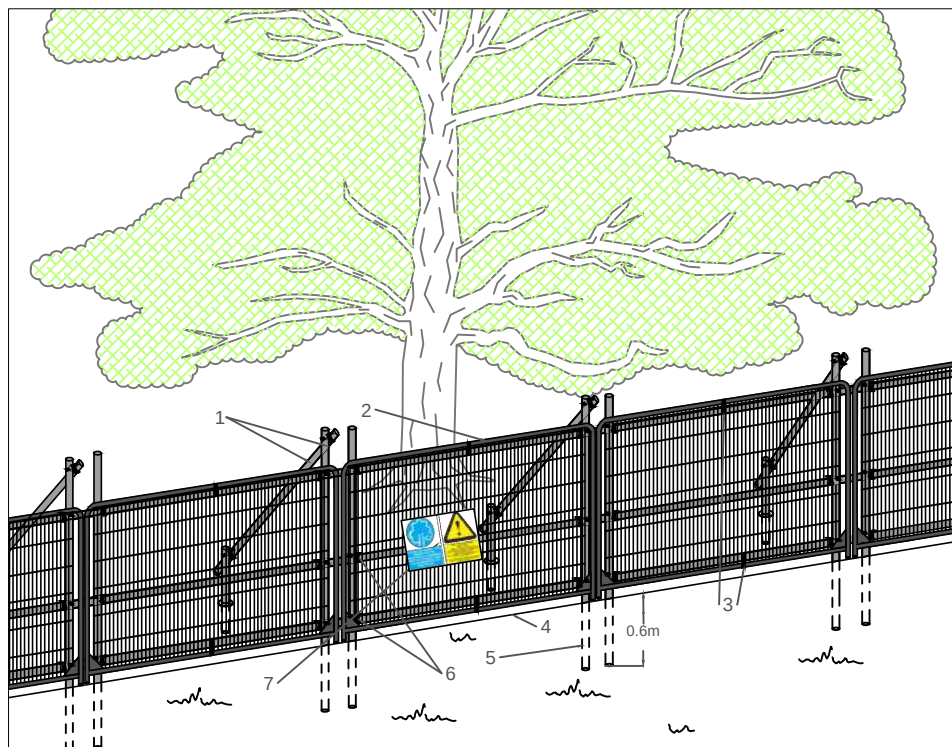
Hedge No	Species	Height	Stem Dia.	Crown Radius	Age Class	Overall Condition	Structural Condition	RPA	RPA Radius	BS5837 Cat
H10	Field Maple Acer campestre Hawthorn Crataegus monogyna Dogwood Cornus sanguinea	3	50	1	Yng	F	Recently planted	1	0.6	C (ii)
H11	Blackthorn Prunus spinosa Elder Sambucus nigra Field Maple Acer campestre Hawthorn Crataegus monogyna Hazel Corylus avellana	4	140	2	M	F	Mature outgrown hedgerow	9	1.7	B (ii)
H12	Field Maple Acer campestre Hawthorn Crataegus monogyna	3	60	1	Yng	G	Recently planted Partially flailed to the north side	2	0.7	C (ii)
H13	Field Maple Acer campestre Hawthorn Crataegus monogyna	2	80	1	M	G	Flail damage evident Maintained hedgerow	3	1.0	C (ii)
H14	Field Maple Acer campestre Hawthorn Crataegus monogyna	1.5	80	1	M	G	Flail damage evident Maintained hedgerow	3	1.0	C (ii)
H15	Blackthorn Prunus spinosa Field Maple Acer campestre Hawthorn Crataegus monogyna	2	upto 80	1	M	F	Dense ivy cover on main stem Dense undergrowth at the base Maintained hedgerow	3	1.0	C (ii)

Hedge No	Species	Height	Stem Dia.	Crown Radius	Age Class	Overall Condition	Structural Condition	RPA	RPA Radius	BS5837 Cat
H16	Ash Fraxinus excelsior Blackthorn Prunus spinosa Elder Sambucus nigra Hawthorn Crataegus monogyna	1	130	1	M	P	Maintained hedgerow Heavily reduced	8	1.6	C (ii)
H17	Blackthorn Prunus spinosa Hawthorn Crataegus monogyna	2	140	1	M	G	Light ivy cover Maintained hedgerow Typical crown form	9	1.7	C (ii)
H18	Beech Fagus sylvatica	4	avg 100	1	EM	G	Characteristic for species No major defects were noted	5	1.2	C (ii)
H19	Hawthorn Crataegus monogyna	4	avg 80	1	EM	G	Characteristic for species Un-maintained hedgerow Laid hedgerow	3	1.0	B (ii)
H20	Blackthorn Prunus spinosa	2	avg 90	1	SM	F	Characteristic for species No major defects were noted	4	1.1	C (ii)
H21	Ash Fraxinus excelsior Prunus sp.	1	avg 70	0.5	Yng	F	No major defects were noted	2	0.8	C (ii)
H22	Laural Prunus Laurocerasus	2	avg 100	0.5	SM	F	Maintained hedgerow No major defects were noted	5	1.2	C (ii)

Hedge No	Species	Height	Stem Dia.	Crown Radius	Age Class	Overall Condition	Structural Condition	RPA	RPA Radius	BS5837 Cat
H23	Blackthorn Prunus spinosa Field Maple Acer campestre Wild Cherry Prunus avium	1	avg 90	0.5	SM	F	Maintained hedgerow No major defects were noted	4	1.1	C (ii)
H24	Ash Fraxinus excelsior Blackthorn Prunus spinosa Elder Sambucus nigra	1	avg 120	0.5	EM	G	Maintained hedgerow No major defects were noted	7	1.4	C (ii)
H25	Ash Fraxinus excelsior Blackthorn Prunus spinosa Elder Sambucus nigra	1	avg 120	0.5	EM	G	Maintained hedgerow No major defects were noted	7	1.4	C (ii)
H26	Blackthorn Prunus spinosa Elder Sambucus nigra Wych Elm Ulmus glabra	1.5	avg 90	0.5	SM / EM	G	Maintained hedgerow No major defects were noted	4	1.1	C (ii)

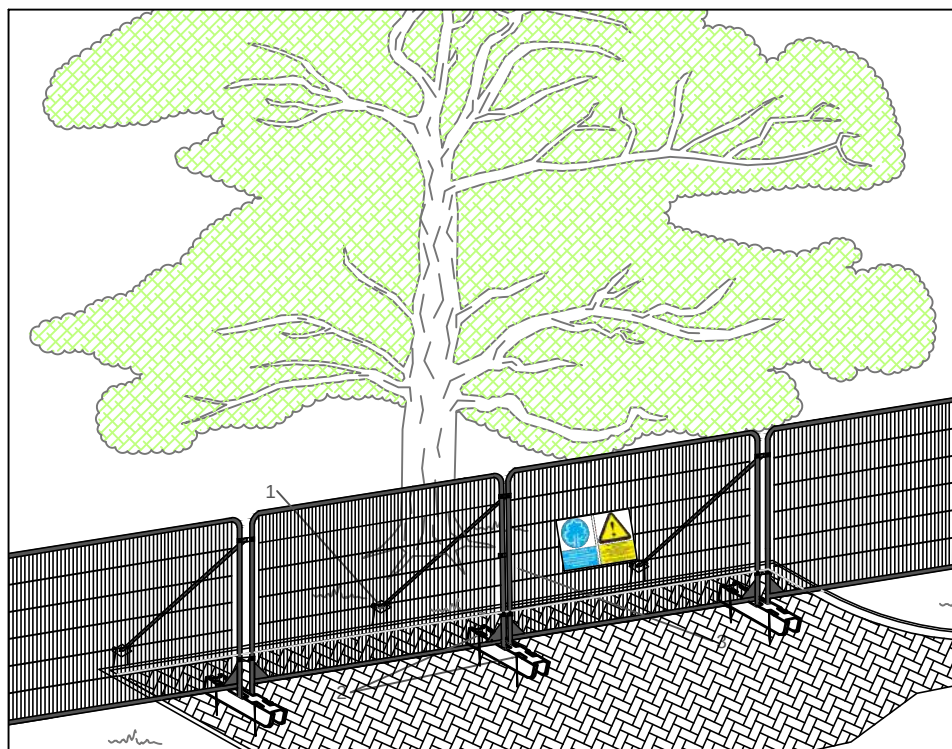
Hedge No	Species	Height	Stem Dia.	Crown Radius	Age Class	Overall Condition	Structural Condition	RPA	RPA Radius	BS5837 Cat
H27	Blackthorn Prunus spinosa Elder Sambucus nigra Wych Elm Ulmus glabra	1.5	avg 90	0.5	SM / EM	G	Maintained hedgerow No major defects were noted	4	1.1	C (ii)
H28	Hawthorn Crataegus monogyna Silver Birch Betula pendula	5	upto 100	1.5	EM	G	Un-maintained hedgerow	5	1.2	C (ii)
H29	Hawthorn Crataegus monogyna Silver Birch Betula pendula	3	upto 80	1	EM	G	Un-maintained hedgerow Intermittent standard trees present	3	1.0	C (ii)
H30	Blackthorn Prunus spinosa Hawthorn Crataegus monogyna Wild Cherry Prunus avium	3	upto 80	1	EM	G	Un-maintained hedgerow Intermittent standard trees present	3	1.0	C (ii)
H31	Blackthorn Prunus spinosa Hawthorn Crataegus monogyna Wild Cherry Prunus avium	3	upto 80	1	EM	G	Un-maintained hedgerow Intermittent standard trees present	3	1.0	C (ii)
H32	Blackthorn Prunus spinosa Hawthorn Crataegus monogyna Wild Cherry Prunus avium	3	upto 80	1	EM	G	Un-maintained hedgerow Intermittent standard trees present	3	1.0	C (ii)
H33	Hawthorn Crataegus monogyna dawick beech	6	120	2	Yng / SM	F	Typical crown form Maintained laterally outgrown vertically	7	1.4	C (ii)
H34	Hawthorn Crataegus monogyna	2	100	1.5	SM	F	Maintained hedgerow	5	1.2	C (ii)
H35	Ash Fraxinus excelsior Hawthorn Crataegus monogyna	5	upto 110	2	EM	F	Established ivy cover Typical crown form	5	1.3	C (ii)

Wood No	Species	Height	Stem Dia.	Crown Radius	Age Class	Overall Condition	Structural Condition	RPA	RPA Radius	BS5837 Cat
WOODLANDS										
W1	Ash Fraxinus excelsior Blackthorn Prunus spinosa Elder Sambucus nigra English Oak Quercus robur Hawthorn Crataegus monogyna Sycamore Acer pseudoplatanus Lawson Cypress Chamaecyparis lawsoniana	21	upto 600	4	EM / M / OM	G	Characteristic for species No major defects were noted	163	7.2	A (iii)



Standard specification for protective barrier

1. Standard scaffold poles
2. Heavy gauge 2m tall galvanized tube and welded mesh infill panels
3. Panels secured to scaffold frame with wire ties
4. Ground level
5. Uprights driven into the ground until secure (min depth of 0.6m)
6. Standard scaffold clamps
7. Construction Exclusion Zone signs



Above ground stabilising systems

1. Stabiliser strut with base plate secured with ground pins
2. Feet blocks secured with ground pins
3. Construction Exclusion Zone signs

Protective Fencing to be positioned to the specified dimensions in accordance with Figure 3 Tree Retention Plan

NOTES

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APPENDIX B PROTECTIVE FENCING SPECIFICATIONS

CAD file: S:\Arb resources\Basic Templates\Tree Protection\Appendix B - Protective Fencing A4.dwg