

Arboricultural Impact Assessment

WC-158.1a

Land adjacent to Ridings Lane, Golcar,
Huddersfield, West Yorkshire HD7 4PY



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Executive Summary

Woodsage Consulting Ltd have been instructed by Mr Richard Tibbot to undertake an Arboricultural Impact Assessment on a parcel of land adjacent to Ridings Lane, Golcar, Huddersfield, West Yorkshire HD7 4PY, in relation to the proposed development of the site.

The development proposals are for the construction of a single, detached, residential dwelling with associated off-road parking and garden areas. Unrelated to the development proposals, the client also intends to repair a partly collapsed retaining wall to the south of the site, which borders Ridings Lane.

According to information provided on the website of Kirklees Council (2023), the trees at the site are subject to an area Tree Preservation Order (TPO Ref: 01/14/g1). The site is also located within the Golcar Conservation Area, which affords statutory protection to all trees with a stem diameter of > 7.5 cm, at 1.5 m above ground level.

The site survey identified a total of 19 trees and three groups of trees with the potential to be affected by the development proposals. The trees at the site include 10 Category B trees of moderate-quality, nine Category C trees and two groups of low-quality, and one Category U group which displays serious, irreparable, structural defects.

Proposed repairs to a partially collapsed retaining wall will necessitate the removal of one Category B tree of moderate-quality and one Category C tree and one group of low-quality. The proposed development will necessitate the removal of a further four Category C trees of low-quality.

To avoid alterations to the existing levels within the root protection areas (RPAs) of two Category B trees, it is recommended that the proposed dwelling is constructed upon screw/auger pile foundations of the smallest feasible diameter.

The root protection areas (RPAs) of the retained trees are to be suitably protected throughout the development process through the application of tree protection fencing and ground protection.

The removal of Category C trees from the site is anticipated to have a negligible impact upon the local amenity. Although the removal of one Category B tree of moderate-quality - to facilitate proposed repairs to collapsing retaining wall - is unfortunate, the proposed mitigation planting will present an opportunity to diversify the age and species composition of the tree population.

This document includes an Outline Arboricultural Method Statement, which provides further details regarding tree removals and facilitative pruning, along with the specifications for tree protection fencing, ground protection, and other protective measures to be adhered to throughout the development.

As aspects of the development may be subject to change, the Outline Arboricultural Method Statement should be reviewed by the Project Arboriculturalist prior to the commencement of development works.

Providing the recommendations made within this document are followed, the development is considered achievable, with minimal impact in arboricultural terms to the site and surrounding area.



1. Introduction

1.1. Introduction & Scope of Report

- 1.1.1.** Woodsage Consulting Ltd have been instructed by Mr Richard Tibbot to undertake an Arboricultural Impact Assessment on a parcel of land adjacent to Ridings Lane, Golcar, Huddersfield, West Yorkshire HD7 4PY, in relation to the proposed development of the site.
- 1.1.2.** The purpose of this report is to allow the local planning authority (LPA) to assess information regarding trees at the site as part of the planning submission, and to demonstrate to the LPA that appropriate consideration has been given to the subject of trees as part of the development proposals.
- 1.1.3.** In accordance with *BS 5837: 2012: Trees in Relation to Design, Demolition and Construction - Recommendations* (hereafter referred to as *BS 5837: 2012*), this report sets out to:
- Assess the quality and value of the trees on and immediately adjacent to the site.
 - Identify trees for removal and/or retention, in consideration of the development proposals (where feasible, removals will be restricted to the less significant specimens on site).
 - Prescribe tree protection measures where necessary, which will ensure the successful retention of the retained trees at the site; in accordance with *BS 5837: 2012*, these measures will be further detailed in an Arboricultural Method Statement.
 - Assess the site and detail requirements for mitigation tree planting, where tree removals have been specified to facilitate the proposed development.
- 1.1.4.** The contents of this report are concerned with arboricultural issues alone; although other disciplines such as engineering and ecology may be referenced, it is important to gain advice from an appropriate expert on these matters.

1.2. Site Details

- 1.2.1.** The site - shown in **Fig. 1.1**, below - is centred on OS Grid Reference SE 09400 15786 and lies within the village of Golcar, approximately 2.5 miles west of Huddersfield. The site is accessed north off Ridings Lane.



Figure 1.1: Aerial imagery showing the approximate boundaries of the site, outlined in red (Google Earth, 2023)



1.2.2. The site comprises a 0.04 La parcel of scrubland, which is bound by mixed-deciduous woodland to the north and west, by neighbouring residential properties to the east, and by Ridings Lane to the south.

1.2.3. Although the surrounding woodland to the north and west of the site is also under the ownership of the client, these areas are not intended for development.

1.3. Topography

1.3.1. The site lies at an altitude ranging between 200 - 220 m above sea-level.

1.3.2. The topography of the site falls from north to south, though significant areas are level owing to two existing retaining walls, one of which borders Ridings Lane.

1.4. Desk Based Study and Planning Context

1.4.1. Cranfield (2023) states that the site and surrounding area consists of Soilscape 6; these are “*freely draining, slightly acid, loamy soils*”. No further detailed soil analysis was carried out as part of the survey.

1.4.2. According to information provided on the website of Kirklees Council (2023), the trees at the site are subject to an area Tree Preservation Order (TPO Ref: 01/14/g1). The site is also located within the Golcar Conservation Area, which affords statutory protection to all trees with a stem diameter of > 7.5 cm, at 1.5 m above ground level.

1.5. Development Proposals

1.5.1. The development proposals are for the construction of a single, detached, residential dwelling with associated off-road parking and garden areas.

1.5.2. Although an application for the erection of a single, detached, residential dwelling was refused in 2017 (Ref: 2016/62/93315/W), this included proposals for a double garage - which has now been redacted – and has reduced the total footprint of the development by approximately 34 m².

1.5.3. Unrelated to the development proposals, the client also intends to repair a partly collapsed retaining wall to the south of the site, which borders Ridings Lane. The wall collapsed onto Ridings Road circa 2013 and notice has been served by the Kirklees Council Highways Department to repair this section. The cause of the failure of the retaining wall has been associated to a combination of land movement and increasing pressure from tree and vegetation growth.



2. Methods

2.1. Survey Details

2.1.1. The site survey was carried out on Wednesday 15th of March 2023. The weather at time of survey was fine and dry; the visibility of the trees was not impeded.

2.2. Survey Personnel

2.2.1. The survey was carried out by Jack Delaney. Jack has worked in the arboricultural sector for 15 years, holds an FdSc in Arboriculture, and is a Professional Member of the Arboricultural Association and an Associate Member of the Institute of Chartered Foresters. Jack is also a LANTRA Qualified Professional Tree Inspector and is a trained and registered user of Quantified Tree Risk Assessment (QTRA).

2.3. Survey Methodology

2.3.1. Only substantial trees with a stem diameter of 75 mm or above were included as part of the survey, as is recommended in *BS 5837:2012*.

2.3.2. The trees were inspected from ground level, using the Visual Tree Assessment (VTA, Mattheck and Breloer, 1994). Although notable defects of trees were recorded, the site survey did not constitute a full tree safety assessment. No specialist decay detection equipment was used as part of the survey, though sounding and probing tools were used where necessary.

2.3.3. Tree information was collected in accordance with *BS 5837: 2012*, and includes species, height, diameter, crown spread, crown clearance, age class, condition, vitality, and estimated remaining contribution.

2.3.4. Trees were allocated to one of four categories (U, A, B or C) as defined in **Tab. 2.1**, below, to reflect amenity value and suitability for retention, in consideration of the development proposals.

Table 2.1: *BS 5837: 2012* cascade chart (adapted from *British Standards, 2012*)

<i>BS 5837: 2012</i> Category	Definition	Retention	Colour code
Category A	Trees of high quality with an estimated remaining life expectancy of at least 40 years; trees that are particularly good examples of their species, especially if rare or unusual.	Highly desirable	Light green
Category B	Trees of moderate quality with an estimated remaining life expectancy of at least 20 years; trees lacking the special quality to merit category A designation.	Desirable	Dark blue
Category C	Trees of low quality with an estimated remaining contribution of at least 10 years, or trees with a stem diameter below 150mm; unremarkable trees of very limited merit or such impaired condition that they do not qualify in higher categories.	Feasible, but should be removed if posing a constraint to development	Grey
Category U	Trees that have serious, irremediable, structural and/or physiological defects, including those that will become unviable after removal of other category U trees.	Unfeasible	Red

2.3.5. Subcategories 1, 2 and 3 were also given to trees, and reflect arboricultural and landscape qualities, and cultural values, respectively.

2.3.6. Tree heights were measured using a clinometer to the nearest metre; crown spreads were measured to the north, east, south, and west aspects, using a laser measurer to the nearest metre.



2.3.7. Where access to trees was obstructed or obscured, DBH, height, and crown spread measurements have instead been estimated.

2.3.8. The diameter at breast height (DBH) of trees was measured at 1.5 m above ground level, and rounded to the nearest centimetre. This was then used to calculate the root protection area (RPA) of trees using methods prescribed in *BS 5837:2012*:

- For single stem trees, the RPA was calculated as a circle with a radius 12 times the DBH.
- For trees with 2-5 stems, the combined stem diameter was first calculated using the formula:

$$\sqrt{(\text{Stem 1 DBH})^2 + (\text{Stem 2 DBH})^2 + \dots (\text{Stem 5 DBH})^2}$$

- For trees with 6 or more stems, the combined stem diameter was first calculated using the formula:

$$\sqrt{(\mu \text{ DBH})^2 \times \text{number of stems}}$$

2.4. Constraints

2.4.1. The survey was constrained by the season in which it took place; certain tree pathogens, for example, the fructifications of decay fungi are only visible at specific times of the year.

2.4.2. The locations of trees plotted during the survey were aided using a topographical plan of the site; the accuracy of this plan is unknown to the author of this document.



3. Survey Results and Observations

3.1. Tree Population Observations and Amenity Value

- 3.1.1. The site survey identified a total of 19 trees and three groups of trees with the potential to be affected by the development proposals.
- 3.1.2. The tree species recorded at the site include sycamore (*Acer pseudoplatanus*), silver birch (*Betula pendula*), common hawthorn (*Crataegus monogyna*), common ash (*Fraxinus excelsior*), wild common holly (*Ilex aquifolium*), cherry (*Prunus avium*), sessile oak (*Quercus petraea*), goat willow (*Salix caprea*) and rowan (*Sorbus aucuparia*).

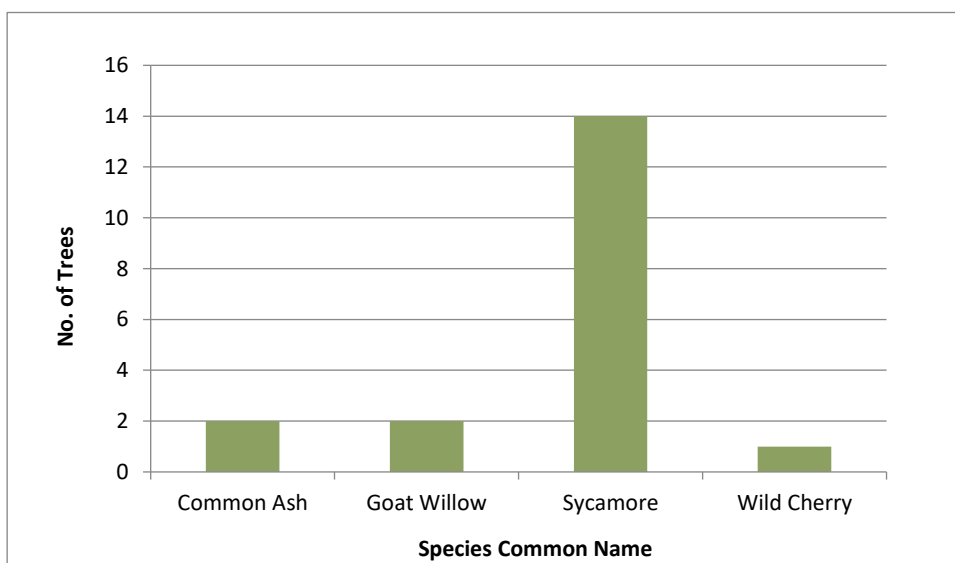


Figure 3.1: Bar chart showing the species of the individual trees recorded at the site

- 3.1.3. Fig. 3.1, above, illustrates that the dominant tree species at the site is sycamore, which accounts for approximately 74% of the individual trees recorded.

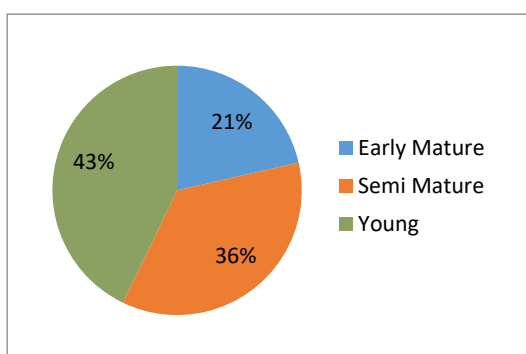


Figure 3.2: Pie chart showing the age classes of the trees recorded at the site

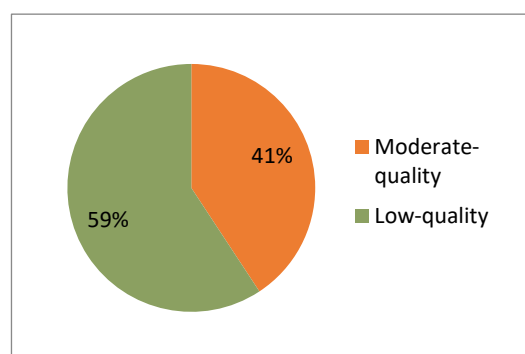


Figure 3.3: Pie chart showing the quality of the trees recorded at the site

- 3.1.4. The trees within the boundaries of the site predominantly fall within the young to semi-mature in age class (Fig. 3.2). Although early-mature trees account for 21% of the trees, these are mostly located on land immediately to the north and west of the site.
- 3.1.5. There is a relatively even mix of moderate-quality and low-quality trees at the site (Fig. 3.3), though collectively, the trees are considered to provide moderate amenity and ecological value to the local area.



3.2. Tree Categorisation

- 3.2.1.** The trees situated on or immediately adjacent to the site include 10 Category B trees of moderate-quality, nine Category C trees and two groups of low-quality, and one Category U group which displays serious, irremediable, structural defects.
- 3.2.2.** There were no Category A trees of high-quality identified at the site.
- 3.2.3.** A summary of the *BS 5837: 2012* categories of trees at the site is given in **Tab. 3.1**, below.

Table 3.1: Summary of tree categories

<i>BS 5837: 2012</i> Category	Description	Tree/Group Numbers	Totals
B	Trees of moderate-quality, which should where possible be retained throughout any proposed development	T003, T007, T010, T011, T012, T013, T016, T017, T018, T019	10 Trees
C	Trees of low-quality, which should not be considered a constraint to development	T001, T002, T004, T005, T006, T008, T009, T014, T015 G001, G002	9 Trees 2 Groups
U	Trees that have serious, irremediable, structural and/or physiological defects	G003	1 Group
Subtotal:			19 Trees 3 Groups

- 3.2.4.** Tree data can be viewed in **Appendix 1: Tree Survey Schedule**. Images of the trees can be viewed in **Appendix 2: Images of Trees**. Tree locations, and the above and below ground constraints posed by trees, can be viewed in **Appendix 4: Tree Constraints Plan**.



4. Impact Assessment

4.1. Tree Removals to Facilitate Proposed Retaining Wall Repairs

- 4.1.1. To facilitate the proposed repairs to the retaining wall, T001, T007, and G001 will necessitate removal.
- 4.1.2. The proposed design for the wall – which has been prepared by a Structural Engineer and approved by the Kirklees Council Highways Department - is provided in **Appendix 9**.
- 4.1.3. The proposed repairs will require works from behind the wall, to install drainage and to grade the exposed land backwards, so to reduce the potential for collapse. The above works will therefore necessitate adequate working space behind the wall. These practical requirements dictate that excavations will be required to extend approximately 3 metres backwards from the front face of the wall. This proposed excavation zone is shown on **Appendix 1: Tree Constraints Plan 1**.
- 4.1.4. T001 and the majority of G001 are positioned within the 3 m excavation zone, and therefore will unavoidably necessitate removal.
- 4.1.5. Although T007 is positioned outside of the 3 m excavation zone, approximately 79 m² of the root protection area will be impacted by these excavations, and as such, the tree is not considered retainable.
- 4.1.6. T001 and G001 include Category C trees of low-quality only; in accordance with *BS 5837: 2012*, these should not be considered a constraint to the development.
- 4.1.7. Although the removal of T007, which is a Category B tree of moderate-quality, is unfortunate, the mitigation tree planting which is proposed as part of the development will present an opportunity to diversify the age and species composition of the wider tree population.

4.2. Root Protection Areas (RPAs) Impacted by Proposed Retaining Wall Repairs

- 4.2.1. Although T013 is positioned outside of the 3 m excavation zone, approximately 15 m² of the root protection area will be impacted by excavations, which equates to approximately 7.5% of the total RPA.
- 4.2.2. The relatively small proportion of affected RPA suggests that the T013 may be retainable throughout the proposed wall repair works, providing that excavations within the RPA are supervised by the Project Arboriculturalist. No roots > 25 mm in diameter shall be severed without first consulting with the Project Arboriculturalist.

4.3. Tree Removals to Facilitate Proposed Development

- 4.3.1. To facilitate the development proposals T005, T006, T008 and T009 will necessitate removal.
- 4.3.2. T005, T006, T008 and T009 are all positioned within the footprint of a proposed access path and/or heavily encroach upon the proposed dwelling, and will therefore necessitate removal to facilitate the proposals.
- 4.3.3. T009 is also rooted within the face of an adjacent retaining wall, and therefore is considered unlikely to be retainable long-term.
- 4.3.4. T005, T006, T008 and T009 are all Category C trees of low-quality; in accordance with *BS 5837: 2012*, these should not be considered a constraint to the development.



4.4. Facilitative Pruning

- 4.4.1. Branches extending south from T018 will overhang the northern aspect of the proposed dwelling by approximately 1.5 m. Although the T018 displays a crown clearance of circa 4 m at the levels of the main trunk, at the levels of the proposed dwelling - due to sudden ground level changes south of the tree - this equates to approximately 7 m.
- 4.4.2. The proposed dwelling will measure approximately 5 m at the eaves from ground level on the north aspect, meaning T018 would currently display crown clearance of around 2 m from the eaves of the property.
- 4.4.3. To allow for the installation of scaffolding during construction and to reduce future nuisances relating to branch encroachment upon completion of the development, it is recommended that branches extending south from T018 are reduced by circa 1.5 m.
- 4.4.4. The extent of the pruning required to T018 is illustrated in **Appendix 5: Tree Constraints Plan 2**.

4.5. RPAs Impacted by Proposed Development

- 4.5.1. The RPAs of T018 and T019 have been offset by 20% and 10%, respectively, due to sudden ground level changes immediately to the south of both trees, which offers an unfavourable environment for root development. The RPAs of T018 and T019 will however still be encroached upon by the proposed dwelling, by approximately 10% and 6%, respectively.
- 4.5.2. Since the majority of tree roots are typically found within the first 100 cm of ground level, to avoid alterations of the existing levels within the RPAs of T018 and T019, the proposed dwelling should be constructed upon screw/auger pile foundations of the smallest feasible diameter.
- 4.5.3. The application of screw/auger piles will significantly reduce the potential disturbance of tree roots in comparison to traditional strip footings; however, if major tree roots > 25 mm are found present at the proposed locations of the piles, alternative locations should be used. No roots > 25 mm in diameter should be severed without first consulting with the Project Arboriculturalist.
- 4.5.4. The tree protection fencing and ground protection - detailed in **Section 5** and **Section 7** of the **Outline Arboricultural Method Statement** in **Appendix 3**, and illustrated in the **Tree Protection Plans** in **Appendix 7** and **Appendix 8** - will ensure that the RPAs of the retained trees are suitably protected from construction activities.

4.6. Shade Analysis

- 4.6.1. The proposed development is not anticipated to incur excessive shading by the adjacent trees, with the southern aspects unobstructed.
- 4.6.2. A visual representation of the anticipated shading at the site can be viewed in **Appendix 6: Shade Analysis Plan**.

4.7. Services and Other Considerations

- 4.7.1. Details of service routes are not available at time of writing. Underground services should be installed outside of the RPAs of the retained trees. If there are any areas which conflict with tree RPAs however, this should first be reported to the Project Arboriculturalist, so that appropriate measures may be taken.
- 4.7.2. To alleviate ongoing nuisances from falling leaves from the retained adjacent trees, it is suggested that gutter guards are installed on the proposed dwelling, which will help to prevent seasonal blockages.



4.8. Soft-Landscaping

- 4.8.1.** Since the majority of tree roots are typically found within the first 100 cm of ground level - particular attention should be paid to existing levels at the site - which should be observed and maintained within tree RPAs.
- 4.8.2.** Any unavoidable excavations into the soil within RPAs should be carried out by use of hand-operated tools only and only under prior approval of the Project Arboriculturalist. No roots > 25 mm in diameter should be severed without first consulting the Project Arboriculturalist.
- 4.8.3.** Fencing is proposed to the west of the site and will pass through the RPA of T010. The proposed fencing is however to be of timber construction and therefore is a minor structure in respect of impact to tree RPAs. Installation of fencing within RPAs should however adhere to the guidelines detailed in **Section 8** of the **Outline Arboricultural Method Statement** in **Appendix 3**.



5. Recommendations

5.1. Tree Works

- 5.1.1. To facilitate the proposed repairs to the retaining wall, T001, T007, and G001 should be removed.
- 5.1.2. To facilitate the development proposals T005, T006, T008 and T009 should be removed.
- 5.1.3. To allow for the installation of scaffolding during construction and to reduce future nuisances relating to branch encroachment upon completion of the development, branches extending south from T018 should be reduced by approximately 1.5 m.

5.2. Legal Constraints

- 5.2.1. According to information available on the website of Kirklees Council (2023), T001, T005, T006, T007, T008, T009, T018 and G001 are subject to an area TPO (Ref: 01/14/g1), and are located within the Golcar Conservation Area.
- 5.2.2. The recommended tree works will therefore require prior written consent from Kirklees Council. Killing or damaging a protected tree is a criminal offence and can result in an unlimited fine.
- 5.2.3. All tree works, including tree removals, should be carried out by a fully insured and suitably qualified arboricultural contractor who is able to comply with *BS 3998: 2010: Tree Works - Recommendations*.

5.3. Tree Protection

- 5.3.1. Construction, and any other works involving excavations, can cause irreversible damage to trees - particularly those which have reached maturity - which are far less capable of adapting to alterations in their surrounding environment. Whilst above-ground injuries are usually obvious, root damage is often concealed, though can have equally devastating impacts to tree health.
- 5.3.2. Direct root damage includes root severance, which can be caused by digging of trenches and ditches, and the stripping of topsoil. Indirect damage may involve the raising of soil levels, alterations in drainage patterns, the laying of impervious surfaces, and soil compaction.
- 5.3.3. Compaction of soils is regarded as the most common cause of death or damage to retained trees on development sites. Soil compaction reduces soil pore space, which in turn reduces soil air, the passage of water and available nutrients. These anaerobic conditions prevent root growth and the proliferation of soil microbes essential to tree health. Symptoms in trees may include crown die-back, sparse, and small foliage, poor extension growth; however, these are usually not evident until well after the occurrence of compaction. Even one pass of a vehicle in wet conditions can cause irreparable soil compaction.
- 5.3.4. To avoid both direct and indirect damage to the roots of the retained trees, temporary tree protection fencing and ground protection should be installed in the following stages:
 - Tree protection fencing should be installed prior to the completion of the retaining wall repairs, as is illustrated in **Appendix 7: Tree Protection Plan 1**.
 - Upon completion of the retaining wall repairs, the tree protection fencing should then be realigned, and further ground protection should be installed to facilitate construction of the proposed dwelling, as is illustrated in **Appendix 8: Tree Protection Plan 2**.
- 5.3.5. The specifications for tree protection fencing and ground protection can be found in **Appendix 3: Outline Arboricultural Method Statement**.



- 5.3.6. Since the majority of tree roots are typically found within the first 100 cm of ground level - particular attention should be paid to existing levels at the site - which should be observed and maintained within tree RPAs.
- 5.3.7. Any unavoidable excavations into the soil within RPAs should be carried out by use of hand-operated tools only, and only under prior approval of the Project Arboriculturalist. No roots > 25 mm in diameter should be severed without first consulting the Project Arboriculturalist.
- 5.3.8. It is recommended that construction works follow the **Outline Arboricultural Method Statement** provided in **Appendix 3**. This includes further details regarding tree removals and facilitative pruning, along with specifications for tree protection fencing, ground protection, and other protective measures to be adhered to throughout the development.
- 5.3.9. As aspects of the development may be subject to change, the **Outline Arboricultural Method Statement** should be reviewed by the Project Arboriculturalist prior to the commencement of development works.

5.4. Mitigation

- 5.4.1. The proposed repairs to the retaining wall will necessitate the removal of one Category B tree of moderate-quality and one Category C tree and one group of low-quality.
- 5.4.2. The proposed development will necessitate the removal of four Category C trees of low-quality.
- 5.4.3. To account for the losses incurred to the amenity and ecology of the site, and to diversify the age and species composition of the tree population, it is recommended that 10 trees - regular-standard in size - are included within a post-development mitigation planting scheme.
- 5.4.4. Suggested species, of an appropriate size at full-maturity, which will thrive on the freely draining, slightly acid, loamy soils present at the site, include rowan (*Sorbus aucuparia*), wild-service tree (*Sorbus torminalis*), silver birch (*Betula pendula*), woodland hawthorn (*Crataegus laevigata*), field maple (*Acer campestre*), sessile oak (*Quercus petraea*), sweetgum (*Liquidambar styraciflua*), and wild cherry (*Prunus avium*).
- 5.4.5. The specifications, locations and maintenance requirements of the proposed trees should be further detailed in a Mitigation Tree Planting Plan.

5.5. Additional Information

- 5.5.1. All visual observations and recommendations specified within this document relate to the condition of the trees and surroundings at the time of the survey. As such, any subsequent changes to landform in the proximity of the trees could invalidate the advice given.
- 5.5.2. Trees provide valuable habitat for wild birds, bats, and various other forms of wildlife. In accordance with the Wildlife and Countryside Act 1981, the risks posed to these should be suitably assessed before any recommendations within this report are completed.
- 5.5.3. Trees are dynamic living organisms, and their condition can change rapidly; the information given in this document is therefore valid for a period of 18 months. This period may be reduced if significant changes occur to the trees or to the ground conditions which surround them.



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Appendices

Appendix 1: Tree Survey Schedule

Table Key												
Tree/Group Ref: Reference numbers, as illustrated in Appendix 4: Tree Constraints Plan 1						DBH: Diameter at breast height (1.5m), in millimetres						
Height (Ht.): Overall height of tree, measured to nearest metre						SULE: Safe useful estimated life expectancy of tree, in years						
Crown Spread (CS): Radius of crown to N, E, S, and W aspects, measured to nearest metre						Crown Clearance (CC): Clearance from ground level of lowest branch, measured to nearest metre						
Structural Condition (SC): An assessment of structural condition. G = Good; F = Fair; D = Decaying; C = Collapsing; PD = Physical Defect						Vitality (V): An assessment of physiological condition for species and age of tree. F = Fair; P = Poor; D = Dead						
Species: Common (and <i>binomial name</i>)						#: Denotes estimated value						
Age	Young (Y): Newly planted or self-seeded tree				Early-mature (EM): Trees in second-third of life expectancy for species type				Over-mature (OM): Mature trees which have entered stages of natural decline			
	Semi-mature (SM): Trees in within first-third of life expectancy for species type				Mature (M): Trees in final-third of life expectancy for species type				Veteran (V): Trees of any age, which display ancient characteristics			
BS 5837: 2012 Categories	Category A: Trees of high-quality with an estimated remaining life expectancy of at least 40 years, and that are particularly good examples of their species type						Category C: Unremarkable trees of low-quality offering limited arboricultural merit and/or of such impaired condition that they do not warrant in higher categorisation					
	Category B: Trees of moderate-quality with an estimated remaining life expectancy of at least 20 years, though lacking the necessary qualities to warrant Category A designation						Category U: Trees which display serious, irremediable, structural and/or physiological defects					

Individual Trees

Tree Ref:	Species	Age	SULE	Ht.	DBH	CS				CC	Comments	V	BS 5837: 2012 Category	Recommendations
						N	E	S	W					
T001	Goat Willow (<i>Salix caprea</i>)	EM	5-10	7	290 320	2	4.5	5	4	1	Bifurcates at ground level into two co-dominant stems. Partially failed at root plate historically, though rerooted with stem lean now corrected.	F	C1	Remove tree
T002	Goat Willow (<i>Salix caprea</i>)	EM	10-20	13	470	4.5	5	6.5	5	3	Included primary union at 0.5 m on north aspect of main stem. Split and hanging secondary branch at circa 4 m in north aspect of crown. Extensive deadwood < 100 mm throughout the crown. Heavily pruned historically presumably for clearance to the adjacent property, with several residual branch stubs remaining in crown. Garden and household waste tipped around base, obscuring root collar.	F	C1	No works recommended



Tree Ref:	Species	Age	SULE	Ht.	DBH	CS				CC	Comments	V	BS 5837: 2012 Category	Recommendations
						N	E	S	W					
T003	Sycamore (<i>Acer pseudoplatanus</i>)	SM	40-80	14	370	3.5	4	4	3	1	Growing from base of retaining wall. No obvious significant defects.	G	B1	No works recommended
T004	Sycamore (<i>Acer pseudoplatanus</i>)	SM	40-80	14	340	4	2	4.5	4	3	Growing on top of retaining wall. Bifurcates into multiple co-dominant stems at 0-1 m; unions are acute and possibly included.	G	C1	No works recommended
T005	Sycamore (<i>Acer pseudoplatanus</i>)	Y	20-40	10	230	2	3	2.5	1	0	Suppressed by adjacent tree with asymmetrical crown spread in result. Dense ivy (<i>Hedera helix</i>) established on main stem and structural branches, obscuring tree features and potential defects.	F	C1	Remove tree
T006	Common Ash (<i>Fraxinus excelsior</i>)	SM	10-20	9	150 290	1	7.5	3.5	2	1	Suppressed by adjacent tree with asymmetrical crown spread and leaning main stems in result. Dense ivy (<i>Hedera helix</i>) established on main stem and primary branches, obscuring tree features and potential defects. Primary branch extending east in contact with stem of adjacent tree at circa 2.5 m.	F	C1	Remove tree
T007	Sycamore (<i>Acer pseudoplatanus</i>)	EM	40-80	19	590 570 540 250	7	5	6	6	1	Bifurcates at ground level into four co-dominant stems unions are acute and possibly included. Dense ivy (<i>Hedera helix</i>) established on main stem and structural branches, obscuring tree features and potential defects.	F	B1	Remove tree
T008	Sycamore (<i>Acer pseudoplatanus</i>)	SM	20-40	12	220 220 160	2.5	3	3.5	2.5	3	Multiple-stemmed tree growing from base of retaining wall. Primary unions at base are acute and possibly included.	G	C1	Remove tree
T009	Common Ash (<i>Fraxinus excelsior</i>)	Y	20-40	10	230	4.5	3	3	3	1	Growing from retaining wall. No obvious significant defects, though of limited arboricultural merit and lacks qualities for <i>higher BS 5837</i> categorisation.	F	C1	Remove tree



Tree Ref:	Species	Age	SULE	Ht.	DBH	CS				CC	Comments	V	BS 5837: 2012 Category	Recommendations
						N	E	S	W					
T010	Sycamore (<i>Acer pseudoplatanus</i>)	SM	40-80	13	330	3	4.5	4.5	2	2	Asymmetrical crown spread likely developed due to proximity with adjacent trees.	G	B1	No works recommended
T011	Sycamore (<i>Acer pseudoplatanus</i>)	SM	40-80	14	330	5	3	2	3	3	Asymmetrical crown spread likely developed due to proximity with adjacent trees.	G	B1	No works recommended
T012	Sycamore (<i>Acer pseudoplatanus</i>)	SM	40-80	13	390	5	4	5	4	3	Asymmetrical crown spread likely developed due to proximity with adjacent trees. Ivy (<i>Hedera helix</i>) established on main stem, partially obscuring tree features and potential defects.	G	B1	No works recommended
T013	Sycamore (<i>Acer pseudoplatanus</i>)	EM	40-80	15	460 430 210	5.5	5	6	4.5	2	Bifurcates at ground level into three co-dominant primary stems; unions are acute and possibly included. Two co-dominant stems have been historically removed with 1 m stubs remaining. Dense ivy (<i>Hedera helix</i>) established on main stems, obscuring tree features and potential defects.	F	B1	No works recommended
T014	Sycamore (<i>Acer pseudoplatanus</i>)	Y	40-80	10	140	1.5	1.5	1.5	1.5	2	No obvious significant defects, though of limited arboricultural merit and lacking qualities for higher BS 5837 categorisation.	G	C1	No works recommended
T015	Sycamore (<i>Acer pseudoplatanus</i>)	Y	40-80	8	130	1	2	2	1	3	No obvious significant defects, though of limited arboricultural merit and lacking qualities for higher BS 5837 categorisation.	G	C1	No works recommended
T016	Wild Cherry (<i>Prunus avium</i>)	EM	40-80	13	430	5	4	5.5	4	7	No obvious significant defects.	G	B1	No works recommended
T017	Sycamore (<i>Acer pseudoplatanus</i>)	SM	40-80	14	370 360 310	4	4	4.5	4	6	Bifurcates at ground level into three co-dominant primary stems; unions are acute and possibly included. Dense ivy (<i>Hedera helix</i>) established on main stems, obscuring tree features and potential defects.	G	B1	No works recommended



Tree Ref:	Species	Age	SULE	Ht.	DBH	CS				CC	Comments	V	BS 5837: 2012 Category	Recommendations
						N	E	S	W					
T018	Sycamore (<i>Acer pseudoplatanus</i>)	SM	40-80	13	390	3	1.5	4	4	2.5	Growing on top of retaining wall. Asymmetrical crown spread, anticipated to have developed due to proximity with adjacent trees. Dense ivy (<i>Hedera helix</i>) established on main stem and structural branches, obscuring tree features and potential defects.	G	B1	Reduce branches extending south towards development site by approx. 1.5 m
T019	Not identified (<i>Not identified</i>)	EM	40-80	15	510	7	3.5	2.5	6.5	7	Asymmetrical crown spread anticipated to have developed due to proximity with adjacent trees. Dense ivy (<i>Hedera helix</i>) established on main stem and structural branches, obscuring tree features and potential defects.	F	B1	No works recommended

Groups of Trees

Group Ref:	Species Composition	Age	SULE	Av. Ht.	Av. DBH	Approx. No. of Stems	CC	Comments	V	BS 5837: 2012 Category	Recommendations
G001	Common Ash (<i>Fraxinus excelsior</i>) Common Holly (<i>Ilex aquifolium</i>) Common Hawthorn (<i>Crataegus monogyna</i>) Sycamore (<i>Acer pseudoplatanus</i>)	Y	20-40	5	100	20	0	Dense group of self-seeded sapling trees, of limited arboricultural merit and lacking qualities for higher BS 5837 categorisation.	G	C1	Remove group
G002	Wild Cherry (<i>Prunus avium</i>) Bird Cherry (<i>Prunus padus</i>) Silver Birch (<i>Betula pendula</i>) Sessile Oak (<i>Quercus petraea</i>)	Y	20-40	6	100	40	0	Dense understorey group of young trees. No obvious significant defects, though of limited arboricultural merit and lacking qualities for higher BS 5837 categorisation.	G	C1	No works recommended



Group Ref:	Species Composition	Age	SULE	Av. Ht.	Av. DBH	Approx. No. of Stems	CC	Comments	V	BS 5837: 2012 Category	Recommendations
G003	Goat Willow (<i>Salix caprea</i>)	SM EM	5-10	15	400	3	2	Group of willows, two of which display extensive deadwood > 100 mm throughout the crowns and/or display partially collapsed primary branches.	P	U	No works recommended



Appendix 2: Images of Trees



Plate 1: T001



Plate 2: T002



Plate 3: T003 (right) & T004 (left)



Plate 4: T005



Plate 5: T006



Plate 6: T007



Plate 7: T008 (right) & T009 (left)



Plate 8: T010, T011 & T012 (right to left)



Plate 9: T013



Plate 10: T014 (left) & T015 (right)



Plate 11: T016



Plate 12: T017



Plate 13: T018 (right) & T019 (left)



Plate 14: G001



Plate 15: G002



Plate 16: G003



Appendix 3: Outline Arboricultural Method Statement

A3.1 Introduction

- A3.1.1** Woodsage Consulting Ltd have been instructed by Mr Richard Tibbot to produce an Outline Arboricultural Method Statement in relation to the proposed development of the land at Ridings Lane, Golcar, Huddersfield, West Yorkshire HD7 4PY.
- A3.1.2** The development proposals are for the construction of a single, detached, residential dwelling with associated off-road parking and garden areas. Unrelated to the development proposals, the client also intends to repair a partly collapsed retaining wall to the south of the site, which borders Ridings Lane.
- A3.1.3** This Outline Arboricultural Method Statement should be read in conjunction with the Arboricultural Impact Assessment. (Ref: WC-158.1a).

A3.2 Timing of Works

- A3.2.1** It is not the Project Arboriculturist's role to determine the timing and implementation of works on site, however, an input into the process can avoid issues once work is underway. The phasing of works should be carried out in accordance with **Tab. A2.1**, below.

Table A2.1: Timing of Works

Stage	Works
1	Site induction
2	Carry out tree removals and facilitative pruning
3	Install temporary tree protection fencing, as illustrated in Appendix 7: Tree Protection Plan 1
4	Inspection of tree protection measures by the Project Arboriculturist
5	Carry out repairs to retaining wall (excavations within RPA of T013 to be supervised by Project Arboriculturist)
6	Realign temporary tree protection fencing and install temporary ground protection, as illustrated in Appendix 8: Tree Protection Plan 2
7	Inspection of tree protection measures by the Project Arboriculturist
8	Carry out development works (main dwelling is to be constructed upon pile foundations)
9	Carry out soft-landscaping works (including the installation of a wooden post and rail fence to the west of the site within the root protection area of trees).
10	Remove tree protection fencing and ground protection once development works are completed
11	Final inspection by the Project Arboriculturist

A3.3 Timing of Works

- A3.3.1** Prior to works commencing, it is the responsibility of the main contractor, or assigned agent, to ensure that details regarding tree protection are understood and adhered to by all site personnel.
- A3.3.2** During the site induction, the final Arboricultural Method Statement, and a copy of the **Tree Protection Plans (Appendix 7 and 8)** should be made available to all contractors attending the site.

A3.4 Tree Works

- A3.4.1** Prior to development works commencing, T001, T005, T006, T007, T008, T009 and G001 will necessitate removal.
- A3.4.2** Branches extending south from T018 towards the development site should be reduced by approximately 1.5 m.



A3.4.4 According to information available on the website of Kirklees Council (2023), T001, T005, T006, T007, T008, T009, T018 and G001 are subject to an area TPO (Ref: 01/14/g1), and are located within the Golcar Conservation Area.

A3.4.5 The recommended tree works will therefore require prior written consent from Kirklees Council. Killing or damaging a protected tree is a criminal offence and can result in an unlimited fine.

A3.4.6 All tree works, including tree removals, should be carried out by a fully insured and suitably qualified arboricultural contractor who is able to comply with *BS 3998: 2010: Tree Works - Recommendations*.

A3.5 Tree Protection Fencing

A3.5.1 Tree protection barriers shall be installed prior to the commencement of development works, and should be fit for the purpose of excluding site personnel and machinery. The default specification should be in accordance with *BS 5837: 2012*, as is set out below.



Figure A5.1: Example of mesh welded type barriers in-situ

A3.5.2 Specification: Barriers shall be a minimum 2 m high, and should consist of a vertical and horizontal scaffold framework, well braced to resist impacts, as illustrated in **Fig. A5.1**, above, and **Fig. A5.2**, below.

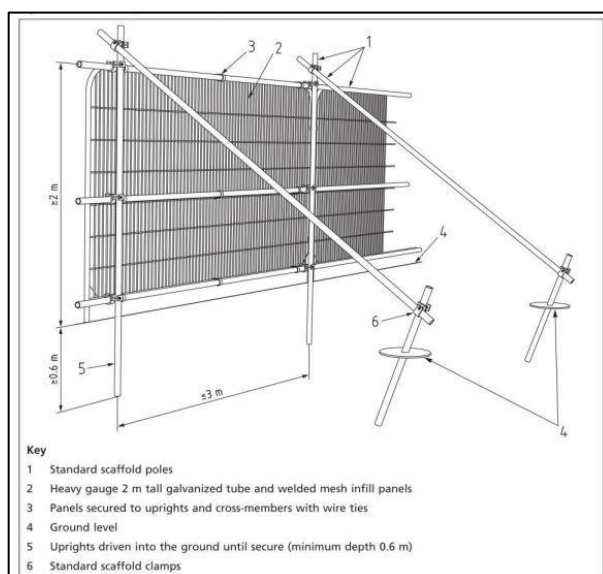


Figure A5.2: Temporary 2 m steel protective fencing



A3.5.3 The vertical tubes should be spaced at a minimum interval of 3 m and driven securely into the ground. Onto this framework, welded mesh panels should be securely fixed.

A4.5.4 All-weather notices should be attached to the barriers at 9 m intervals with the words 'TREE PROTECTION ZONE - NO ACCESS' clearly visible.

A4.5.5 Location: Temporary tree protection fencing should be installed around the root protection areas (RPAs) of the trees, and should be installed in the following stages:

1. Tree protection fencing should be installed prior to the completion of the retaining wall repairs, as is illustrated in **Appendix 7: Tree Protection Plan 1**.
2. Upon completion of the retaining wall repairs, the tree protection fencing should then be realigned, and further ground protection should be installed to facilitate construction of the dwelling, as is illustrated in **Appendix 8: Tree Protection Plan 2**.

A4.5.6 The protected areas should be regarded as sacrosanct, and once installed, tree protection fencing should not be removed or altered without prior consultation with the Project Arboriculturist.

A4.5.7 If any breach in the tree protection fencing occurs, it is the Site Manager's responsibility to report this to the Project Arboriculturalist, so that appropriate measures may be taken. Any breach which results in death or damage to the trees could result in a criminal offence being committed.

A3.6 Additional Details

A3.6.1 No materials hazardous to tree health, such as oil, bitumen or cement should be stored within the protective fencing. Where possible this area should be extended to 10 m away from the fencing.

A3.6.2 Where there is a risk of polluted water runoff into RPAs, heavy duty plastic sheeting and sandbags must be used to contain any spillages and prevent contamination. No fires should be lit within 20 m of the protective fencing.

A3.6.3 As the majority of tree roots are typically found within the first 100 cm of ground level - particular attention should also be paid to existing levels - which should be observed and maintained within tree RPAs. Any unavoidable excavations into the soil within RPAs should be carried out by use of hand-operated tools only, and only under prior approval of the Project Arboriculturalist. No roots > 25 mm in diameter should be severed without first consulting the Project Arboriculturalist.

A3.7 Ground Protection

A3.7.1 Where tree protection fencing has been set back within the RPAs of T018 and T019 in **Appendix 8: Tree Protection Plan 2**, ground protection should be installed prior to the commencement of development works.

A3.7.2 The ground protection should cover all areas of soft-landscaping within RPAs that are left exposed and should remain in place until the completion of the development works.



Figure A7.1: Examples of ground protection panels



A3.7.3 Ground protection should consist of inter-linked boards placed on top of a compression-resistant layer (e.g. 150 mm depth of woodchip) which are laid onto a geotextile membrane, as illustrated in **Fig. A7.1**, on the previous page.

A3.7.4 Any plant or machinery operating within the RPAs of T018 and T019, must ensure it does so upon ground protection at all times.

A3.8 Installation Method Statement for fencing with the tree RPAs

A3.8.1 Fencing is proposed to the west of the site and will pass through the RPA of T010.

A3.8.2 Installation of the proposed fencing within tree RPAs should adhere to the following guidelines:

1. No part of any fencing is to be attached to the adjacent trees.
2. The post dimensions are to be a maximum of 100 mm x 100 mm; holes are to be hand-dug to a depth of 600 mm.
3. If significant roots > 25 mm in diameter are encountered, posts will be repositioned. No roots > 25 mm diameter without consulting with the Project Arboriculturalist. If roots under this diameter are present, they will be pruned using an appropriate sharp pruning tool such as pruning saw or secateurs. Any exposed roots will be covered with sharp sand.
4. Posts will be set in concrete and holes lined with polythene to minimise leaching.
5. Concrete will be mixed outside of tree RPAs and transported to site.

A3.9 Responsibility and Site Management

A3.9.1 It is the responsibility of the main contractor or assigned agent to ensure that details regarding tree protection are understood and followed by all site personnel.

A3.9.2 It is recommended that inspections by the Project Arboriculturalist are undertaken at the following stages:

1. Once tree protection fencing has been installed - prior to completion of retaining wall repairs - to determine if these measures are satisfactory.
2. Whilst excavations within the RPA of T013 are carried out, to ensure tree roots are not adversely impacted.
3. Once tree protection fencing has been realigned, and ground protection has been installed - prior to completion of development works - to determine if these measures are satisfactory.
4. Upon completion of the development works.

A3.9.3 After each inspection, a letter should be submitted by the Project Arboriculturalist to the LPA Arboricultural Officer, to confirm if the method statement has been followed correctly, and if trees have not been adversely affected by construction works.

A3.9.4 Project Arboriculturalist Details:

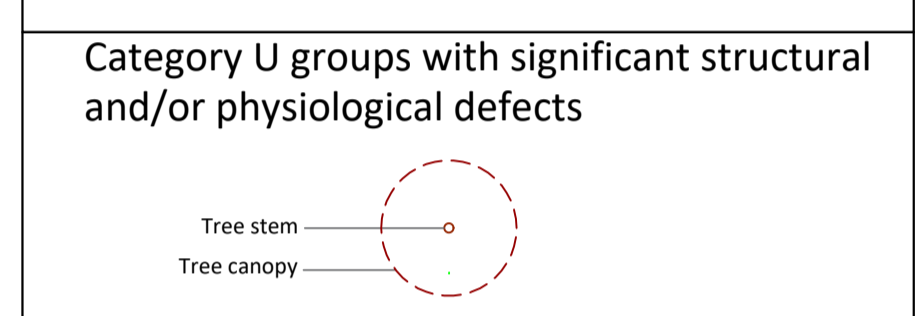
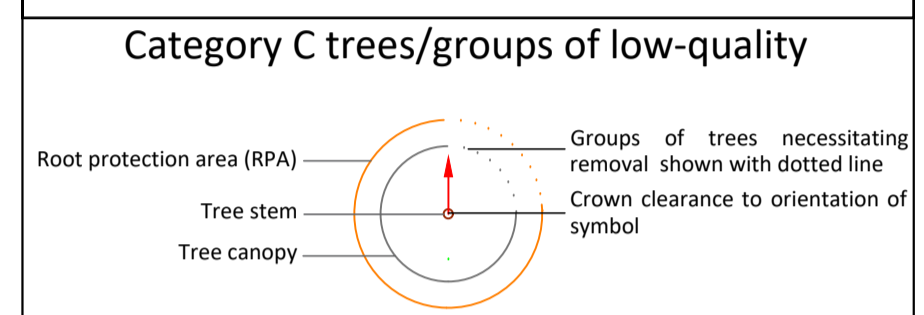
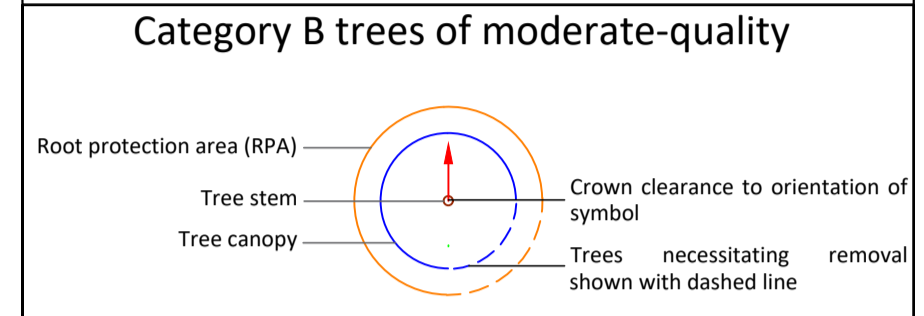
Mr Jack Delaney
Woodsage Consulting Ltd
Unit 2, Hey End Farm,
Shield Hall Lane,
Luddendenfoot,
West Yorkshire HX2 6JN
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Email: info@woodsage.co.uk

Appendix 4: Tree Constraints Plan 1

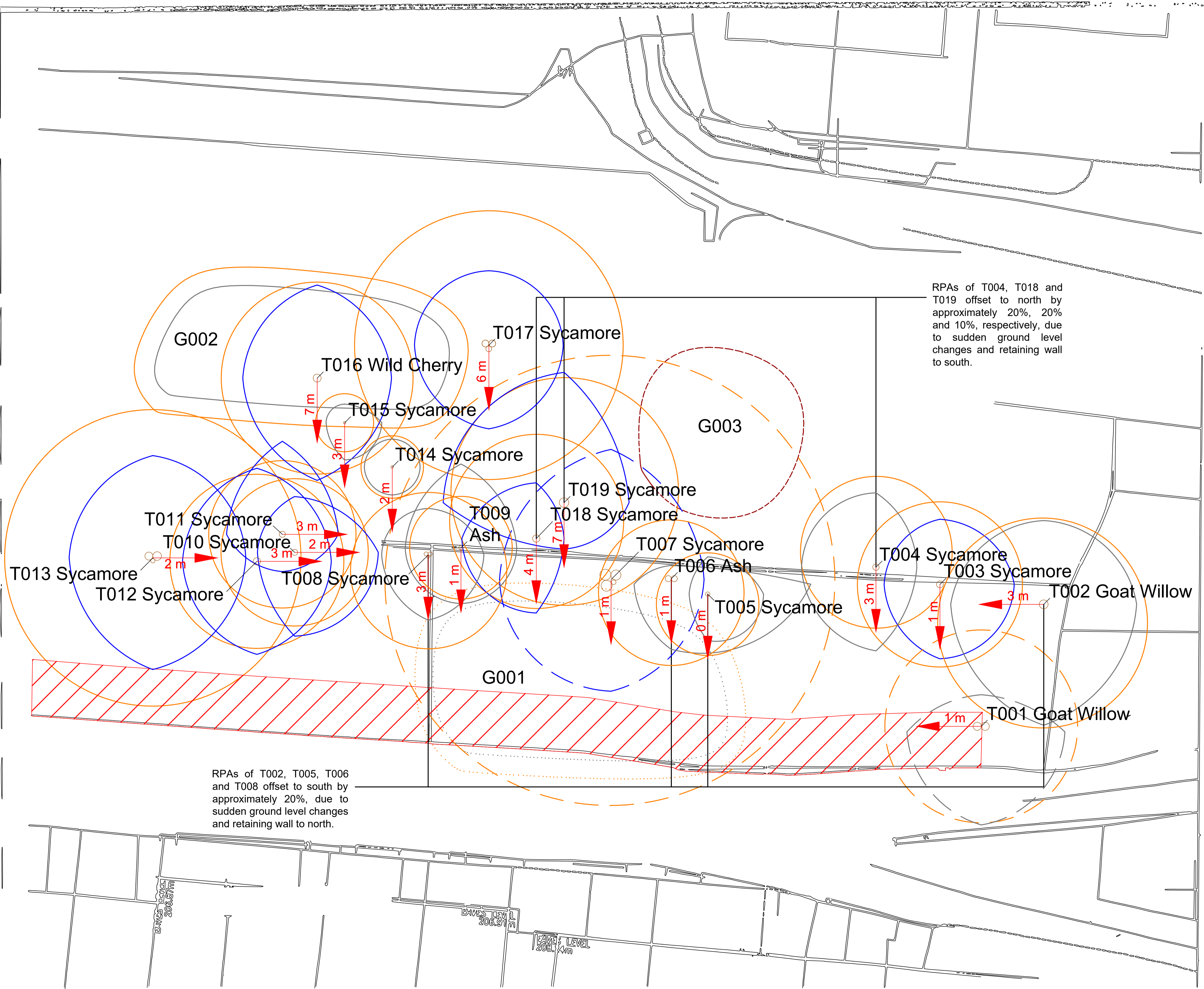
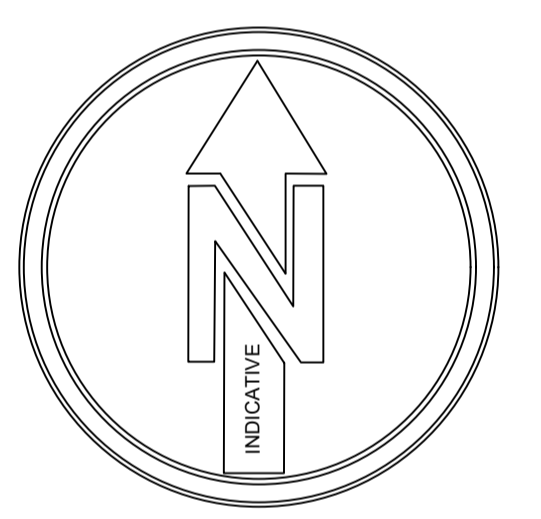
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Drawn by:	Jack Delaney
Date:	10th May 2023
Scale:	1:100 @ A1
Drawing Number:	WC-158.1a.4

Do not scale off this drawing - to be reproduced in colour only

Key:



Footprint of proposed retaining wall (excavations extending 3 m backwards from existing wall frontage)



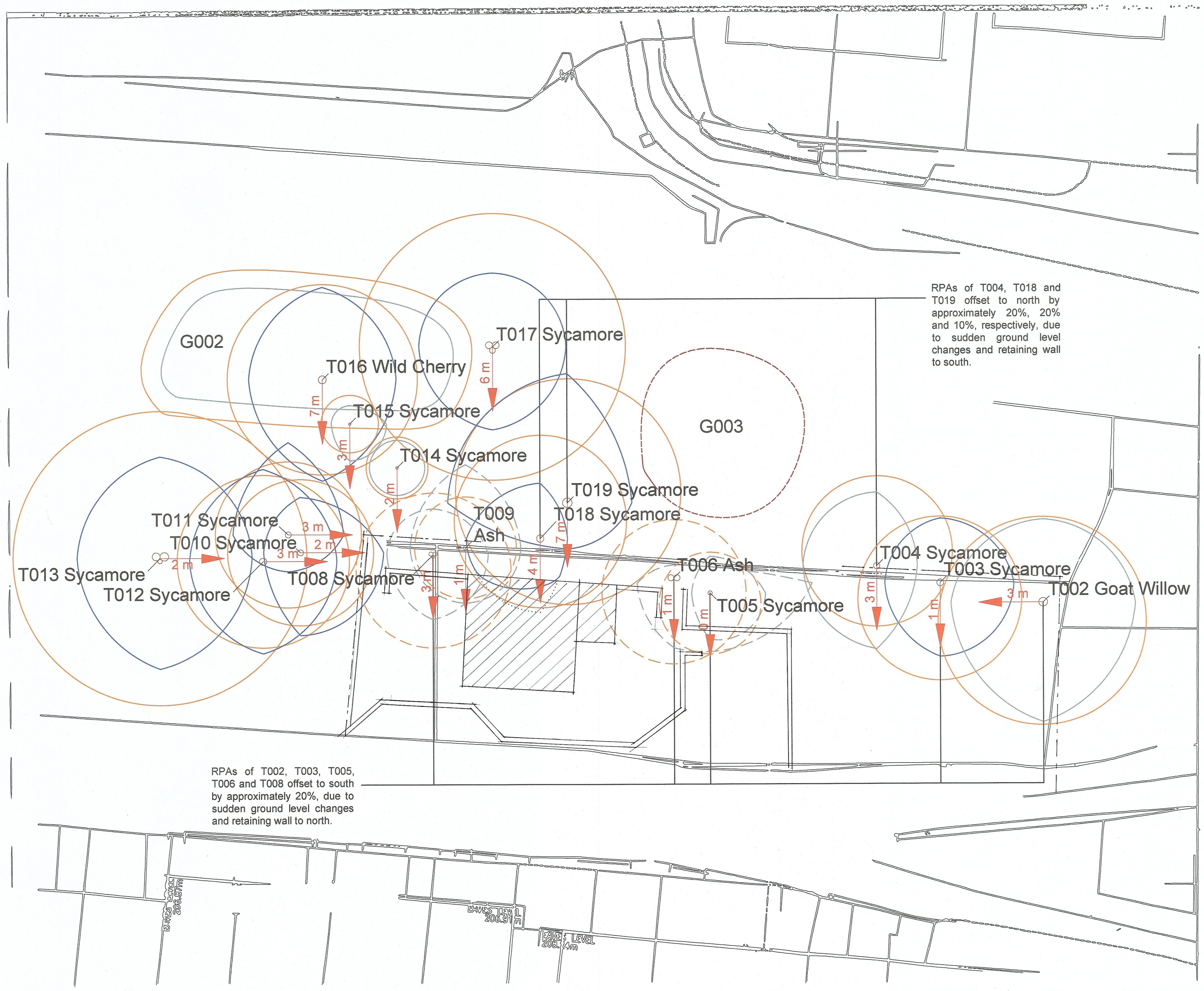
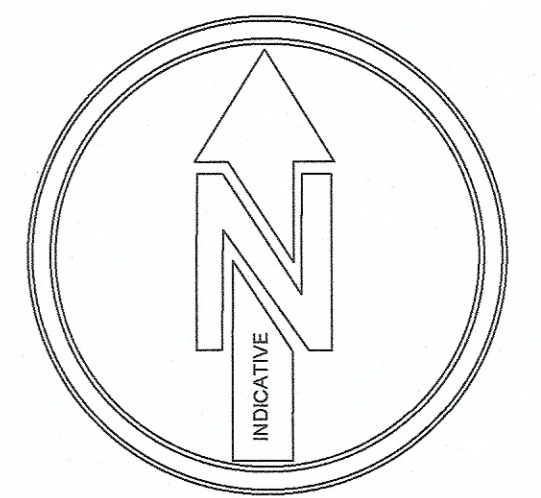
**Appendix 5:
Tree Constraints Plan 2**

Project:	Land off Ridings Lane, Golcar, Huddersfield
Drawn by:	Jack Delaney
Date:	11th May 2023
Scale:	1:100 @ A1
Drawing Number:	WC-158.1a.5

Do not scale off this drawing - to be reproduced in colour only

Key:

Category B trees of moderate-quality	
	Trees requiring facilitative pruning shown with dotted line Crown clearance to orientation of symbol
Category C trees/groups of low-quality	
	Crown clearance to orientation of symbol Trees necessitating removal shown with dashed line
Category U groups with significant structural and/or physiological defects	
	Tree stem Tree canopy



RPAs of T002, T003, T005, T006 and T008 offset to south by approximately 20%, due to sudden ground level changes and retaining wall to north.

RPAs of T004, T018 and T019 offset to north by approximately 20%, 20% and 10%, respectively, due to sudden ground level changes and retaining wall to south.

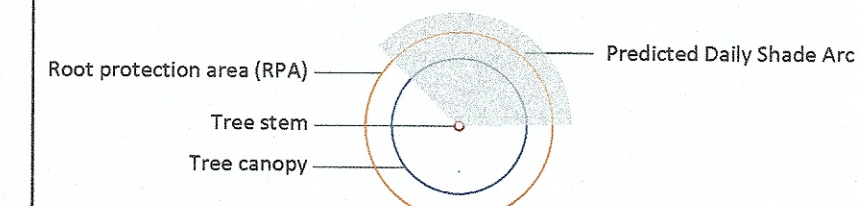
Appendix 6: Shade Analysis Plan

Project:	Land off Ridings Lane, Golcar, Huddersfield
Drawn by:	Jack Delaney
Date:	11th May 2023
Scale:	1:100 @ A1
Drawing Number:	WC-158.1a.6

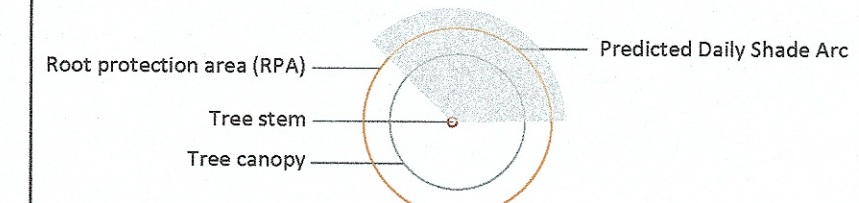
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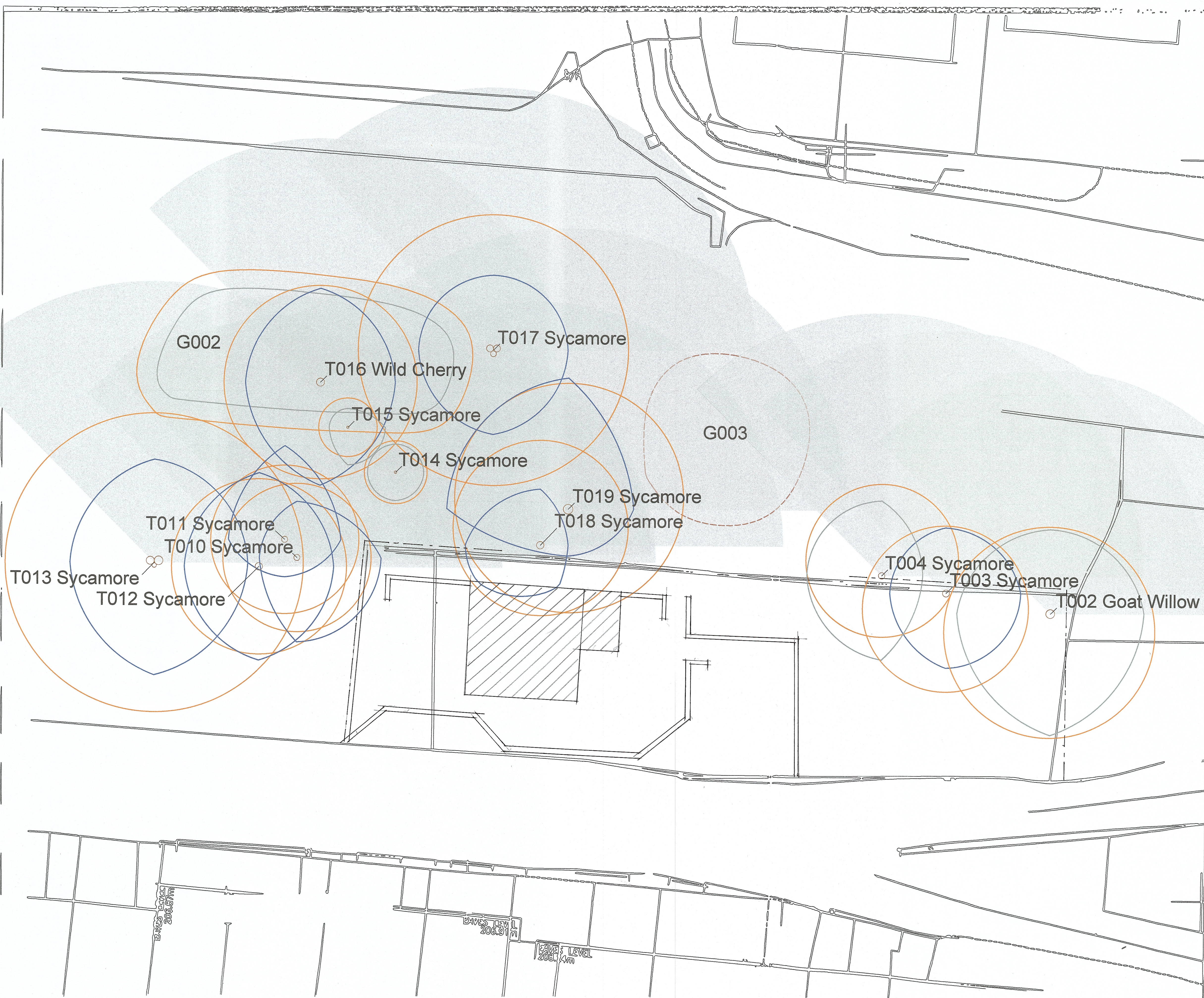
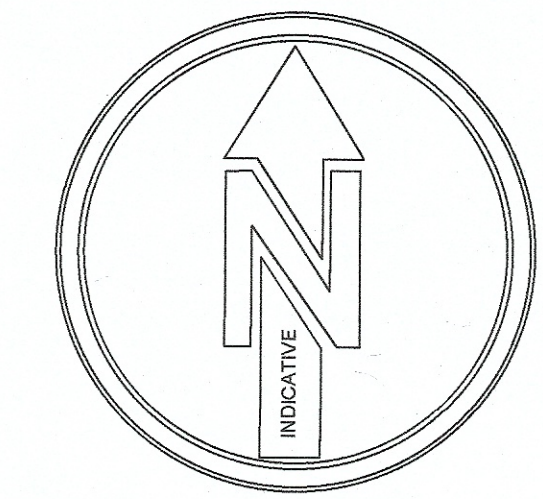
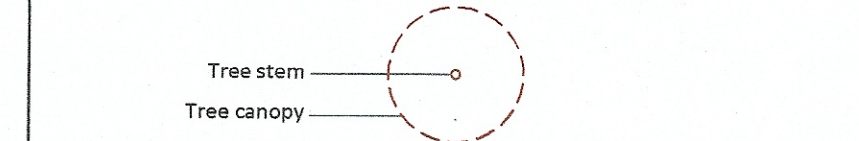
Category B trees of moderate-quality



Category C trees/groups of low-quality



Category U groups with significant structural and/or physiological defects



Appendix 7: Tree Protection Plan 1

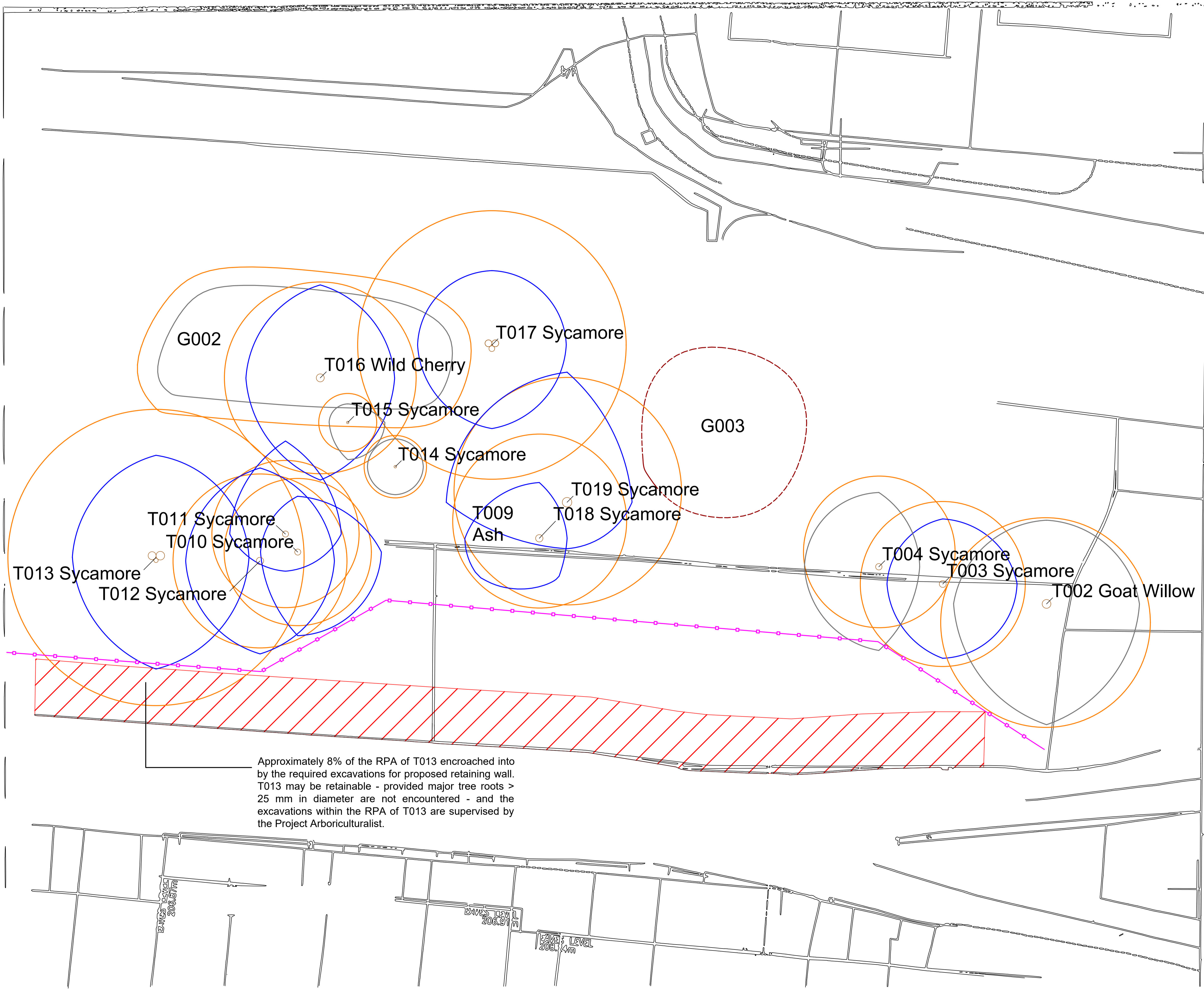
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Drawn by:	Jack Delaney
Date:	10th May 2023
Scale:	1:100 @ A1
Drawing Number:	WC-158.1a.7

Do not scale off this drawing - to be reproduced in colour only

Key:

Category B trees of moderate-quality	
Category C trees/groups of low-quality	
Category U groups with significant structural and/or physiological defects	

	Footprint of proposed retaining wall (excavations extending 3 m backwards from existing wall frontage)
	Temporary tree protection fencing, to BS 5837: 2012 specification, as detailed in Appendix 3: Arboricultural Method Statement



Approximately 8% of the RPA of T013 encroached into by the required excavations for proposed retaining wall. T013 may be retainable - provided major tree roots > 25 mm in diameter are not encountered - and the excavations within the RPA of T013 are supervised by the Project Arboriculturalist.

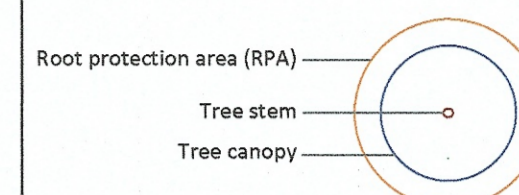
**Appendix 8:
Tree Protection Plan 2**

Project:	Land off Ridings Lane, Golcar, Huddersfield
Drawn by:	Jack Delaney
Date:	11th May 2023
Scale:	1:100 @ A1
Drawing Number:	WC-158.1a.8

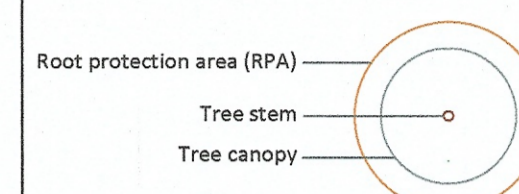
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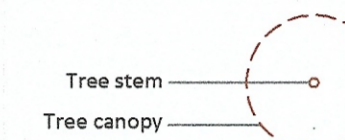
Category B trees of moderate-quality



Category C trees/groups of low-quality

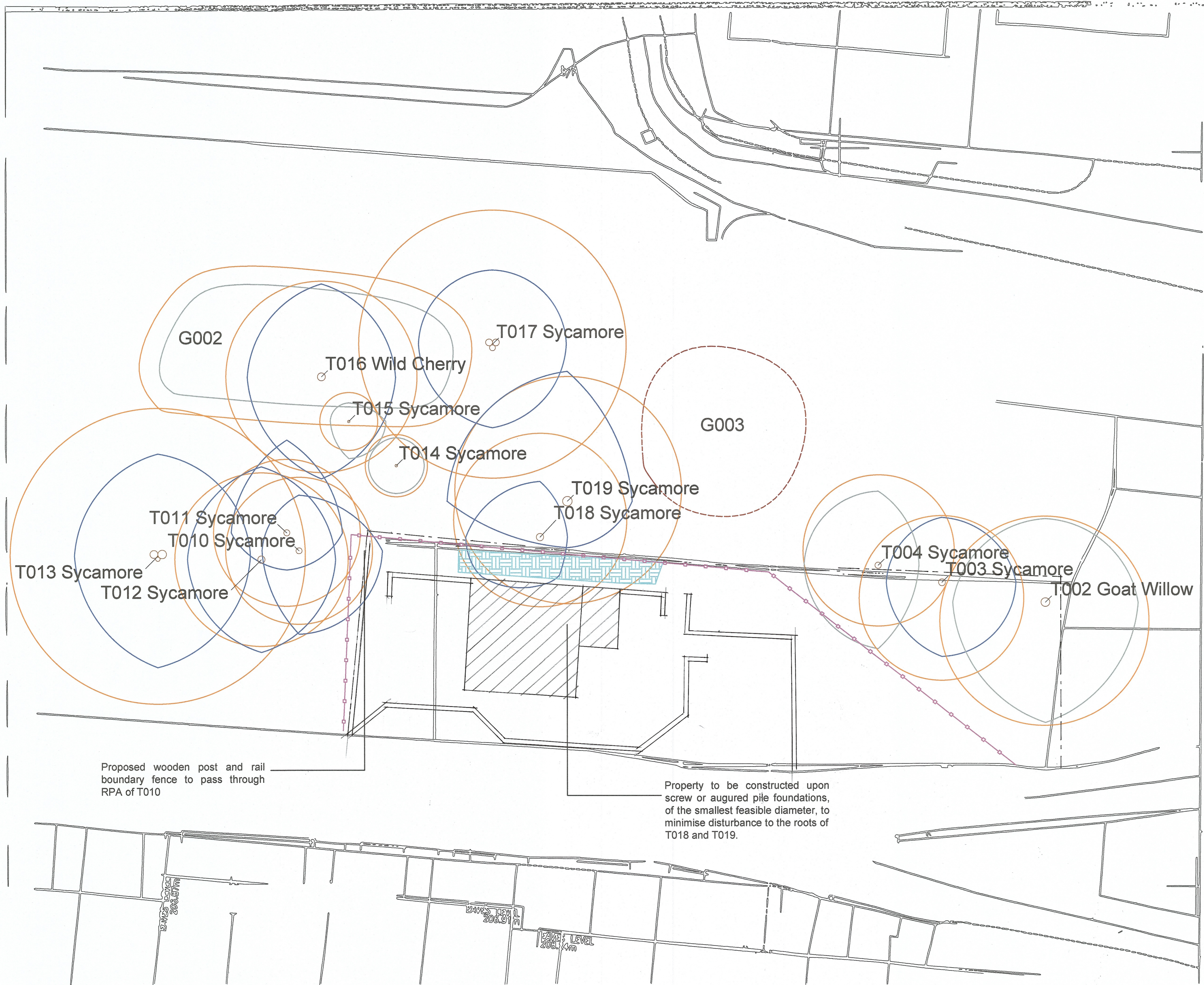


Category U groups with significant structural and/or physiological defects



Temporary tree protection fencing, to BS 5837: 2012 specification, as detailed in **Appendix 3: Arboricultural Method Statement**

Temporary ground protection, to BS 5837: 2012 specification, as detailed in **Appendix 3: Arboricultural Method Statement**



Proposed wooden post and rail boundary fence to pass through RPA of T010

Property to be constructed upon screw or augured pile foundations, of the smallest feasible diameter, to minimise disturbance to the roots of T018 and T019.



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Appendix 9: Structural Engineer Retaining Wall Drawings

