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**ARBORICULTURAL IMPLICATIONS ASSESSMENT
FOR PROPOSED HAUL ROAD AND ACOUSTIC BUNDS**

AT

**HOOKLANDS FARM
LONDON ROAD
ASHINGTON
PULBOROUGH
RH20**

by

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1. INTRODUCTION

- 1.1 Broad Oak Tree Consultants Ltd. received instructions from Penfold Verral to undertake an inspection of trees located on and immediately adjacent to the site referred to as Hooklands Farm, London Road, Ashington, Pulborough, RH20. The purpose of the inspection was to produce a base inventory of the tree stock and an Arboricultural Implications Assessment of development proposals.
- 1.2 The proposals are for the construction of two acoustic bunds on either side of the access drive to Hooklands Farm to help attenuate the noise of the A24. Construction of the bunds will require a separate access haul road to be constructed. This is proposed to pass through fields to the west of Hooklands Farm and link into the existing old A24 road next to No. 2 Hooklands Lodge. Details of the proposals will have been submitted by Penfold Verral and Ashdown Planning Consultants.
- 1.3 The trees were inspected in February 2022 by Tim Laddiman, BSc.(Hons) M.I.C.For. M.Arbor.A., Chartered Arboriculturist and Principal Consultant of Broad Oak Tree Consultants Ltd.
- 1.4 At the time of reporting online checks with Horsham District Council have indicated that site is not within a Conservation Area and no Tree Preservation Orders are indicated to be present. Online checks with Magic Map did not indicate the presence of any Ancient Woodland within or adjoining the site.

2. GENERAL SITE DESCRIPTION

- 2.1 Hooklands Farm is located on the north side of the A24, accessed via a long north-west/south-east orientated access drive with fields either side.
- 2.2 Parallel with the A24 are deciduous and evergreen species linear belts of woodland, presumably planted for screening and acoustic properties prior or at the time of the A24 being constructed. The other field boundaries are also tree lined, as is the access drive.
- 2.3 Further fields surround Hooklands Farm and to the south-west, parallel with the A24 is the old A24 road which ends next to Nos. 1 and 2 Hooklands Lodge, with a footpath continuing across the site and through the grounds of Hooklands Farm.

3. SCOPE OF TREE SURVEY

- 3.1 Only those trees potentially affected by the proposed acoustic bunds and temporary haul road were included in the inspections. For the trees along the access drive but unaffected by the haul road crossover point only root protection areas (RPAs) were calculated for each tree with general descriptions within linear groups.

4. DATA COLLECTION

- 4.1 All trees were inspected from the ground and no climbing or specialist investigations were undertaken. Each tree was inspected to the requirements of Section 4.4 "Tree Survey" of BS 5837:2012 "Trees in Relation to Design, Demolition and Construction - Recommendations".

4.2 The tree survey followed the numbered sequence from G1-G49 inclusive. Tree numbers, together with BS recommended colour coding of condition, have been added to the Tree Constraints Plan, our drawing no. J61.50/01 Sheets 1 and 2 in Appendix 2. This drawing also includes crown spreads based on four compass points and BS calculated root protection areas.

4.3 The following categories of information were obtained for each tree. Separate detailed tree survey sheets are attached in Appendix 1, together with comprehensive explanatory sheets which cover the details of the categories listed below.

- (1) Tree reference number
- (2) Species
- (3) Height in metres
- (4) Stem count
- (5) Stem diameter or equivalent in millimetres
- (6) Branch spread in metres
- (7) Age class
- (8) Height of crown clearance in metres
- (9) Physiological condition
- (10) Estimated remaining contribution in years
- (11) Category grading
- (12) Structural condition
- (13) Preliminary management recommendations

4.4 Within the assessment of physiological condition and remaining contribution, a visual inspection of each tree was undertaken to assess the crown and stem for any weak structures, deadwood, hollows, forks or other defects that might affect its stability and safety. The base of each tree was also visually inspected, together with tapping and probing, to search for signs of root lifting, bark death or decay. Where stems were heavily ivy clad, no full assessment of structural integrity could be undertaken. Clearance of the ivy would be necessary for confirmation of tree condition.

5. RISK ASSESSMENT - INFORMATIVES

5.1 Although the potential risk to someone passing beneath a tree when the tree or part of it fails is relatively remote, the risk is present. This increases significantly in areas of consistent and regular usage on a year round basis, such as footpaths, gardens and roadways. Where static structures exist, the risks become constant and an assessment is made as to whether complete or partial failure of a tree could potentially cause physical damage to such structures.

5.2 Within the scope of any tree survey it is a fact that not all risks of stem or crown failure can be covered, particularly in relation to freak occurrences of weather when even healthy trees can suffer stem snap or windblow. There is also a well known propensity for mature trees to occasionally shed limbs for no discernible reason, even on calm days. Although relatively rare, limbs may occasionally be shed and this should be acknowledged as a risk that cannot entirely be mitigated.

6. RESULTS OF TREE INSPECTIONS

- 6.1 A total of 49 individual trees, linear groups and belts of woodland were inspected, ranging from young Field Maples of less than 15 years of age to field boundary Oaks of upto 200 years of age.
- 6.2 The various field boundaries typically comprise mature Oak and Ash amongst overgrown hedgerows, with canopy tree densities higher than commonly seen in hedgerows. Many of the Ash have developed as secondary trees and are crowded or drawn up, with a number showing canopy decline of varying degrees associated with Ash Dieback.
- 6.3 The wooded belts to the south, parallel with the A24 (G48 and G49) appear to have been planted as acoustic and visual barriers, as they both have evergreen species in their cores. Some of these have suffered complete/partial windthrow over the years with most drawn up and heavily crowded.
- 6.4 Along either side of the access drive to Hooklands Farm are developing deciduous trees, planted to form an avenue effect. These mainly comprise Oak and some Ash, but appear of varying ages and its unclear as to the timing and history of the avenue. Most of the younger trees are sub dominant and heavily suppressed/asymmetrical, with the Ash present also suffering from Ash Dieback. This disease will see most of the Ash lost on the site over the next ten years.
- 6.5 Of the trees inspected, the following is a breakdown of the various numbers of trees and groups in each BS category.

BS Category	Tree No.	Sub Total
A	19, 44	2
B	11, 12, 17, 21, 28, 32, 45	7
B/C	G22, G23, G27, G33, G43, G47	6
B/U	G15, G35, G48, G49	4
C		19
C/U	G4, G9	2
U	5, 6, 7, 8, 14, 20, 38, 40, 41	9
	TOTAL	49

6.6 *Interpretation of table*

Category A Retention most desirable. Of high quality and value and in such a condition as to be able to make a substantial contribution (a minimum of 40 years is suggested).

Category B Retention desirable. Of moderate quality and value and in such a condition as to make a significant contribution (a minimum of 20 years is suggested).

Category B/C Groups of trees that include individuals of varying qualities that fall into the category B and C classifications or where individuals may be of Category C quality but as a whole they have a higher value.

- Category B/U** Trees that would be included in category B but have structural faults, areas of decay, etc. that require more detailed investigations or climbing inspections to ascertain whether or not they can be safely retained.
- Category C** Could be retained – of low quality and value. Poor crown form, heavily asymmetric, large numbers of similar species/size. Currently in adequate condition to remain until new planting could be established (a minimum of 10 years is suggested) or young trees with a stem diameter below 150mm.
- Category C/U** Trees that would be included in category C but have structural faults, areas of decay, etc. that require more detailed investigations or climbing inspections to ascertain whether or not they can be safely retained. Groups that include dead/dying/dangerous individuals.
- Category U** Trees for removal. Dead/dying/dangerous trees due to structural defects, fungal decay or root plate uplift. Those in such a condition that any existing value would be lost within 10 years and which should, in the current context, be removed for reasons of sound arboricultural management.

7. BS CALCULATED ROOT PROTECTION AREAS (RPAs)

- 7.1 To provide an indication of the critical areas of root plate necessary for tree survival and longevity, BS 5837:2012 requires the calculation of RPAs for trees in the BS Categories A, B and C. Calculations are not made for Category U trees which will require removal on safety grounds within 10 years.
- 7.2 The table in Appendix 3 has been calculated using the measured stem diameters and the formula as described in Section 4.6 in BS 5837:2012. These are represented as basic circles on the Tree Constraints Plan. Where buildings, walls, services and hard surfacing exist within the indicated RPAs it is likely that the architecture of root systems will have been affected. Foundations to walls and buildings can completely obstruct root development, depending on their depth and the nature of the underlying soils. In the absence of detailed site investigations the indicated RPA circles should be used for guidance only within any development proposals.

ARBORICULTURAL IMPLICATIONS ASSESSMENT

8. DEVELOPMENT PROPOSALS

- 8.1 The proposals are for the construction of two acoustic bunds on either side of the access drive to Hooklands Farm to help attenuate the noise of the A24. Construction of the bunds will require a separate access haul road to be constructed. This is proposed to pass through fields to the west of Hooklands Farm and link into the existing old A24 road next to No. 2 Hooklands Lodge. Details of the proposals will have been submitted by Penfold Verral and Ashdown Planning Consultants.
- 8.2 The supplied overlay of the proposed haul road and acoustic bunds has been used as the base for the Broad Oak Tree Consultants Ltd. Tree Protection Plan, drawing no. J61.50/02 Rev. A Sheets 1 and 4 in Appendix 4. These indicate trees for removal and measures to protect retained trees in accordance with BS5837:2012 requirements.

9. TREES FOR REMOVAL

- 9.1 Based on the supplied proposals no trees require removal for the acoustic bunds.
- 9.2 For the haul road tree removals are only necessary for its initial access point next to Hooklands Lodge and for its crossing point on the access drive to Hooklands Farm. In both locations the haul road has been adjusted and positioned to have the least possible impact on trees, removing only lower quality trees where at all possible. Replanting of trees lost on the access drive is proposed part development to maintain the visual integrity of the avenue.
- 9.3 The trees requiring removal for the haul road are as follows:

Table: Trees for removal

Tree No.	Species	BS Category	Comments
T5	Ash	U	Ash Dieback.
G9	Willow, Hawthorn, Blackthorn, Ash	C/U	Area of scrub. Numerous past collapsed stems. Waterlogged area.
T10	Common Oak	C	Young tree. Leaning heavily E. Cavity in base to E.
T30	Common Oak	C	Young tree. Crowded. Poor form.
T31	Common Oak	C	Young tree. Crowded. Poor form.
T37	Common Oak	C	Crowded. Poor health.
T38	Ash	U	Ash Dieback.
T39	Common Oak	C	Small, young tree. Supressed and bowed to N.
T40	Ash	U	Ash Dieback.

- 9.4 The Ash that require removal all have Ash Dieback and only a few years to live, hence their BS category U classification. BS category U trees are of no planning relevance, according to BS5837:2012.

- 9.3 All of the other trees for removal are BS category C and are either small, young, poorly formed or a combination. They have no significance within their setting, with all the main feature trees and groups retained. As BS category C trees they should not represent a constraint to the proposals, according to BS5837:2012.
- 9.4 For trees T30, T31, T37, T38, T39 and T40 replacement planting post construction will be required by the landowner to maintain the integrity of the avenue along the access drive.
- 9.5 The trees for removal for the haul road are indicated as such with blue dashed crown outlines on the Tree Protection Plan.

10. POTENTIAL IMPACT OF PROPOSALS ON RETAINED TREES

- 10.1 The proposed acoustic bunds have been designed to avoid impacting on any retained tree RPAs. As such there are no grounds for a refusal on arboricultural matters.
- 10.2 The haul road has been aligned, where practical, outside of the RPAs of retained trees.
- 10.3 There are two crossing points where the design of the haul road will need to account for root presence and minimise ground compaction through design.
- 10.4 For T11 Oak the haul road passes through the outer edge of the RPA on the top of a bank, rising from waterlogged ground. The haul road will have to be built up in this location to cross the wet ground. Where it passes through the outer edge of the RPA the haul road is to be built up using a cellular confinement system, such as Geoweb, or inter locking temporary road plates. These will be to specifications to match the lorry weights required to minimise ground compaction.
- 10.5 At the crossing point between fields the haul road passes through the RPA of T19 Oak where ground levels dip to the existing culverted crossing. The haul road at this point will have to be built up for the crossing point. As for T11 the build-up will need to incorporate a cellular confinement system to spread the vehicle loading across the entire width of the road, specific to the vehicle weights required.
- 10.6 This approach to design will accord with Section 7.4 "Permanent hard surfacing within the RPA" of BS5837:2012 and the AA Guidance Note 12 "The use of cellular confinement systems near Trees". However, it differs in that the haul road will be removed on a rolling back basis once the bunds have been built.
- 10.7 Details of the specific build ups and cross sections could be required in response to a precommencement condition.
- 10.8 By applying this design approach extensive ground compaction and potential root damage can be avoided.
- 10.9 These measures are indicated on the Tree Protection Plan.

11. TREE PROTECTION MEASURES – FENCING

11.1 *Location of fencing*

11.1.1 The Tree Protection Plan indicates the proposed location of protective fencing based on the calculated tree protection areas and space available.

11.2 *Design of fencing*

11.2.1 Where indicated on the Tree Protection Plan the protective fencing is to be constructed of scaffold uprights driven into the ground to a minimum depth of 0.6m and at no greater than 3m spacing. Uprights to be braced with angled scaffold poles and anchors. On to the uprights weldmesh panels such as “Heras” or a similar product will be securely mounted with all weather notices attached to every 5th panel reading “Keep Out – Protected Area”. The fencing will form enclosed areas to which no access will be allowed. This design of fencing is considered appropriate to the site and scale of development proposed.

11.2.2 Examples of the fencing specification and signage required are included in Appendix 5.

11.3 This standard BS5837:2012 design of fencing is proposed for the key crossing points where vehicles will be closest to the retained trees.

11.4 Due to the extensive size of the site this specification fencing would be excessively expensive for fencing around the entire perimeter of the fields and haul road. To define the general working areas for the haul road and acoustic bund works it is proposed that high tensile deer fencing is utilised. This can be installed by specialist contractors and when tensioned has similar properties and dimensions to the weldmesh panels. This is considered a practical and appropriate solution to the specific site circumstances. The different types of fencing are indicated by different coloured line types on the Tree Protection Plan.

11.5 *Timing of fencing*

11.5.1 Protective fencing is to be erected prior to commencement of site works and remain in place until completion of construction. The location and suitability of the fencing can be confirmed to the local authority by an arboricultural consultant prior to commencement of construction. Any tree felling will need to be undertaken prior to fence installation to minimise risks to operatives. All tree surgeons’ vehicles will be kept outside the indicated protection zones utilising existing areas of hard standing and drive.

11.6 *Additional precautions*

11.6.1 Potentially injurious materials such as fuels, oils, chemicals and cement will be stored at least 20m from any stem, or in a bunded storage vessel. No fires will be lit within 5m of the drip line of any retained tree. No level changes will occur, either raising or lowering within the protected areas. A list of these additional precautions are included on the Tree Protection Plan.

12. SUMMARY

- 12.1 The proposed acoustic bunds do not require any tree removals and are designed to avoid any surrounding tree RPAs. As such there are no arboricultural grounds for a refusal.
- 12.2 The temporary haul road for the construction of the bunds will require the removal of eight individual trees and one small area of scrub. Three of these trees are BS category U and the remainder are BS category C (the group is C/U due to collapsed elements). All are small, young and/or poorly formed and do not contribute significantly to the setting or landscape. The six trees for removal within the access drive avenue are to be replaced once works have been completed to maintained the integrity of this feature.
- 12.3 As such these should not represent a constraint to the proposals, according to BS5837:2012.
- 12.4 Two crossing points for the haul road will pass through two tree RPAs. Within these areas the haul road build up is to incorporate engineering features specifically designed to reduce loading and to avoid compaction and possible root damage.
- 12.5 Robust tree protection measures are proposed, specific to the site circumstances, to ensure that retained trees are appropriately protected for the duration of the works.
- 12.6 The Tree Protection Plan can be referred to as an approved drawing or in a specifically worded condition to ensure that the retained trees are appropriately protected during the haul road and acoustic bund construction works.

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APPENDIX 1

TREE SURVEY EXPLANATORY SHEET

Height	in metres (estimated where ground uneven or access restricted).
Stem count	number of stems
Stem diameter	in mm. at 1.5m. above ground level.
Branch spread	radial spread in metres at four main compass points (estimated where no access).
Age class	Young - Y Semi Mature - SM Mature - M Over mature - OM Veteran - V
Height of crown clearance	in metres. Normally range of heights of outer branches above ground level, e.g. 2-4m.
Physiological condition	Good, Fair, Poor, Dead, Variable
Estimated remaining contribution	in years e.g. less than 10, 10-20, 20-40, 40+
Category grading	see attached sheet
Structural condition	comment on presence of defects, decay, crown form, past management, deadwood, other features worthy of note. N.B. If trees are ivy clad, no full structural assessment will have been possible.
Preliminary management recommendations	requirements of further investigations, works necessary to alleviate potential hazards based on current setting and levels of access. NB: Works that may be necessary in relation to development are not included here

CASCADE CHART FOR TREE QUALITY ASSESSMENT

TREES FOR REMOVAL				
Category and definition	Criteria			Identification on plan
<p>Category U Those in such a condition that any existing value would be lost within 10 years and which should, in the current context, be removed for reasons of sound arboricultural management</p>	<ul style="list-style-type: none"> • Trees that have a serious, irremediable, structural defect, such that their early loss is expected due to collapse, including those that will become unviable after removal of other R category trees (i.e. where, for whatever reason, the loss of companion shelter cannot be mitigated by pruning) • Trees that are dead or are showing signs of significant, immediate and irreversible overall decline. • Trees infected with pathogens of significance to the health and/or safety of other trees nearby (e.g. Dutch elm disease), or very low quality trees suppressing adjacent trees of better quality <p>NOTE Habitat reinstatement may be appropriate (e.g. R category tree used as a bat roost: installation of bat box in nearby tree.)</p>			DARK RED
TREES TO BE CONSIDERED FOR RETENTION				
Category and definition	Criteria - Subcategories			Identification on plan
	1. Mainly arboricultural values	2. Mainly landscape values	3. Mainly cultural values, including conservation	
<p>Category A Those of high quality and value: in such a condition as to be able to make a substantial construction (a minimum of 40 years is suggested)</p>	<p>Trees that are particularly good examples of their species, especially if rare or unusual, or essential components of groups, or of formal or semi-formal arboricultural features (e.g. the dominant and/or principal trees within an avenue)</p>	<p>Trees, groups or woodlands which provide a definite screening or softening effect to the locality in relation to views into or out of the site, or those of particular visual importance (e.g. avenues or other arboricultural features assessed as groups)</p>	<p>Trees, groups or woodlands of significant conservation, historical, commemorative or other value (e.g. veteran trees or wood-pasture)</p>	LIGHT GREEN
<p>Category B Those of moderate quality and value: those in such a condition as to make a significant contribution (a minimum of 20 years is suggested)</p>	<p>Trees that might be included in the high category, but are downgraded because of impaired condition (e.g. presence of remediable defects including unsympathetic past management and minor storm damage)</p>	<p>Trees present in numbers, usually as groups or woodland, such that they form distinct landscape features, thereby attracting a higher collective rating than they might as individuals but which are not, individually, essential components of formal or semi-formal arboricultural features (e.g. trees of moderate quality within an avenue that includes better, A category specimens), or trees situated mainly internally to the site, therefore individually having little visual impact on the wider locality</p>	<p>Trees with clearly identifiable conservation or other cultural benefits</p>	MID BLUE
<p>Category C Those of low quality and value: currently in adequate condition to remain until new planting could be established (a minimum of 10 years is suggested), or young trees with a stem diameter below 150mm.</p>	<p>Trees not qualifying in higher categories</p>	<p>Trees present in groups or woodland, but without this conferring on them significantly greater landscape value, and/or trees offering low or only temporary screening benefit.</p>	<p>Trees with very limited conservation or other cultural benefits</p>	GREY
<p>NOTE Whilst C category trees will usually not be retained where they would impose a significant constraint on development, young trees with a stem diameter of less than 150mm should be considered for relocation</p>				

Tree ref. no.	Species	Height (m.)	Stem Count	Stem diameter or equivalent (mm.)	Branch spread (m.)				Age class	Ht. of crown clearance (m.)	Physiological condition	Estimated remaining contribution (years)	Category grading	Structural condition and Notes	Preliminary management recommendations
					N	E	S	W							
G1	Field Maple	<9	1/Multi	<250	<5	<4	<5	<4.5	Y	0.5+	Fair	20-40	C2	Possibly overgrown hedgeline.	
G2	Field Maple, Ash, Wild Cherry	<10	1/Multi	<200	<4	<3	<3	<5	Y	2+	Variable	10-40	C2	Crowded.	
G3	Ash, Hawthorn, Field Maple	<12	1/Multi	<250	<3	<3	<4	<2	Y	1+	Variable	10-40	C2	Crowded. Drawn up. Hawthorn forms suppressed understorey.	
G4	Blackthorn	<3.5	Multi	<200	<2	<1	<1	<2	SM	0+	Variable	<10-40	C/U1	Topped in past couple of years for phone lines. Crowded.	
5	Ash	11	2	420	5	4	4.5	5.5	SM	3+	Poor	<10	U	Twin stemmed from ground level. Deadwood. Ash Dieback.	
6	Ash	12	1	270	4	0	3	6	SM	6+	Poor	<10	U	Leaning heavily W. High crown. Early Ash Dieback.	

Tree ref. no.	Species	Height (m.)	Stem Count	Stem diameter or equivalent (mm.)	Branch spread (m.)				Age class	Ht. of crown clearance (m.)	Physiological condition	Estimated remaining contribution (years)	Category grading	Structural condition and Notes	Preliminary management recommendations
					N	E	S	W							
7	Ash	15	Multi	770	10	2.5	5	5.5	M	3.5+	Poor	<10	U	Multi stemmed near ground level. Two co-dominant stems. Crowded to W. Ash Dieback.	
8	Willow	6	Multi	260	6	1	5	9	SM	0+	Poor	<10	U	Collapsed in past. Several vertical regrowth stems. Overtopped.	
G9	Willow, Hawthorn, Blackthorn, Ash	<9	1/Multi	<150	<3	<3	<3	<3	Y/SM	0+	Variable	<10-40	C/U1	Area of scrubs. Numerous part collapsed stems.	
10	Common Oak	7	1	290	4	6	3.5	0	Y	3+	Poor	10-20	C1	Leaning heavily E. Cavity in base to E.	
11	Common Oak	15	1	c750	7.5	2.5	7	6	M	2+	Fair	20-40	B2	Deadwood. Crowded to E. Burred and swollen stem at 1m-1.3m. Slight lean to S.	
12	Common Oak	15	1	960	8	7	9	10	M	2+	Fair	20-40	B2	Deadwood. Multi stemmed from 4m. Several decayed wounds in join. Past storm damage.	

Tree ref. no.	Species	Height (m.)	Stem Count	Stem diameter or equivalent (mm.)	Branch spread (m.)				Age class	Ht. of crown clearance (m.)	Physiological condition	Estimated remaining contribution (years)	Category grading	Structural condition and Notes	Preliminary management recommendations
					N	E	S	W							
13	Ash	10	1	350	8	4	0	4.5	SM	1+	Poor	10-20	C1	Supressed. Stem bowed to N. at 2m.	
14	Ash	14	1	540	6	1.5	5	5	M	3+	Poor	<10	U	Crowded. Twin stemmed at 50cm. One stem dominant. Decayed stubs of several other stems. Ash Dieback and deadwood.	
G15	Ash, Common Oak	<20	1/Multi	<800	<10	<9	<10	<9	SM/M	1.5+	Variable	<10-40+	B/U1	Hedgeline of inter competing trees. Mostly mature Oak and occ. Ash with secondary Ash growth, mostly crowded/supressed and leaning N. Ash Dieback in some of the Ash. Dense Blackthorn understory to field side.	
16	Common Oak	13	1	490	10.5	3	1	9.5	SM	2.2+	Fair	20-40	C1	Crowded. Slight lean to NW. Long limbs.	
17	Common Oak	15	1	c700	4	10	8	6	M	2.5+	Fair	20-40	B2	Crown mainly to E. and S. off large limbs.	

Tree ref. no.	Species	Height (m.)	Stem Count	Stem diameter or equivalent (mm.)	Branch spread (m.)				Age class	Ht. of crown clearance (m.)	Physiological condition	Estimated remaining contribution (years)	Category grading	Structural condition and Notes	Preliminary management recommendations
					N	E	S	W							
G18	Ash	<13	1	<210	<1.5	<5	<1	<5.5	SM	2+	Poor	10-20	C1	Crowded. Drawn up stems. High crowns.	
19	Common Oak	15	1	1140	10.5	10	9	10	M	3.5+	Good	40+	A2	Large root buttress to NE. Open crown. Deadwood and storm damage.	
20	Ash	15	1	c700	8.5	6	5.5	4	M	1+	Poor	<10	U	Dieback. Deadwood. Hollows in limbs and stem.	
21	Common Oak	12	1	c1000	4	10	12	8	M	3+	Fair	20-40	B2+3	Dieback and deadwood throughout crown.	
G22	2no. Common Oak	<16	1	<800	<8	<10	<10	<6	M	2+	Variable	10-40+	B/C1	Inter crowded. N. stem dominant. Large tear wound to E. at 4m-5m in S. stem.	
G23	Common Oak, Willow	<15	1/Multi	<650	<4	<9	<6	<2	SM	0+	Variable	10-40	B/C1	Cut back to W. for power line clearance. Willows leaning.	
G24	Blackthorn, occ. Oak	<7	Multi	<200	<3	<4	<3	<3	Y/SM	0+	Variable	20-40	C2	Mostly Thorn scrub with occasional young Oak.	

Tree ref. no.	Species	Height (m.)	Stem Count	Stem diameter or equivalent (mm.)	Branch spread (m.)				Age class	Ht. of crown clearance (m.)	Physiological condition	Estimated remaining contribution (years)	Category grading	Structural condition and Notes	Preliminary management recommendations
					N	E	S	W							
G25	Blackthorn	<5	Multi	<100	<2	<1	<2	<2	Y	0+	Good	40+	C2	Scrub edge almost a hedge line. Variable height.	
G26	Willow, occ. Oak, Birch	<9	Multi	<250	<3	<3	<4	<3	SM	0+	Good	20-40+	C2	Willows densely multi stemmed from under 1m. Overgrown hedgeline.	
G27	Common Oak	<14	1	<650	<5	<5	<9.5	<5	Y/SM	1+	Variable	20-40+	B/C2	Variable development. Mostly open canopy development.	
28	Common Oak	11	Multi	720	2.5	5.5	10.5	6.5	Y	1.8+	Good	20-40	B2	Multi stemmed from 1.4m. Open crown. Crowded to N.	
29	Common Oak	7	2	220	2	1	1	4.5	Y	1+	Poor	10-20	C1	Twin stemmed at 1.2m. Heavily crowded. Narrow crown. Curved to W/SW.	
30	Common Oak	10	1	460	2	5	7	4.5	Y	1+	Fair	20-40	C2	Crowded to N. Deadwood. Slight lean to S.	
31	Common Oak	8	1	350	4	0	6.5	6.5	Y	1.8+	Fair	20-40	C2	Crowded to N. and E.	

Tree ref. no.	Species	Height (m.)	Stem Count	Stem diameter or equivalent (mm.)	Branch spread (m.)				Age class	Ht. of crown clearance (m.)	Physiological condition	Estimated remaining contribution (years)	Category grading	Structural condition and Notes	Preliminary management recommendations
					N	E	S	W							
32	Common Oak	12	1	770	6.5	8	10	8.5	Y	2+	Good	40+	B2	Multi stemmed from under 2.5m with open crown. Minor deadwood.	
G33	Common Oak	<13	1	<590	<6	<6	<9	<6	Y	1+	Variable	20-40	B/C2	Variable dimensions. Mostly crowded to N.	
34	Norway Spruce	17	1	370	2	4	5	2.5	SM	1+	Poor	10-20	C1	Surface root buttress. Crowded stem up crown. Thin foliage. Deadwood.	
G35	Common Oak, occ. Ash	<18	1	<610	<9	<6	<6	<6	Y/SM	1+	Variable	<10-40	B/U1	Inter tree crowding. Variable dimensions.	
36	Common Oak	13	1	520	7	4.5	4	3	SM	3.5+	Fair	20-40	C2	Crowded. Deadwood.	
37	Common Oak	13	1	520	7.5	8	3.5	5	SM	3.5+	Poor	10-20	C1	Crowded. Deadwood.	
38	Ash	14	Multi	580	7	10.5	6	1	SM	3+	Poor	<10	U	Crowded to W. Three stems from ground level. Ash Dieback. Deadwood.	
39	Common Oak	4.5	1	170	4.5	2	0	1.5	Y	2+	Poor	10-20	C1	Supressed. Bowed to N.	

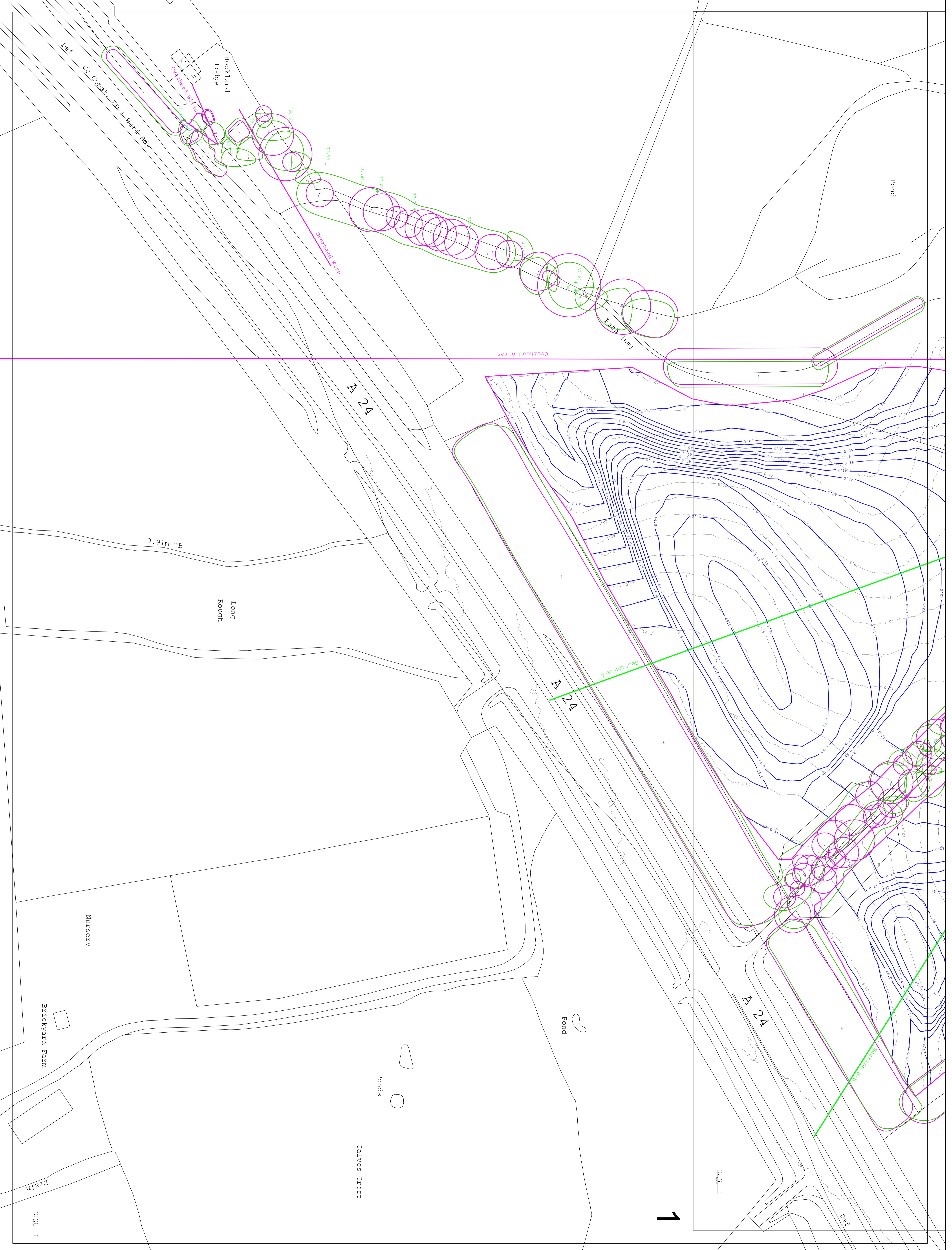
Tree ref. no.	Species	Height (m.)	Stem Count	Stem diameter or equivalent (mm.)	Branch spread (m.)				Age class	Ht. of crown clearance (m.)	Physiological condition	Estimated remaining contribution (years)	Category grading	Structural condition and Notes	Preliminary management recommendations
					N	E	S	W							
40	Ash	15	Multi	560	7.5	4	6.5	7	SM	4+	Poor	<10	U	Multi stemmed from ground level. Ash Dieback. Deadwood.	
41	Ash	17	Multi	730	6.5	5.5	6	5.5	SM	4+	Poor	<10	U	Multi stemmed from ground level. Ash Dieback. Deadwood.	
42	Common Oak	15	1	890	7	7.5	7.5	6.5	SM	2.6+	Poor	10-20	C1	Large decayed tear wound to N. at 2.5m where second stem lost in past. Future failure likely.	
G43	Common Oak	<14	1	<950	<9	<5	<7	<6	Y/SM	1.5+	Variable	10-40	B/C1	Variable dimensions.	
44	Common Oak	18	1	1100	12	12	9	10	M	3+	Fair	40+	A2	Open crown. Minor deadwood.	
45	Walnut	9	1	430	3	6.5	6.5	5.5	SM	1+	Fair	20-40	B2		
G46	Blackthorn	<5	Multi	<100	<2	<2	<1	<2	Y	0+	Good	40+	C2	Variable height scrub formed into a field edge.	
G47	Common Oak, occ. Ash	<20	1/Multi	<800	<10	<8	<11	<8	SM/M	1+	Variable	20-40+	B/C2+3	Variable dimensions and ages. Some with deadwood. Most ivy clad.	

Tree ref. no.	Species	Height (m.)	Stem Count	Stem diameter or equivalent (mm.)	Branch spread (m.)				Age class	Ht. of crown clearance (m.)	Physiological condition	Estimated remaining contribution (years)	Category grading	Structural condition and Notes	Preliminary management recommendations
					N	E	S	W							
G48	Common Oak, Lime, Ash, Western Red Cedar, Cypress	<25	1/Multi	<500	<10	<5	<5	<5	SM	0+	Variable	<10-40+	B/U2	Screening belt with core of evergreens. Mostly drawn up. Crowded. Variable condition. Some Ash with Ash Dieback.	
G49	Common Oak, Ash, Lime, Norway Spruce, Cypress, Red Oak	<25	1/Multi	<500	<10	<5	<5	<5	SM	0+	Variable	<10-40+	B/U2	Numerous Cypress and Norway Spruce windblown/part blown. Mainly to N/NE. Screening belt with core of evergreen. Some Ash with Ash Dieback.	

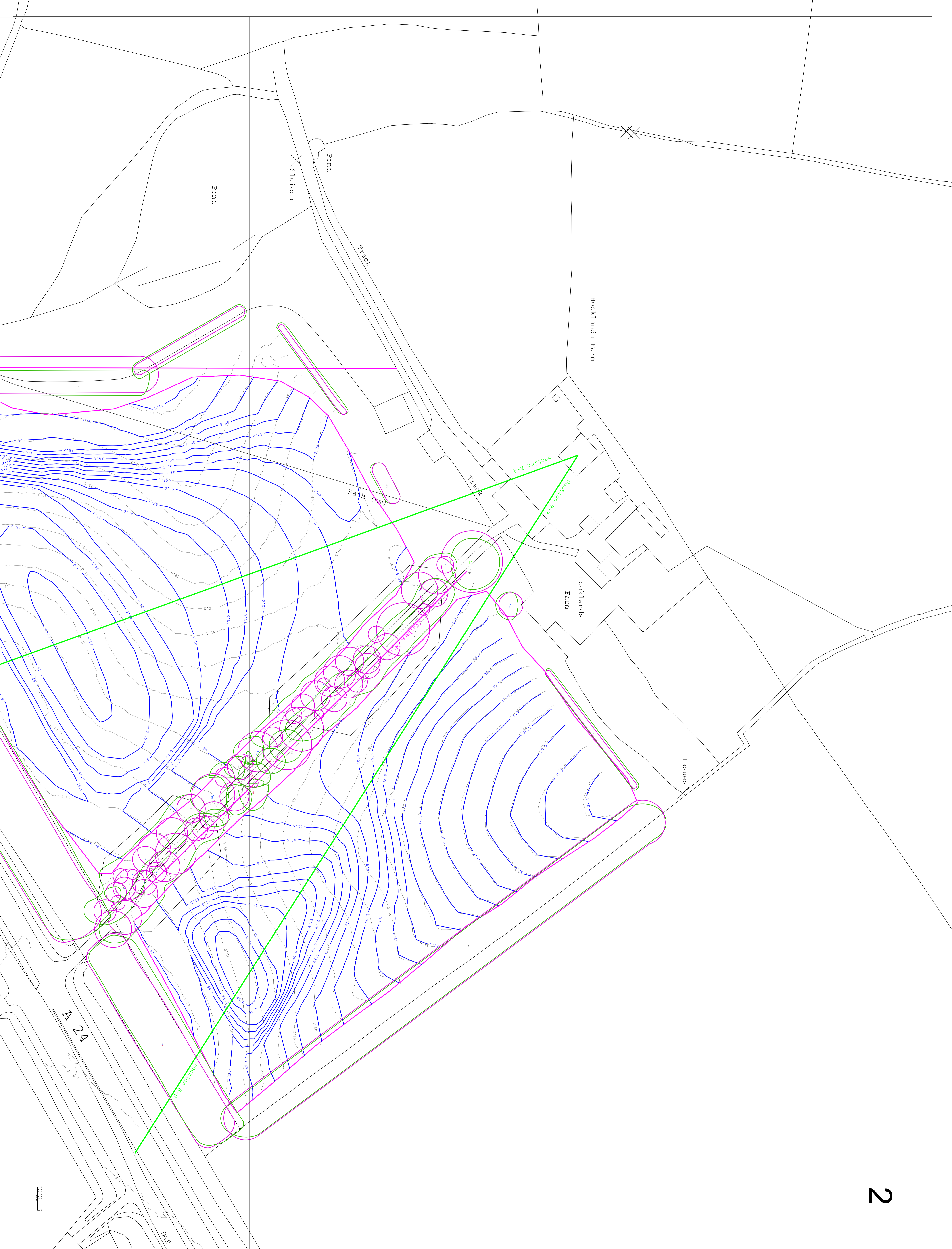
APPENDIX 2

01 - Call Tree numbers	BS Category of Condition
T19	BS Condition A
T11	BS Condition B
T10	BS Condition C
T5	BS Condition U
Green spread	BS Calculated root production areas

This tree constraint plan has been prepared in accordance with the requirements of the Tree Preservation Order (TPO) for Hooklands Farm, West Sussex. The plan shows the locations of trees and their condition, and the areas where trees are protected by the TPO. The plan is based on a site visit on 10/03/2022. The plan is subject to change if new trees are identified or if the condition of existing trees changes. The plan is for information only and does not constitute a guarantee of any kind.



This tree constraints plan has been prepared in accordance with the standards set out in BS5837:2012. It is intended to provide a visual representation of the trees on the site and their potential impact on the proposed development. The plan shows the location, height, crown spread and condition of all trees on the site. It also shows the proposed location and height of any new trees to be planted. The plan is based on the best available information and is subject to change if more information becomes available. It is the responsibility of the client to ensure that the plan is accurate and up to date.



APPENDIX 3

TABLE OF BS CALCULATED ROOT PROTECTION AREAS (RPAs)
AT
HOOKLANDS FARM, PULBOROUGH, RH20 3BA

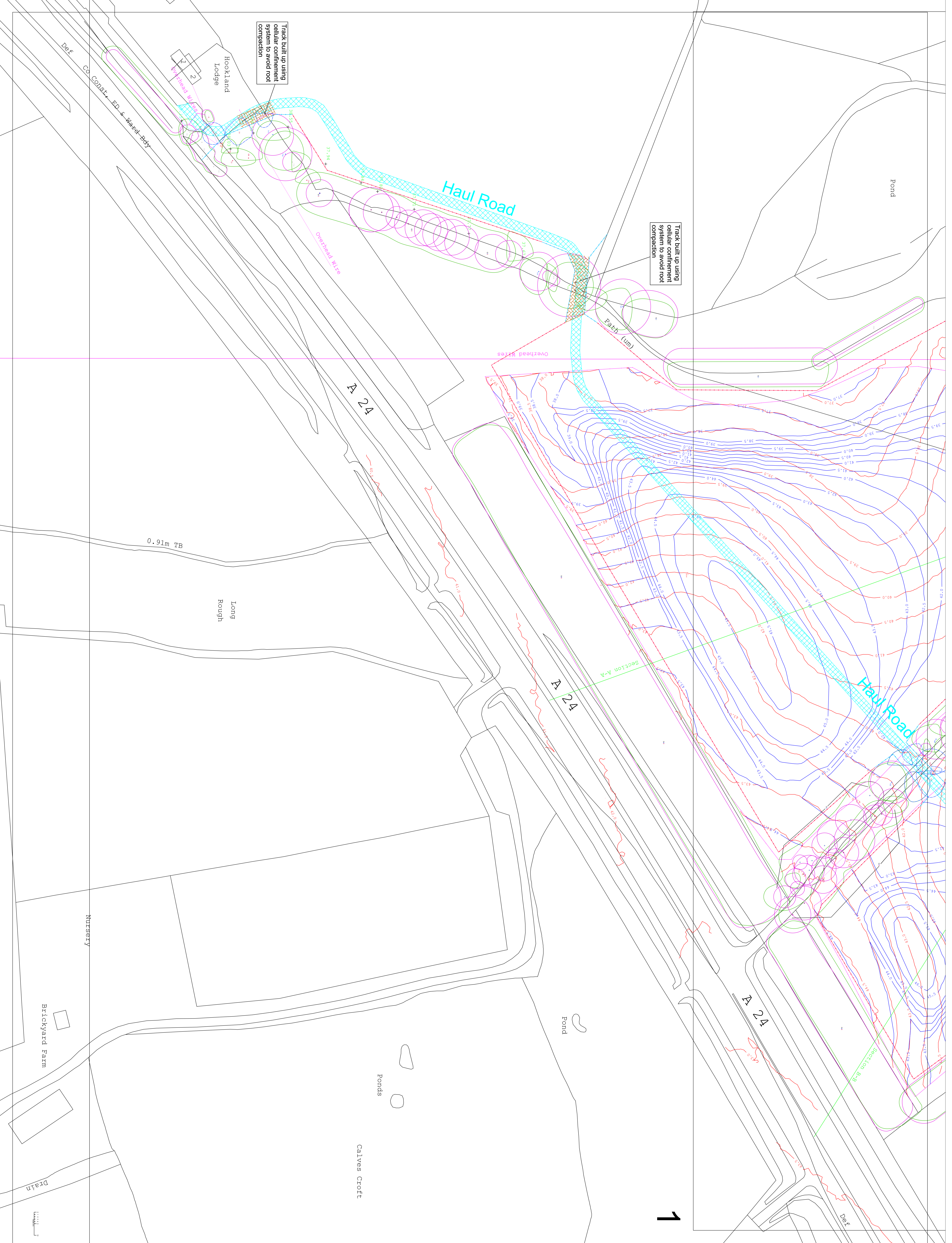
Tree no.	Species	BS Category	Stem diameter or calculated equivalent (mm.)	BS calc. radial equiv. root protection area (m.)	BS calc. total RPA (m ²)
G1	Field Maple	C2	<250	<3	<28
G2	Field Maple, Ash, Wild Cherry	C2	<200	<2.4	<18
G3	Ash, Hawthorn, Field Maple	C2	<250	<3	<28
G4	Blackthorn	C/U1	<200		
5	Ash	U	-	-	-
6	Ash	U	-	-	-
7	Ash	U	-	-	-
8	Willow	U	-	-	-
G9	Willow, Hawthorn, Blackthorn, Ash	C/U1	<150	<1.8	<10
10	Common Oak	C1	290	3.5	38
11	Common Oak	B2	c.750	c.9	c.255
12	Common Oak	B2	960	11.5	416
13	Ash	C1	350	4.2	55
14	Ash	U	-	-	-
G15	Ash, Common Oak	B/U1	<800	<9.6	<290
16	Common Oak	C1	490	5.9	109
17	Common Oak	B2	c.700	c.8.4	c.222
G18	Ash	C1	<210	<2.5	<20
19	Common Oak	A2	1140	13.7	590
20	Ash	U	-	-	-
21	Common Oak	B2+3	c.1000	c.12	c.452
G22	2no. Common Oak	B/C1	<800	<9.6	<290
G23	Common Oak, Willow	B/C1	<650	<7.8	<191
G24	Blackthorn, occ. Oak	C2	<200	<2.4	<18
G25	Blackthorn	C2	<100	<1.2	<5
G26	Willow, occ. Oak, Birch	C2	<250	<3	<28
G27	Common Oak	B/C2	<650	<7.8	<191
28	Common Oak	B2	720	8.6	232
29	Common Oak	C1	220	2.6	21
30	Common Oak	C2	460	5.5	95
31	Common Oak	C2	350	4.2	55
32	Common Oak	B2	770	9.2	266
G33	Common Oak	B/C2	<590	<7.1	<158
34	Norway Spruce	C1	370	4.4	61

TABLE OF BS CALCULATED ROOT PROTECTION AREAS (RPAs)
AT
HOOKLANDS FARM, PULBOROUGH, RH20 3BA

Tree no.	Species	BS Category	Stem diameter or calculated equivalent (mm.)	BS calc. radial equiv. root protection area (m.)	BS calc. total RPA (m ²)
G35	Common Oak, occ. Ash	B/U1	<610	<7.3	<167
36	Common Oak	C2	520	6.2	121
37	Common Oak	C1	520	6.2	121
38	Ash	U	-	-	-
39	Common Oak	C1	170	2	13
40	Ash	U	-	-	-
41	Ash	U	-	-	-
42	Common Oak	C1	890	10.7	360
G43	Common Oak	B/C1	<950	<11.4	<408
44	Common Oak	A2	1100	13.2	547
45	Walnut	B2	430	5.2	85
G46	Blackthorn	C2	<100	<1.2	<5
G47	Common Oak, occ. Ash	B/C2+3	<800	<9.6	<290
G48	Common Oak, Lime, Ash, Western Red Cedar, Cypress	B/U2	<500	<6	<113
G49	Common Oak, Ash, Lime, Norway Spruce, Cypress, Red Oak	B/U2	<500	<6	<113

APPENDIX 4

01 - Call Tree numbers	BS Category of Condition
T19	BS Condition A
T11	BS Condition B
T10	BS Condition C
T5	BS Condition U
□	Crown spread
□	BS calculator root protection areas
□	BS calculator protective banding
□	High voltage
□	High voltage
□	Tree for removal

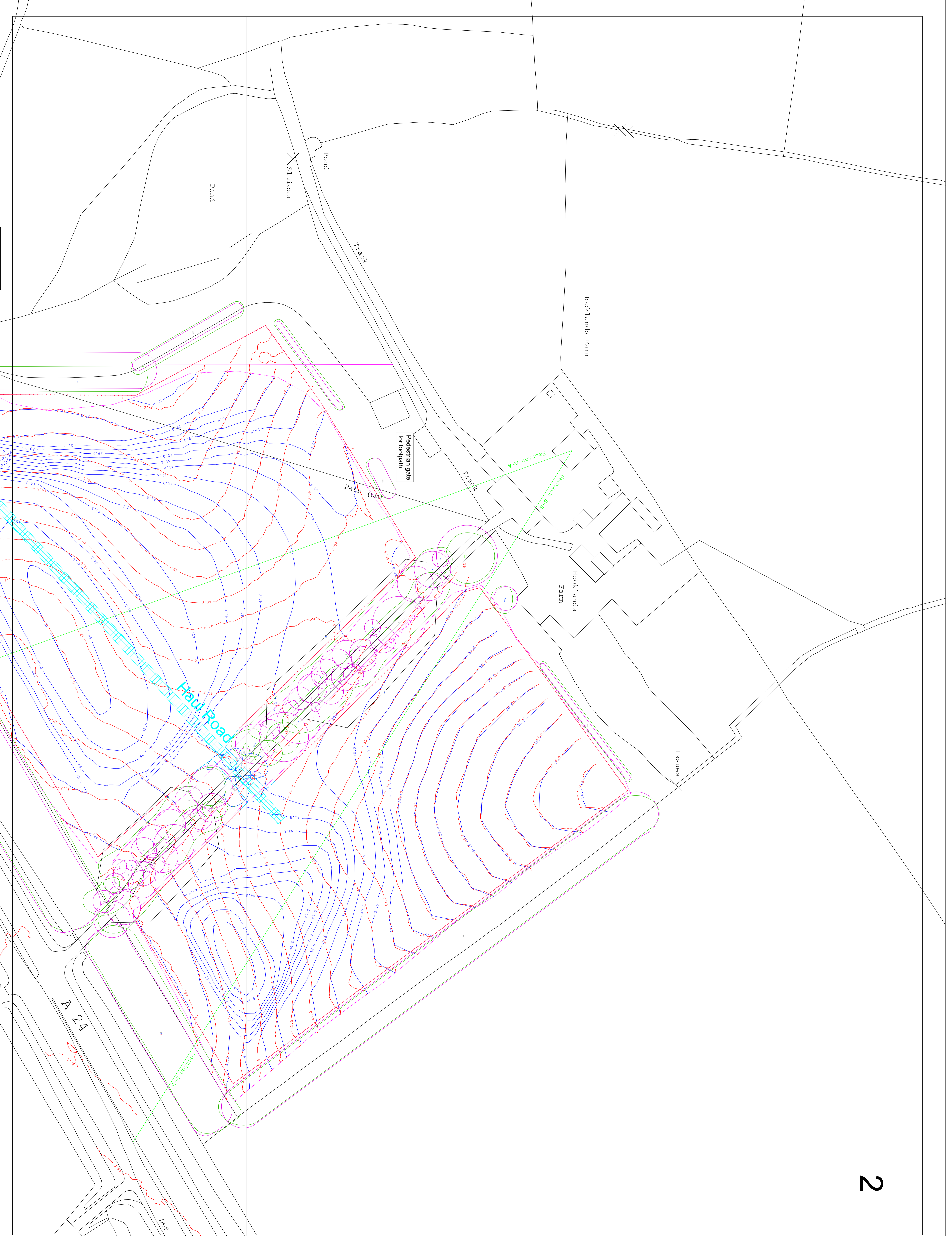


Track built up using cellular confinement system to avoid root compaction

Track built up using cellular confinement system to avoid root compaction

Tree for removal

	Tree for removal
	Light unstable
	Stable
	BS calculator not producers areas
	Crown spread
	BS condition U
	BS condition C
	BS condition B
	BS condition A
	BS Category of Condition
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APPENDIX 5

TREE SURVEY EXPLANATORY SHEET

Height	in metres (estimated where ground uneven or access restricted).
Stem count	number of stems
Stem diameter	in mm. at 1.5m. above ground level.
Branch spread	radial spread in metres at four main compass points (estimated where no access).
Age class	Young - Y Middle aged - MA Mature - M Over mature - OM Veteran - V
Height of crown clearance	in metres. Normally range of heights of outer branches above ground level, e.g. 2-4m.
Physiological condition	Good, Fair, Poor, Dead, Variable
Estimated remaining contribution	in years e.g. less than 10, 10-20, 20-40, 40+
Category grading	see attached sheet
Structural condition	comment on presence of defects, decay, crown form, past management, deadwood, other features worthy of note. N.B. If trees are ivy clad, no full structural assessment will have been possible.
Preliminary management recommendations	requirements of further investigations, works necessary to alleviate potential hazards based on current setting and levels of access. NB: Works that may be necessary in relation to development are not included here

BS5837:2012: FENCING SPECIFICATIONS

Figure 2 Default specification for protective barrier

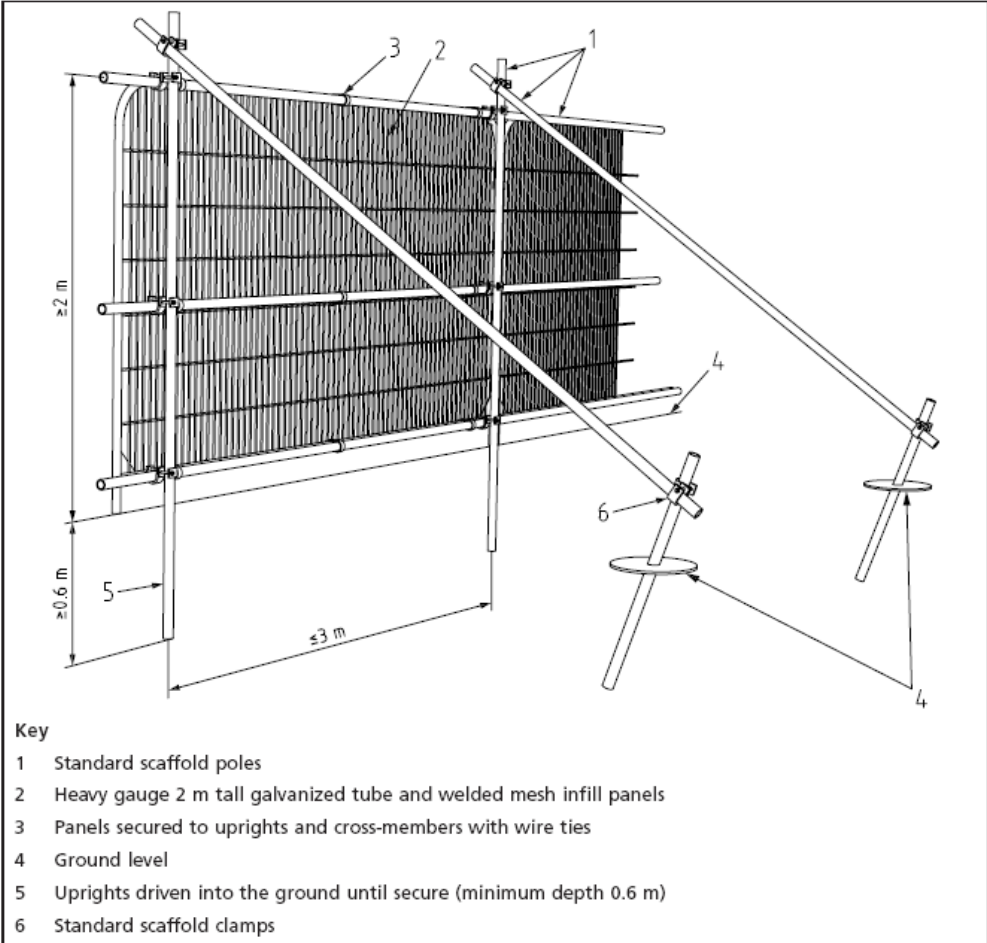
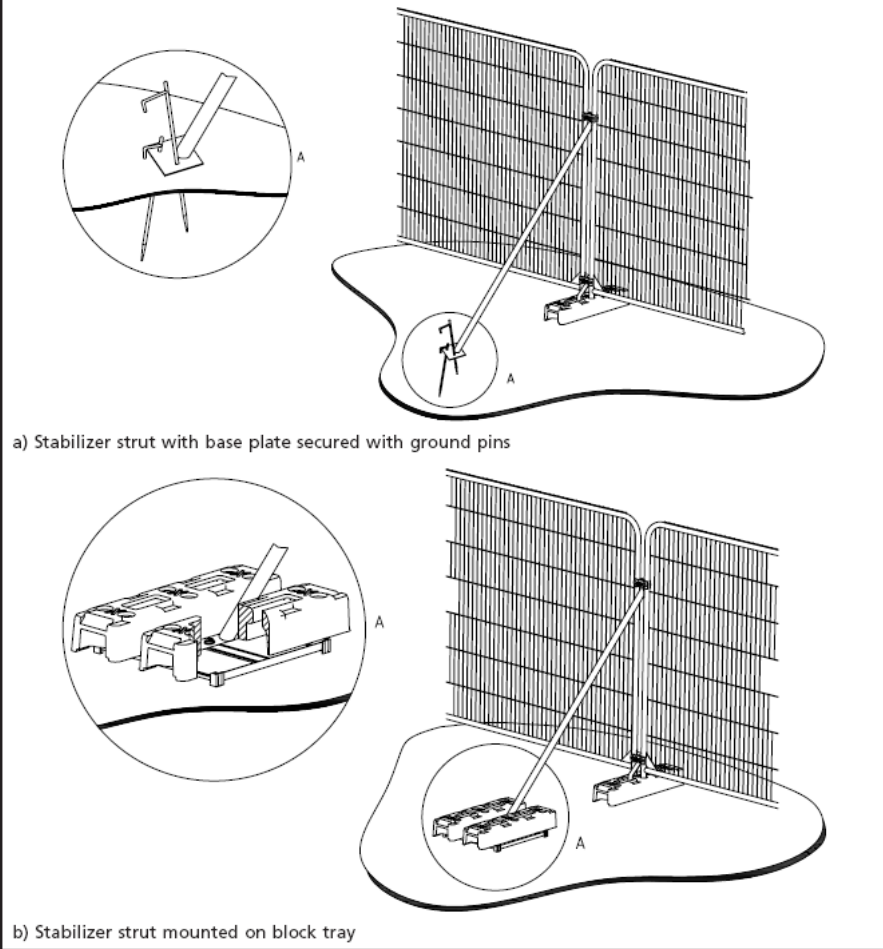


Figure 3 Examples of above-ground stabilizing systems



EXAMPLE OF FENCING SIGNAGE

