Endon Riding School
Stanley Moss Lane
Stoke-on-Trent

Endon Riding School

TREE SURVEY REPORT

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1.0 Introduction

1.1 Trevor Bridge Associates Ltd (TBA) have been instructed by Endon Riding School to undertake a pre-development arboricultural survey of trees and significant vegetation. The pre-development tree survey should be read in conjunction with the accompanying Tree Survey & Root Protection Area drawing ref: 4844.01.

1.2 A site visit to the site was carried out on 20 August 2014. Weather conditions were clear.

1.3 This pre-development tree survey should be considered the first part of a process in identifying trees that are to be retained and protected. A key part of this the pre-development survey is the identifying of Root Protection Areas (RPA's). In Addition to the pre-development survey the following documents may be required to fully support a planning application:

i) An Arboricultural Impact Assessment - This will assess the impact on trees of a proposed development.

ii) An Arboricultural Method Statement - This provides specific details on how a development should proceed in such a manner that avoids damage to trees being retained. It is accompanied with a tree protection plan.

1.4 The following information was provided for the purposes of undertaking this pre-development survey.

- Client Drawing: *Topographical Land Survey. Drawing No. M/DLD/13/005/001. Date: Aug 2013.*

1.5 This report has been undertaken by Phil Dye, BSc (hons) Arboriculture, Tech Cert Arbor A. Phil has extensive experience working as a tree surgeon and has seven years experience as a tree officer in both the Parks and Open spaces Dept and the Planning Dept. He has been providing arboricultural advice to both the public and private sector for the past 8 years. He is a LANTRA qualified Professional Tree Inspector. Phil is a professional member of the Consulting Arborist Society and an associate member of the Institute of Chartered Foresters.

2.0 Scope and Limitations of the Report

2.1 This report has been prepared to inform the design layout of potential development and be submitted with a planning application.

2.2 Due to the changing nature of trees – and possibly other site circumstances – this report and recommendations are limited to a two year period. Similarly, this report could be invalidated if any alterations are made to the site that could change the conditions as seen at time of inspection.

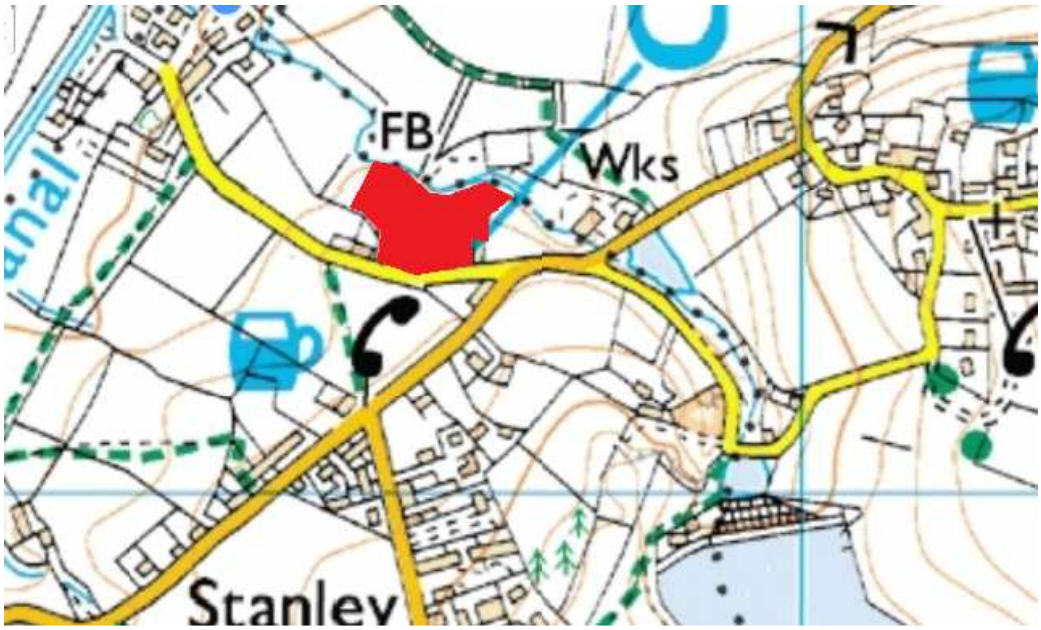
2.3 Under certain circumstances, roots can affect foundations, drains and other underground services. These issues have <u>not</u> been addressed by this report.

2.4 Trees are dynamic structures that can never be guaranteed 100% safe; even those in good condition can suffer occasional damage under only average weather conditions. A lack of recommended work does not imply that a tree will never suffer damage.

3.0 Site Location

3.1 The site is currently used as a stables and riding school. The majority of the site is laid to hard standing with paddocks to the west. On the eastern boundary stands a row of mature ash and beech.

3:2 The location of the site is marked below (in red)



3:3 The grid reference of the site is **SJ 92665 52225.**

3.4 The full details of the tree cover is included within the tree survey schedule within section 10.0 of this report, and within the accompanying Tree Survey & Root Protection Area drawing.

4.0 Tree Survey Schedule - Methodology

4.1 This survey complies with British Standard 5837:2012 *Trees in relation to design, demolition and Construction - Recommendations*. All significant trees or groups within the site have been inspected, identified and detailed.

4.2 Site. The survey was carried out from ground level and without the use of special diagnostic equipment (unless otherwise stated). Lower-grade material may been treated as numbered groups, for example where in rows or dense groupings.

4.3 Schedule. The following information is given in the schedule:

- **Tree reference No**: Prefixed with a T for Trees, G for groups and H for hedges.
- **Tree Species**. Common name of Species.
- **Height** (metres). An electronic hipsometer is used to measure tree heights. Tree heights are only measured where it is possible to gain a clear unobstructed view of the tree, otherwise the height is estimated.
- **Trunk diameter** (millimetres). This is a key measurement for calculating the Root Protection Areas of trees. Measurements are taken at 1.5m, height above ground level. If trees are assessed as a group or woodland feature, the trunk diameter of the largest tree within the group or woodland is estimated and used.
- **Crown spread** (metres**):** The maximum lateral spread of the canopy as measured from the cardinal compass points (NESW).
- **Crown clearance** (metres): The height of the lowest section of canopy measured from cardinal compass points.
- **Age class.** A classification of the age of the tree. In the case of woodlands and groups this is based in the oldest tree.

Y – Young:	Recently planted trees less than ¼ life expectancy.
SM – Semi-Mature:	Established trees less than 1/3rd predicted life expectancy.
EM – Early mature:	Trees between 1/3rd and 2/3rd predicted life expectancy.
M - Mature:	Trees over 2/3rd predicted life expectancy.
V - Veteran:	A tree of significant age (with a large girth) which provides cultural, landscape or ecological value.

- **Physiological condition:** (Good, Fair, Poor, Dead). An assessment of the tree's health and vitality reflecting the tree's potential longevity as well as its capacity for withstanding environmental stresses (such as pests and diseases).
- **Structural Condition:** (Good, Fair, Poor, Dead): A consideration of the structural integrity of the physical structure of the tree.

- **Life Expectancy**: Estimated remaining contribution (years, 0-10 10-20 20-40 40+).
- **Root Protection Area**: As calculated via BS 5837: 2012 (area in square metres and as a radius in metres). This is the basis of the Root Protection Area marked as a circle on the Tree Survey (may have been modified in light of site circumstances). This is generally the minimum position for protective fencing.

- **Retention Category:**
  Trees are categorised using the criteria shown in the table below. The purpose of the categorisation is to apply a non fiscal value to tree stock to allow informed decisions on which trees should be retained or removed within the context of development.

TREES UNSUITABLE FOR RETENTION:			
'U' – [Marked red on plan] **Trees of such a condition that they can not be realistically retained as living trees in the context of the current land use for longer than 10 years.**	• Trees that have serious, irremediable, structural defect, such that their early loss is expected due to collapse including those which will become unviable after the removal of other category U trees (where for what ever reason, the loss of companion shelter can not be mitigated by pruning) • Trees that are dead or are showing signs of significant, immediate, and irreversible overall decline • Trees infected with pathogens of significance to health and/or safety of other trees nearby, or very low quality trees suppressing adjacent trees of better quality *Note Category U trees can have existing or potential conservation value which might be desirable to preserve*		
TREES TO BE CONSIDERED FOR RETENTION:			
	1. Mainly arboricultural values	**2. Mainly landscape values**	**3. Mainly cultural values, including conservation**
'A' – [Marked green on plan] **Trees of high quality with an estimated life expectancy of at least 40 years**	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 (eg the dominant and/or principal trees within an avenue)	Trees, groups or woodlands of particular visual importance as arboricultural or landscape features	Trees, groups or woodlands of significant conservation, historical, commemorative or other value (eg veteran trees or wood pasture)
'B' – [Marked blue on plan] **Trees of moderate quality with a remaining life expectancy of at least 20 Years**	Trees which may be in the A category but are down graded due to their impaired condition (e.g. presence of significant though remediable defects, including unsympathetic past management and storm damge), such they are unlikely to be suitable for retention for beyond 40 years; trees lacking the special quality necessary to merit category A designation	Trees that are in numbers, usually growing as groups or woodlands, such that they attract a higher collective rating than they might as individuals; or trees occurring as collectives but situated so as to make little visual contribution to the wider locality.	Trees with clearly identifiable conservation or other cultural benefits
'C' – [Marked grey on plan] **Trees of low quality with an estimated life expectancy of at least 10 years, or young trees with a stem diameter below 150mm**	Unremarkable trees of very limited merit or such impaired condition that hey do not qualify in higher categories	Trees present in groups or woodlands, but without this conferring on them any greater collective landscape value ; and/or trees offering low or only temporary /transient landscape benefits	Trees with no material conservation or other cultural value

- **Observations**: This provides general information regarding the trees, providing details regarding defects, or points of merit.

- **Preliminary Recommendations:** Any management works that should be carried out. Recommendations for management works are only recommended sparingly, generally where there is a significant safety concern, or long term benefit for the tree. Works are considered within the context of the site at the time of survey. Works that are required in relation to new development proposals are considered separately (such as part of a method statement).

5.0 Trees and Construction – General Issues

5.1 Typically, about 80% of roots will be found in the upper half metre of soil and often extending well beyond the canopy spread. The threat to the trees by development comes from:

(a) root severance or fracture
(b) compaction of the soil, preventing gaseous exchange and moisture percolation
(c) possible change to moisture gradients due to surface water run-off or interception
(d) physical damage to low branches and trunk.
(e) Damage from chemical run-off from construction activities

The consequences for the tree of such damage are:

(i) instability, if severe enough
(ii) entry points for pathogenic fungi at wounds / fractures
(iii) loss of vitality due to reduced oxygen, mineral and moisture take-up; all leading to
(iv) root death, and
(iv) a general decline or possible death of the tree.

6.0 Tree Constraints

6.1 Constraints imposed by trees during development, both above and below ground need to be considered within the site layout design.

Protection is afforded to the tree by defining a Root Protection Area (RPA) within which no development activity should take place. The size of the RPA is defined in the British Standard and relates to trunk diameter. The RPA is normally the minimum position for placement of protective fencing.

6.2 Nominally the RPA is represented by a circle around the tree. The area of the RPA may however, subject to the consideration of the arboricultural consultant, and be altered to a polygon in order to reflect the site conditions and requirements. For example, existing hard surfaces and foundations are likely to restrict or limit root growth while good quality soil may promote and extend root growth.

6.3 Root Protection Areas primarily provide relate to below ground constraints (root protection). Other constrains that must be considered include:

- The current as well as ultimate height and spread of a tree.
- Large trees close to a building, particularly a dwelling, can cause apprehension to owners/occupiers that result in pressure for tree removal or inappropriate pruning. Buildings should be sited allowing for the species height, spread and overall habit.
- Species characteristics; i.e. density of foliage, fruit-fall, susceptibility to honeydew drip, or branch drop. Trees are shedding organisms. The leaves of some species may cause problems with blocking of gullies and gutters. Fruit may cause slippery patches and honeydew drop can affect surfaces (particularly cars). If conflicts may arise detailed design may address such issues, such as non-slip paths, use of car-ports, provision of leaf guards or grilles etc.

- The potential impact on direct and diffuse light of a particular location of land; shading of buildings by trees can be a problem, especially where rooms require natural light, in addition open spaces such as gardens and sitting areas should be designed to meet requirements for direct sunlight (for at least part of the day).
- Infrastructure requirements in relation to trees e.g. easements for underground or above ground apparatus and visibility splays.
- Space for the provision of new planting or landscaping.
- The proposed end use of space within Root Protection Areas.
- The requirement to protect overhanging canopies of trees that overhang or extend beyond Root Protection Areas.

7.0 Structures within the Root Protection Areas of Trees.

7.1 In the development layout design structures should be positioned outside of RPA's. In some exceptional instances there may be an overriding justification for construction within the RPA. In such cases technical solutions may be available to minimise (to an acceptable level) disturbance to the tree/s. Where such technical solutions may be relied upon full details will need to be included within a method statement. Advice must be sought from a suitably qualified arboriculturalist in such matters.

7.2 In some cases it may be unavoidable to place permanent hard surfacing within an RPA (for example the placement of an access driveway or parking area). In such cases the following should apply:

- No excavation of the soil should take place, other than scraping of the turf/vegetation layer
- Any design must avoid compaction, allowing even distribution of weight.
- New hard surfacing should not exceed 20% of any existing unsurfaced ground within the RPA.
- If the proposed surface is likely to require de-icing salt then run-off should be directed away from the RPA.
- Permeable hard surfacing can result in soil moisture saturation for long periods (resulting in root death). Where there is a risk of water-logging a design should incorporate land drainage.

7.3 Appropriate sub-base options for new hard surfacing include three-dimensional cellular confinement systems. Piles, pads or elevated beams can support bridges over RPA's. In all cases full specifications and methodology must be included within a supporting method statement.

8.0 Wildlife Issues and Timing of Operations

8.1 Bats. Under current legislation it is an offence to 'intentionally or recklessly disturb a bat' or 'damage, destroy or block access to the resting place of any bat'. For further details consultation must be made with the Statutory Nature Conservancy Organisation (Natural England, 0300 060 1842, www.naturalengland.org.uk). Where relevant any current ecological surveys for the site will take precedence in this matter.

8.2 Birds. It is an offence to kill, injure or take any wild bird; or take, damage or destroy the nest of any wild bird while it is in use or being built. Therefore work likely to disturb nesting birds must be avoided from late March to August.

8.3 The pruning of some species should avoid specific times. *Prunus* species (eg flowering and fruiting Cherry, Plum, Almond etc) should only be pruned during June – August in order to minimise the risk of infection by Silver Leaf disease. *Acer* (Maples including Sycamore), *Betula* (Birches) and, *Morus* (Mulberry) should not be pruned February – June due to sap bleeding; also *Juglans* (Walnut) from December – June.

9.0 Tree Preservation Orders and Conservation Areas

9.1 Prior to the undertaking of any tree works it is recommended that the local planning authority is contacted to check if trees within the site are subject to TPO's or Conservation Areas.

9.2 Works to protected trees require consent from the local planing authority. In the case of TPO's an application must be made. In the case of conservation areas a notification must be made. TPO applications take up to eight weeks, conservation area notifications take six weeks.

9.3 Certain exemptions apply; for example the removal of deadwood. In the case of dangerous trees 5 days written notice should be given to the local authority (in the cases of immediate danger the work should proceed, but the local authority contacted as soon as possible afterwards).

9.4 Planning consent overrides protected trees, where the works or removal are necessary for development to proceed.

Tree Group Hedge	Common Name	Age Class	Height (m)	No. of Stems	Stem 1	Stem 2	Stem 3	Stem 4	Stem 5	> 5 stems	Root Protection Area (Radius, m)	N	E	S	W	N(H)	E(H)	S(H)	W(H)	Physiological Condition	Structural Condition	Life Expectancy	Future Growth Potential	Retention Category	Comments & Observations	Preliminary Work recommendations
G1	3 x wild cherry	Early-Mature	11	1	290						3.6	2	3	2	3	3	2	3	3	Fair/Poor	Fair/Poor	10+	Moderate	C2	Sparse crowns for species	No work required
G2	3 x Leyland cypress	Semi-Mature	12	2	240	310					4.8	2	2	2	1	4	4	2	4	Fair	Fair	20+	High	C1		No work required
T1	Wild cherry	Early-Mature	8	1	360						4.2	3	2	3	4	2	3	3	2	Fair	Fair/Poor	10+	Moderate	C1	Column of dysfunctional wood from base to 1.5m on north side. Wound wood forming and beginning to occlude.	No work required
T2	Wild cherry	Young	5	1	120						1.5	1	3	4	2	2	2	2	2	Fair	Fair	20+	High	C1		No work required
T3	Wild cherry	Early-Mature	10	1	360						4.2	4	4	4	2	2	2	2	2	Fair	Fair	20+	Low	C1		No work required
T4	Damson	Semi-Mature	3	1	130						1.5	2	1	2	1	1	1	1	1	Poor	Poor	<10	Low	U	Moribund.	No work required
T5	English oak	Mature	17	1	650						7.8	6.5	8	6	8	2	3	2	4	Fair	Good	40+	Low	B1	Stem diameter estimated. Holly hedge impedes access.	No work required

Tree Group Hedge	Common Name	Age Class	Height (m)	No. of Stems	Stem 1	Stem 2	Stem 3	Stem 4	Stem 5	> 5 stems	Root Protection Area (Radius, m)	N	E	S	W	N(H)	E(H)	S(H)	W(H)	Physiological Condition	Structural Condition	Life Expectancy	Future Growth Potential	Retention Category	Comments & Observations	Preliminary Work recommendations
T6	Alder	Mature	14	1	700						8.4	6	6.5	6	5.5	2	3	3	2	Fair	Fair	30+	Low	B1	Stem diameter estimated. Holly hedge impedes access. Strip of exposed necrotic cambium from base to 1.5m on north side. Wooden fence post appears to be attached at this point.	No work required
T7	Alder	Mature	11.5	1	780						9.3	7	5.5	6	6	4	4	4	4	Fair	Fair	30+	Low	B3	Central leader failed. Decay visible in top 2m of stem.	No work required
T8	Silver birch	Mature	10	1	550						6.6	4	4	3	4	1	1	2	2	Fair	Fair/Poor	10+	Low	C3	Central leader lost. Remaining stem is 3m high. Decay visible in top 1m.	No work required
G3	3 x silver birch, 2 x elder and 1 x cherry	Early-Mature	12	2	250	150					3.6					1	1	1	1	Fair	Fair	20+	Moderate	C2	Trees situated on steep bank leading down to the stream. Nearest tree in group is eastern most tree, 4.5m from wooden fence of paddock and RPA (estimated due to inaccessibility) is calculated from this tree.	No work required
G4	Cherry suckers	Young	4	4	75	75	90	160			2.4					0	0	2	0	Fair	Fair	30+	High	C2		No work required
T9	English oak	Mature	12.5	1	920						11.1	9	5	5.5	10	10	6	4	3	Poor	Fair/Poor	<10	Very Low	U	Severe dieback resulting in major deadwood throughout.	No work required
T10	Alder	Mature	14	1	710						8.4	7	7	3	6	3	3	3	3	Good	Fair	30+	Low	B1		No work required

Tree Group Hedge	Common Name	Age Class	Height (m)	No. of Stems	Stem 1	Stem 2	Stem 3	Stem 4	Stem 5	> 5 stems	Root Protection Area (Radius, m)	N	E	S	W	N(H)	E(H)	S(H)	W(H)	Physiological Condition	Structural Condition	Life Expectancy	Future Growth Potential	Retention Category	Comments & Observations	Preliminary Work recommendations
T11	Ash	Mature	24	1	980						11.7	8	11	11	9	3	4	3	6	Fair	Good	30+	Low	A1	Minor to moderate deadwood in crown. Snapped branch in central crown.	Remove moderate deadwood over hard standing. Remove failed branch in centre of crown approx 9m up main stem.
T12	Beech	Semi-Mature	10	1	290						3.6	4	3.5	4	4	2	2	3	2	Fair	Fair	40+	High	C1		No work required
T13	English oak	Young	6	1	110						1.2	2	2	3	2	2	2	3	3	Fair	Fair	40+	High	C1		No work required
G5	Cherry, ash, sycamore, elder, hawthorn.	Semi-Mature	10	1	110						1.2					3	3	3	3	Fair	Fair	30+	Moderate	C2	RPA taken from ash tree nearest road (3m from kerb edging). All trees in group have similar stem diameters.	No work required
T14	Ash	Mature	19	1	760						9	7	8	10	7	3	3	3	3	Good	Good	40+	Low	A1		No work required
T15	Alder	Early-Mature	14	1	450						5.4	4	4	3	5	2	3	3	3	Fair	Fair	30+	Moderate	B1		No work required
T16	Norway maple 'Crimson king'	Early-Mature	9	1	400						4.8	4	4.5	3	4	3	2	3	3	Fair	Fair	30+	Moderate	C1	Tight union at main fork at 1.5m. Included bark at this point.	No work required

Tree Group Hedge	Common Name	Age Class	Height (m)	No. of Stems	Stem 1	Stem 2	Stem 3	Stem 4	Stem 5	> 5 stems	Root Protection Area (Radius, m)	N	E	S	W	N(H)	E(H)	S(H)	W(H)	Physiological Condition	Structural Condition	Life Expectancy	Future Growth Potential	Retention Category	Comments & Observations	Preliminary Work recommendations
T17	Goat willow	Early-Mature	10	3	240	260	180				4.8	5	3.5	4	4	3	3	2	3	Fair	Fair	20+	High	C1		No work required
G6	Lombardy poplar, silver birch, cherry, ash, elder, crab apple, sycamore, dogwood, alder.	Early-Mature	17	1	300						3.6					3	0	0	0	Fair	Fair	30+	Moderate	C2	RPA taken from cherry tree nearest road (3m from kerb edging). All trees in group have similar stem diameters.	No work required
T18	Rowan	Semi-Mature	6	1	160						1.8	3	3	3	3	4	3	3	3	Fair	Good	30+	Moderate	C1		No work required
G7	Elder, laurel, ash, alder, dogwood, elder.	Early-Mature	10	1	200						2.4					0	0	0	0	Fair	Fair	30+	Moderate	C2	Located at the foot of a steep bank leading to the stream. Nearest stem is 8m north of stable.	No work required
G8	Alder, sycamore, ash	Mature	16	2	360	510					7.5					2	2	2	1	Good	Good	40+	Low	B2	Located on far side of stream. RPA calculated from twin-stemmed sycamore.	No work required
T19	Hawthorn	Early-Mature	7	3	120	190	150				3.3	4	3	2	3	1	1	1	1	Fair	Fair	30+	Moderate	C1		No work required
T20	Ash	Mature	20	1	860						10.2	9	9	8	11	5	5	5	5	Good	Good	40+	Low	B1		No work required

Tree Group Hedge	Common Name	Age Class	Height (m)	No. of Stems	Stem 1	Stem 2	Stem 3	Stem 4	Stem 5	> 5 stems	Root Protection Area (Radius, m)	N	E	S	W	N(H)	E(H)	S(H)	W(H)	Physiological Condition	Structural Condition	Life Expectancy	Future Growth Potential	Retention Category	Comments & Observations	Preliminary Work recommendations
T21	Ash	Mature	18	1	750						9	9	7	4	11	7	5	6	4	Fair	Good	40+	Low	B1	Stem diameter estimated as inaccessible.	Remove moderate deadwood over proposal site.
T22	Ash	Mature	20	1	850						10.2	10	7	6	8	8	3	4	8	Fair	Good	40+	Low	B1	Stem diameter estimated as inaccessible.	Remove moderate deadwood over proposal site.
T23	Ash	Mature	25	1	800						9.6	7	8	10	12.5	3	3	6	6	Good	Good	40+	Low	A1	Stem diameter estimated as inaccessible. Stem of tree has been boxed in when stables were constructed thus impeding full basal inspection.	Remove moderate deadwood over proposal site.
T24	Beech	Mature	19	1	850						10.2	8	6	5	8	4	4	4	4	Good	Good	40+	Low	A1	Off-site tree. Stem diameter estimated due to inaccessibility.	Crown lift over property (west side) to 5m.
H1	Leyland cypress	Semi-Mature	3	1	100						1.2					0	0	0	0	Good	Good	30+	Very High	C2	Stem diameter is averaged	No work required
H2	Leyland cypress	Semi-Mature	3	1	100						1.2					1	1	1	1	Good	Good	30+	Very High	C2	Stem diameter is averaged	No work required

Tree Schedule

Tree Number	RPA Radius	Category
G1	3.6m	C2
G2	4.8m	C1
G3	3.6m	C2
G4	2.4m	C2
G5	1.2m	C2
G6	3.6m	C2
G7	2.4m	C2
G8	7.5m	B2
H1	1.2m	C2
H2	1.2m	C2
T1	4.2m	C1
T2	1.5m	C1
T3	4.2m	C1
T4	1.5m	U
T5	7.8m	B1
T6	8.4m	B1
T7	9.3m	B3
T8	6.6m	C3
T9	11.1m	U
T10	8.4m	B1
T11	11.7m	A1
T12	3.6m	C1
T13	1.2m	C1
T14	9m	A1
T15	5.4m	B1
T16	4.8m	C1
T17	4.8m	C1
T18	1.8m	C1
T19	3.3m	C1
T20	10.2m	B1
T21	9m	B1
T22	10.2m	B1
T23	9.6m	A1
T24	10.2m	A1

Date

Rev

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Project
ENDON RIDING SCHOOL, STANLEY
MOSS LANE, STOKE-ON-TRENT
ENDON RIDING SCHOOL

Title
TREE SURVEY AND ROOT PROTECTION PLAN

Date	Scale(s)	Dwg no	Rev
AUG 14	1:200 @ A1	4844.01	

Dwn	Chkd
FW	DG