

Keresforth Road,
Dodworth

Arboricultural Impact Assessment

April 2022

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1 Introduction

1.1 *Introduction and Background*

- 1.1.1.1 This report contains an Arboricultural Impact Assessment in support of an application for development at Land off Keresforth Road, Dodworth, Barnsley S75 3QY. The study area extends to approximately 8.1 hectares and is centred at approximate grid reference SE 3243 0522.
- 1.1.1.2 This report has been produced to support an outline planning application for the development of a residential estate with associated access, utilities, soft landscaping and open space provision.
- 1.1.1.3 The proposed development plan is shown in the Tree Assessment Plan (TAP) in Appendix 2.
- 1.1.1.4 A tree survey of the site in accordance with BS5837:2012 was carried out in December 2021 with the results outlined in the following report:
- 1.1.1.5 Arboricultural Survey Report, Keresforth, Dodworth, December 2021.
- 1.1.1.6 The above report was produced to support the design of the proposed development. As part of this survey the relevant qualitative tree data was recorded in order to assess the condition of the existing trees, their constraints upon the prospective development and the necessary protection and construction specifications required to allow their retention as a sustainable and integral part of the completed development. Information is given on condition, age, size and indicative positioning of all the trees, both on and affecting the site. This is in accordance with the British Standard 5837:2012 Trees in relation to design, demolition and construction – Recommendations.

1.2 *Aims*

- 1.2.1.1 The Arboricultural Impact Assessment will provide information and advice on potential conflicts between the existing trees on site and the proposed development. The information contained in this assessment has been drawn from the current design layout.
- 1.2.1.2 Possible mitigation measures will be outlined where the proposed development comes into conflict with retained trees and vice versa.

1.3 *Trees Within the Site*

- 1.3.1.1 The survey results are shown in Appendix 2 (Tree Survey Results – Table 1) and Appendix 3 (Tree Constraints Plan). The trees included within this survey comprise of 50 individual trees, 25 tree groups, 3 woodland groups and 1 hedge group.

- 3 individual trees were classified as BS5837:2012 Category A.
- 1 woodland group was classified as BS5837:2012 Category A.
- 16 individual trees were classified as BS5837:2012 Category B.
- 7 tree groups were classified as BS5837:2012 Category B.
- 2 woodland groups were classified as BS5837:2012 Category B.
- 21 individual trees were classified as BS5837:2012 Category C.
- 17 tree groups were classified as BS5837:2012 Category C.
- 1 hedge group was classified as BS5837:2012 Category C.
- 10 individual trees were classified as BS5837:2012 Category U.

- 1 tree group was classified as BS5837:2012 Category U.

2 Arboricultural Impact Assessment

2.1 *Introduction*

2.1.1.1 The Arboricultural Impact Assessment will outline the potential impact this development will have on the trees which are to be retained. The implications will be discussed in terms of below ground constraints and above ground constraints. Possible remedial actions will be discussed where the development impacts significantly on retained trees.

2.2 *Development Proposal*

2.2.1.1 The proposal is for the residential development of the site to include up to 209 dwellings, associated access and open space provision.

2.3 *Trees to be Removed*

2.3.1.1 A total of 14 trees, 5 tree groups and 6 part groups will require removal to facilitate the development.

2.3.1.2 Trees in G7 are all Category U trees and are in a poor condition. These trees will require removal for arboricultural reasons prior to development.

2.3.1.3 The proposed access will require the removal of T1, T3, T4, T5, T9, all trees in G1, G4, part removal of G2 and G3, and removal of edge trees from a short section of the southern end of W1. Tree removal will be required as the proposed access conflicts directly with the trees either through the position of the road or through the construction of retaining wall features which will be required due to the topography of the site along the proposed access road. The position of the road has been designed to avoid conflict with Category A trees and those which are located within 3rd party ownership. Any alteration of the design would significantly impact trees in private ownership, which are of a greater landscape value than those affected by the proposal.

2.3.1.4 The proposed access road through the central woodland copse will require the removal of 4 trees in G19, 1 tree in G20, 1 tree in G21, T41, T42 and T44. The access road utilises an existing track over the beck here and is the most suitable route for the proposed road. The tree loss is considered to be minimal compared to alternatives.

2.3.1.5 The main development will require the removal of G6, G8, part of G9 and part of W3. Proposed dwellings conflict with the location of trees in G6, G8 and the majority of trees in G9. The proposed shared driveways and some garden areas encroach within the eastern edge of W3 and will require removal of edge trees. These are mostly small diameter stems of willow and blackthorn scrub.

2.4 *Mitigation for tree loss*

2.4.1.1 Mitigation for tree loss will be required to replace and improve upon the total tree canopy for the site. This will be in the form of an approved replanting scheme which must be agreed with the LPA.

2.4.1.2 There is likely to be sufficient space on site between proposed soft landscaped areas and other open space provision areas to accommodate any significant replanting that will be required.

2.5 *Below Ground Constraints*

2.5.1 *Excavation Within the RPA*

2.5.1.1 Minor incursion into the RPA of T15 will be required to facilitate construction of the proposed main access road. This is very minimal and there is adequate soft ground which can be retained to compensate for the minor incursion. Hand digging will be required along the edge of the road footprint through the RPA to allow roots to be exposed and appropriately pruned under supervision following assessment. This will avoid the ripping and tearing damage to roots, which can extend further into the RPA, associated with mechanical excavation.

2.5.2 *Hard Surface Installation*

2.5.2.1 Following proposed tree removal there will be no requirement for hard surface installation within the RPA of retained trees.

2.5.3 *Ground Level Changes*

2.5.3.1 Following removal of the trees for the main access road from Keresforth Road, there are no level changes required within retained tree RPA's here.

2.5.3.2 The remainder of the site is not level and rises from west to east, it is likely there will be level changes across the site. Ideally there should be no level changes within the RPA of retained trees.

2.5.3.3 Lowering of the ground level should only occur after assessment of rooting extent has been carried out. The use of an air spade to expose roots should occur or alternatively hand digging to determine the level of rooting in the area that lowering is required. Lowering of the ground level must not occur if there is a high content of roots >25mm. Guidance of an arboriculturist should be sought when carrying out this process.

2.5.3.4 Raising the ground level in the RPA up to 150mm is not likely to have a significant effect on the trees. However, any addition of fill to the RPA must not be compacted and should be of coarse textured soils with a higher sand content to allow good aeration and water movement through the soil.

2.5.3.5 Should the addition of fill be greater than 150mm within the RPA then the installation of an aeration system such as perforated piping should be installed within the fill to allow air and water movement through the whole depth.

2.5.4 *Soil Compaction Within the RPA*

2.5.4.1 Tree protection fencing should be used along the RPA's of retained trees to prevent machinery access to the soft landscape. Use of standard BS5837 fencing is recommended with the exact location to be detailed within an Arboricultural Method Statement.

2.5.4.2 Use of ground protection will be required when working in or near to the RPA of retained trees. Ground protection in the form of a reusable cellular membrane with appropriate infill is recommended where heavy foot traffic and machinery is required across the RPA of any retained trees. Use of plywood boarding or weight bearing matting may be required in certain areas during construction.

2.5.4.3 Under no circumstances must construction machinery pass over unprotected soils within the RPA of retained trees.

2.5.4.4 Compaction of soil reduces oxygen and water movement through the soil which can lead to the suffocation and the eventual death of roots.

2.5.5 *Changes to Soil Condition*

2.5.5.1 It is vital that current soil condition is maintained within the RPA of retained trees and areas of proposed tree planting. Effects on bulk density on the soil from construction activity and the quality of the soil can impact on the trees severely as roots have adapted to the current conditions.

2.5.6 *Underground Utilities/Service Provision*

2.5.6.1 At present the location of other underground utilities and service provisions is not known. However, it is expected that all services will be kept outside of any retained trees RPA and routed along the proposed access road from existing services on Keresforth Road.

2.5.6.2 Any requirement for service installation within the RPA of retained trees, must be constructed in accordance with the guidance provided in the National Joint Utilities Guidance document NJUG 4 and no service shall be positioned within 1m of the tree's stem.

2.6 Above Ground Constraints.

2.6.1 Access Facilitation Pruning

- 2.6.1.1 Following tree removal for the construction of the access road from Keresforth Road and for the main development it is not envisaged that there will be any significant requirements for access pruning.
- 2.6.1.2 Minor pruning of trees in W3 along the edge of plot 138 and the proposed substation will be required through crown lifting and minor lateral reduction to provide clearance from the future use.
- 2.6.1.3 No further pruning is likely to be required.
- 2.6.1.4 Should any pruning requirements be identified on site during the development, advice should be sought by a qualified arboricultural consultant and the relevant LPA should be consulted.
- 2.6.1.5 All pruning work must be carried out in accordance with BS3998:2010 Tree Work Recommendations and be completed by appropriately qualified, experienced and insured arboricultural contractors.

2.6.2 Shading From Retained Trees

- 2.6.2.1 In the most part, the orientation of gardens will prevent significant shade from occurring over the majority of the day. Dwellings along the western edge of the proposed development which are adjacent W3 will experience some shading over a part of the day, but this is not considered to affect a significant timescale and is therefore not a significant impact.
- 2.6.2.2 The main area of shading impact will be to plots 9, 10, 11, 12 and 15. All gardens are oriented to back onto the retained trees in W3. Due to the SW to SE angle of the woodland along this boundary, there is likely to be shading in these gardens from midday onwards. This is likely to present pressure for removal of trees adjacent these plots.

2.6.3 Proximity to Retained Trees

- 2.6.3.1 The majority of the proposed development has allowed a stand off from proposed dwellings and gardens from retained trees through access roads and shared driveways and therefore in the main it is not anticipated there will be significant impact from the proximity of retained trees.
- 2.6.3.2 Plots 9, 10, 11, 12 and 15 all have gardens which back onto retained trees in W3. Due to the proximity of these trees to the rear gardens and due to the shading discussed in 2.6.2, it is anticipated that there will be some pressure for the future removal of these trees once the dwellings are occupied. Where possible it would be advisable to reorientate the dwellings to provide a buffer between the trees and garden boundaries.

2.7 Construction Access and Activities

- 2.7.1.1 Access to the site is anticipated to be from the new access road from Keresforth Road. Following tree removal, it is not anticipated that the access will have a significant impact on retained trees. Barrier fencing as discussed in 2.5.4, must be erected prior to any construction machinery entering the site. This will prevent access to the unprotected ground within the RPA of retained trees.
- 2.7.1.2 The location of site cabins and compounds is unknown. However, all buildings and compound/storage areas must be kept away from retained trees canopies and RPA's.
- 2.7.1.3 Consideration should be included within an Arboricultural Method Statement for the storage of materials as accidental spillage may cause damage to the surrounding trees. Spillage kits and neutral emergency bunding aggregate should be appropriate to the amount of material stored on site i.e. fuel oil or liquid chemicals.
- 2.7.1.4 All storage areas, cement mixing and washing points must be outside RPAs unless otherwise agreed with the Local Planning Authority.

2.8 *Post Development Pressures*

- 2.8.1.1 The processes of construction are unlikely to have a detrimental effect upon the health of the retained trees assuming recommendations made within this Arboricultural Impact Assessment and the subsequent Method Statement are adhered to at all times by the contractor, e.g. the positioning of a suitable fence between the retained trees and construction activities prior to commencement of works and that the fence remains intact and in position throughout the duration of the project.

Appendix 1. Tree Constraints Table

Tree/ Group Ref No.	Species	Height (m)	Crown Spread (m)				Crown Clearance	Stem diameter (mm)	Age class	Physiological Condition	Structural Condition	Condition	Management recommendations	ERC	Cat Grade	Radius of Nominal Circle (m)	RPA SqM
			W	N	S	E											
T1	Ash	21	8	6.5	8	7.5	2.5	530	M	F	F	Mature ash, no obvious signs of ash dieback, surveyed in winter. Crown suppressed to NW from neighbouring tree with crown growth over road and public footpath.	Remove to facilitate development	10+	B1	6.36	127.09
T2	Ash	22.5	10	7.5	7	6.5	4	600	M	F	F	No obvious signs of ash dieback, surveyed in winter. Heavy ivy colonisation on stem and into crown break, makes inspection difficult, stem located on adjacent bank of stream.	Requires ivy removal and detailed assessment and inspection if to be retained.	10+	B1	7.2	162.88
T3	Ash	9	4.5	1.5	6.5	5.5	2	260	EM	F	F	Self sown tree located adjacent entrance onto public footpath. Tree is heavily suppressed with poor growth form leaning over road, damage and cavities on main stem.	Remove to facilitate development	10+	C1	3.12	30.59
T4	Oak	19	9	6	9.5	9	2.5	1110	M	F	F	Large mature oak with large stem diameter. Failed branches and limbs in lower canopy with cavities and openings. Deadwood in lower crown. Large	Remove to facilitate development	20+	B3	13.32	557.46

Tree/ Group Ref No.	Species	Height (m)	Crown Spread (m)				Crown Clearance	Stem diameter (mm)	Age class	Physiological Condition	Structural Condition	Condition	Management recommendations	ERC	Cat Grade	Radius of Nominal Circle (m)	RPA SqM
			W	N	S	E											
											tear out wound in mid crown at 10m. Tree is exhibiting veteranising features.						
T5	Ash	18.5	7	6	5.5	6	3	560	M	F	F	Mature ash, no obvious signs of ash dieback. Tear out cavity in main crown fork union with potential decay progression into stem, potential weak point. Moderately sized tree with limited visibility.	Remove to facilitate development	10+	C1	6.72	141.89
T6	Sycamore	19.5	8	6	10	9	4	850*	M	F	F	Third party tree, large mature tree with good visibility from external areas. Deadwood in upper canopy due to dieback of outer crown	Retain	20+	B2	10.2	326.89
T7	Sycamore	21.5	8.5	4	5.5	8	5	800*	M	F	F	Large mature tree, no obvious defects or signs of ill health identified. 3rd party tree, with significant visibility from external areas.	Retain	30+	A2	9.6	289.57
T8	Horse chestnut	21	7.5	8	3.5	8	1.5	1000	M	F	P	Large mature tree, open cavity at base of stem with significant hollowing of stem base, buttresses on east have decay and are beginning to rot. Rhizomorphs of honey fungus found on stem with decay of	Remove	<10	U	12	452.45

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			W	N	S	E											
												cambial and heart wood from outer stem side as well as from internal hollowing. Potential for significant weakening of stem. Damage and limb failure throughout canopy also.					
T9	Cherry	15	5	5	5	5	2.5	250	EM	F	F	Tall cherry, woodland tree. No obvious defects or signs of ill health identified. Limited visibility in wider landscape,	Remove to facilitate development	20+	B1	3	28.28
T10	Sycamore	18	8	3.5	10	6	0	780	M	F	F	Mature tree located on top of embankment, no obvious defects or signs of ill health identified.	Retain	20+	B2	9.36	275.27
T11	Ash	19.5	7	5	4.5	4	3	890	M	P	P	Mature tree, with multiple large limb failures, significant damage and openings in main tree structure, evidence of decay and hollowing of stem at base with open cavity.	Remove	<10	U	10.68	358.38
T12	Oak	11.5	3.5	4	1	3.5	4	300	EM	F	F	Tree in woodland copse, tall canopy, deadwood in lower crown and uneven form.	Retain	20+	B1	3.6	40.72

Tree/ Group Ref No.	Species	Height (m)	Crown Spread (m)				Crown Clearance	Stem diameter (mm)	Age class	Physiological Condition	Structural Condition	Condition	Management recommendations	ERC	Cat Grade	Radius of Nominal Circle (m)	RPA SqM
			W	N	S	E											
T13	Field maple	12.5	4	5.5	2.5	4.5	2	380	M	G	G	Tall slender maple, due to location in woodland copse. Minor deadwood, no obvious defects or signs of ill health identified	Retain	20+	B1	4.56	65.33
T14	Hawthorn	7	1	2	4	4	3	230	M	F	F	Small suppressed hawthorn beneath T15. Poor form.	Retain	10+	C1	2.76	23.93
T15	Oak	17.5	8.5	6.5	9	8.5	2	930	M	G	G	Large mature oak in woodland copse. Dominating tree within copse, deadwood lower crown. Good open grown form.	Retain	30+	A2	11.16	391.32
T16	Oak	18.5	6.5	5.5	5.5	7	3	710	M	G	G	Large mature oak in woodland copse, dominating feature, no obvious defects or signs of ill health identified. Good open grown form.	Retain	30+	A2	8.52	228.08
T17	Hawthorn	10	3	1.5	3	3	1.5	250	M	F	F	Field edge tree, poor form with suppression to north. Growing through the fence.	Retain	10+	C1	3	28.28
T18	Oak	8	3.5	3.5	3.5	3.5	2	290	EM	F	F	Small oak at edge of field, adjacent footpath. Suppressed form.	Retain	10+	C1	3.48	38.05
T19	Hawthorn	7	2.5	2.5	2.5	2.5	1.5	150, 180	EM	F	F	Self sown tree growing on and through fence line, poor form.	Retain	10+	C1	2.8	24.80

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			W	N	S	E											
T20	Hawthorn	7	2	2	2	2	1.5	160	EM	F	F	Self sown tree growing on and through fence line, poor form.	Retain	10+	C1	1.92	11.58
T21	Hawthorn	6	2	2	2	2	1.5	180	EM	F	F	Self sown tree growing on and through fence line, poor form.	Retain	10+	C1	2.16	14.66
T22	Cypress	9	2	2	2	2	0	250*	M	F	F	Cypress on boundary to horse paddock, no access.	Retain	10+	C1	3	28.28
T23	Oak	11.5	4.5	4	5	3.5	2.5	330, 260	EM	F	F	Young twin stemmed oak, no obvious defects or signs of ill health identified.	Retain	20+	B1	5	79.90
T24	Cherry	5	3	3	3	3	1.5	130	Y	F	F	Young cherry in shrub bed,	Retain	20+	C1	1.56	7.65
T25	Cherry	10	4	4	4	4	1.5	320	M	G	G	Cherry located in landscaped grass area, no obvious defects or signs of ill health identified.	Retain	20+	B1	3.84	46.33
T26	Apple	4	2.5	2.5	2.5	2.5	1	120	Y	G	G	Young tree in grass verge, no obvious defects or signs of ill health identified.	Retain	20+	C1	1.44	6.52
T27	Birch	9	3	3	3	3	1	220	EM	G	G	Tree adjacent footpath on grass verge, no obvious defects or signs of ill health identified.	Retain	20+	B1	2.64	21.90

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			W	N	S	E											
T28	field maple	18	2	7	4	6	1	630	M	G	F	Large spreading maple near boundary, co-dominant from base with heavy contact between stems crown break at 2 m into multiple limbs, visible from motorway	Retain	20+	B2	7.56	179.58
T29	Willow	18	9	4	4	4	0.5	390x340	M	F	P	Mature willow co dominant from the base, west growing limb has partially collapsed with a shear crack, remaining upright stem has a large wound with decay on the east side with significant hollowing of the stem	Remove	<10	U	6.2	121.10
T30	Willow	16	10	2	2	2	2	270x250	M	F	F	Slender willow with very heavy lean to the west over the footpath, moderate deadwood, no obvious defects	Consider removal if foot traffic along footpath increases	10+	C1	4.4	61.30
T31	Willow	20	2.5	10	5	10	1.5	770	M	F	P	Large mature willow, tree is hollow with a large opening on the east side, tree is in a stage of collapse with junction failure on all main limbs, large limb is hung up in adjacent oak, potential wildlife value due to cavities	Consider retention due to habitat potential	<10	U	9.24	268.26

Tree/ Group Ref No.	Species	Height (m)	Crown Spread (m)				Crown Clearance	Stem diameter (mm)	Age class	Physiological Condition	Structural Condition	Condition	Management recommendations	ERC	Cat Grade	Radius of Nominal Circle (m)	RPA SqM
			W	N	S	E											
T32	Willow	20	10	10	2	2	2	490	M	F	F	Large willow in small woodland adjacent to stem, single large limb has failed due to decay at 1.5 m, primary upright stem appears to be stable but is heavily weighted and leaning to the west	Retain	10+	C1	5.88	108.63
T33	Willow	12	15	2	8	2	0	420	M	P	P	Collapsed tree overhanging footpath	Remove	<10	U	5.04	79.81
T34	willow	16	6	8	6	6	0	700	M	F	P	Partially collapsed willow, large hangers and deadwood	Retain were possible for ecological value	<10	U	8.4	221.70
T35	willow	14	4	10	4	4	0	380	M	F	P	Partially collapsed willow, heavy deadwood	Retain were possible for ecological value	<10	U	4.56	65.33
T36	oak	14	4	4	4	4	3	280	M	F	F	Small oak heavily suppressed by larger willows, stem splits into two widely spaced stems at 3 m	Retain	10+	C2	3.36	35.47
T37	Hawthorn	7	3	3	3	3	0.5	150	SM	F	F	Small hawthorn part of understory, heavily suppressed by willows	Retain	10+	C2	1.8	10.18
T38	Willow	20	4	9	2	4	0	380	M	F	P	Partially collapsed willow, several broken limbs and previous failures	Retain were possible for ecological value	<10	U	4.56	65.33

Tree/ Group Ref No.	Species	Height (m)	Crown Spread (m)				Crown Clearance	Stem diameter (mm)	Age class	Physiological Condition	Structural Condition	Condition	Management recommendations	ERC	Cat Grade	Radius of Nominal Circle (m)	RPA SqM
			W	N	S	E											
T39	Willow	15	1	10	1	10	0	490	M	F	F	Mature willow with heavy lean to the north east, some collapsed limbs at ground level	Retain were possible for ecological value	<10	U	5.88	108.63
T40	Willow	20	5	5	5	5	8	450	M	F	G	Slender tall willow, slight lean to the south, no obvious defects	Retain	10+	C1	5.4	91.62
T41	Sycamore	20	2	5	2	5	0	370	M	G	G	Slender sycamore adjacent to beck, tree is in good condition and form, partially suppressed by T16	Remove to facilitate development	20+	B2	4.44	61.94
T42	Oak	17	4	8	1	4	3	390	M	G	F	Mature oak in woodland area, suppressed by T16 with subsequent lean to the north away from larger tree, some large pieces of deadwood	Remove to facilitate development	20+	C1	4.68	68.82
T43	Oak	15	8	8	2	2	1	180	EM	G	F	Small oak suppressed by T17, some basal damage and deadwood	Retain	10+	C2	2.16	14.66
T44	Willow	20	2	8	3	10	2	520x470	M	G	F	Large willow adjacent to beck, suppressing several other trees, large limb failure at 1 m north side leaving large open wound, moderate deadwood throughout crown	Remove to facilitate development	10+	C1	8.4	223.00
T45	Willow	20	5	8	4	8	1	340x290x320x270	M	G	F	Willow multistemmed from base, some large pieces of deadwood,	Retain	10+	C1	7.3	169.70

Tree/ Group Ref No.	Species	Height (m)	Crown Spread (m)				Crown Clearance	Stem diameter (mm)	Age class	Physiological Condition	Structural Condition	Condition	Management recommendations	ERC	Cat Grade	Radius of Nominal Circle (m)	RPA SqM
			W	N	S	E											
											suppressing some other trees						
T46	Willow	20	2	2	10	2	5	520	M	F	P	Large willow adjacent to beck, appears to have partially collapsed to the south possibly due to erosion by the beck/stream, leaning on several trees to the south, large pieces of deadwood	remove	<10	U	6.24	122.34
T47	Willow	20	8	8	8	8	3	640	M	F	F	Large spreading willow adjacent to beck, large limb failure at 4 m north side due to included union, moderate deadwood throughout crown	Retain	10+	C1	7.68	185.32
T48	oak	18	3	8	8	8	0	420	M	G	F	Mature oak within G5, spreading crown formed by long slender limbs, moderate deadwood, stem begins as two individual stems which meet and fuse at 1 m leaving a gap	Retain	20+	B2	5.04	79.81
T49	Oak	12	7	7	2	7	1	base 650	M	G	F	One of two multistemmed spreading oak trees by field entrance, some damage and vandalism, moderate deadwood, knurled	Retain	20+	B2	6.5	132.70

Tree/ Group Ref No.	Species	Height (m)	Crown Spread (m)				Crown Clearance	Stem diameter (mm)	Age class	Physiological Condition	Structural Condition	Condition	Management recommendations	ERC	Cat Grade	Radius of Nominal Circle (m)	RPA SqM
			W	N	S	E											
											feature visible from surrounding area						
T50	Oak	12	7	2	7	7	1	base 700	M	G	F	One of two multistemmed spreading oak trees by field entrance, some damage and vandalism, moderate deadwood, knurled feature visible from surrounding area	Retain	20+	B2	7	154.00
G1	Sycamore, ash, cypress	14.5	5	5	5	5	2	250	EM	F	F	Line of self sown trees along top of retaining wall construction. Damage throughout.	Remove to facilitate development	10+	C1	3	28.28
G2	Ash, elder, laurel, elm	10	3	3	3	3	0	150	Y-EM	F	F	Area of self sown young trees, all densely growing within unmanaged area of ground.	Part removal required to facilitate development	10+	C1	1.8	10.18
G3	Ash, oak, elder, hawthorn	13.5	4.5	4.5	4.5	4.5	1	300	EM-M	F	F	Group of trees mixed species located on steep embankment down to stream. Trees located up to top edge of embankment only.	Part removal required to facilitate development	20+	B1	3.6	40.72
G4	Oak	10	2.5	2.5	2.5	2.5	1.5	100	Y	F	F	Area of young oak saplings.	Remove to facilitate development	20+	C1	1.2	4.52
G5	Ash, elder, hawthorn	12	3.5	3.5	3.5	3.5	0	max 250	EM	F	F	Group of predominantly ash self sets on embankment. No obvious signs of ash	Retain	10+	C1	3	28.28

Tree/ Group Ref No.	Species	Height (m)	Crown Spread (m)				Crown Clearance	Stem diameter (mm)	Age class	Physiological Condition	Structural Condition	Condition	Management recommendations	ERC	Cat Grade	Radius of Nominal Circle (m)	RPA SqM
			W	N	S	E											
											dieback but disease is likely to have colonised trees in group.						
G6	Hawthorn	9	4	4	4	4	0	max 200	M	F	F	Overgrown hawthorn hedge.	Remove to facilitate development	20+	C1	2.4	18.10
G7	Ash	11	4	4	4	4	1	280	EM	F	F	2x self sown ash with signs of ash dieback disease.	Remove	<10	U	3.36	35.47
G8	Ash, hawthorn	8	2	2	2	2	0	150 max	Y	F	F	Group of self sown trees within grassed area, ash exhibit signs of ash dieback.	Remove to facilitate development	10+	C1	1.8	10.18
G9	Ash	15	4.5	4.5	4.5	4.5	1	200-400	EM	F	F	Line of self sown as trees, all are growing out of a ha ha wall and in places are causing damage to the structure. many are multi stemmed. All are showing early signs of ash dieback.	Part removal required to facilitate development	10+	C1	4.8	72.40
G10	Elder	8	3	3	3	3	0	200 max	M	F	F	Dense area of elder scrub, unmanaged and generally of poor form and quality.	Retain	10+	C1	2.4	18.10
G11	Blackthorn	5	2	2	2	2	0	max 100	Y	F	F	Dense area of blackthorn scrub at edge of woodland area.	Retain	10+	C1	1.2	4.52
G12	Oak, hawthorn	11	3.5	3.5	3.5	3.5	0	200	EM	G	G	Line of trees located on highways side of fence. Young oak trees and hawthorn.	Retain	30+	B2	2.4	18.10

Tree/ Group Ref No.	Species	Height (m)	Crown Spread (m)				Crown Clearance	Stem diameter (mm)	Age class	Physiological Condition	Structural Condition	Condition	Management recommendations	ERC	Cat Grade	Radius of Nominal Circle (m)	RPA SqM
			W	N	S	E											
												All act as a noise barrier and visual screen to the motorway.					
G13	Elm	17	4.5	4.5	4.5	4.5	1.5	240	EM	F	F	Group of 4 even aged elms within woodland copse. 1 tree has failed at base and fallen into field.	Remove failed tree.	20+	B1	2.88	26.06
G14	Oak, hawthorn	12	4	4	4	4	0	max 200	EM	G	G	Group of trees, mostly young oak with hawthorn understorey forming small woodland copse over small valley landform. Good area of diverse aged canopy.	Retain	30+	B2	2.4	18.10
G15	Sycamore	6	2.5	2.5	2.5	2.5	1.5	400*	M	F	F	Pollarded trees within horse paddock boundary, no access.	Retain	10+	C1	4.8	72.39
G16	Sycamore, ash	10	3	3	3	3	1.5	150 max	Y	F	F	Group of self sown trees on boundary, all slender stems.	Retain	10+	C1	1.8	10.18
G17	Ash, hawthorn, elder	10	4	4	4	4	0	300	M	F	F	Mixed species boundary vegetation, all unmanaged and in generally poor form and condition.	Retain where possible with management	10+	C1	3.6	40.72
G18	Oak, sycamore, elm	18	4	4	6	4	2	max 350	M	G	F	Dense group of broadleaf trees, Minor general damage to tree stems with some standing deadwood, deadwood throughout, tall	Retain	20+	B2	4.2	55.42

Tree/ Group Ref No.	Species	Height (m)	Crown Spread (m)				Crown Clearance	Stem diameter (mm)	Age class	Physiological Condition	Structural Condition	Condition	Management recommendations	ERC	Cat Grade	Radius of Nominal Circle (m)	RPA SqM
			W	N	S	E											
											slender trees, visible from within site						
G19	Hawthorn	12	3.5	3.5	3.5	3.5	0.5	avg 220	M	G	F	Group of hawthorn generally in good shape with moderate deadwood and dense slender crowns, visible from within site	Remove 4 trees to facilitate development	20+	C1	2.64	21.90
G20	Hazel	12	5	5	5	5	0	max 260	M	G	F	4x hazel understory, multistemmed from base, some inclusion and rubbing of tree stems typical of species	Remove 1 tree to facilitate development	10+	C2	3.12	30.59
G21	Hawthorn	12	6	6	6	6	0	max 350	M	G	F	Group of mature hawthorn, multistemmed from the base with dense crowns, moderate deadwood, some ivy colonisation, visible from within site	Remove 1 tree to facilitate development	10+	C1	4.2	55.42
G22	Oak, sycamore, hazel, hawthorn	18	5	5	5	5	1	avg 450	EM-M	G	F	Large group of mainly slender mature oak with hazel and hawthorn undercanopy, trees are generally in fair condition but many have some type of lower stem damage, visible from within site	Retain	20+	B2	5.4	91.62
G23	Oak, hazel	8	3.5	3.5	3.5	3.5	0.5	180	EM	G	F	1 hazel and 2 oak along boundary, squat gnarled form due to previous use as a hedge	Retain	10+	C1	2.16	14.66

Tree/ Group Ref No.	Species	Height (m)	Crown Spread (m)				Crown Clearance	Stem diameter (mm)	Age class	Physiological Condition	Structural Condition	Condition	Management recommendations	ERC	Cat Grade	Radius of Nominal Circle (m)	RPA SqM
			W	N	S	E											
G24	Ash, sycamore, willow	15	4	4	4	4	1	200-350	SM-M	G	F	Broken group of self sown trees along boundary on slip road embankment, generally in good health with some overhang into site	Retain	10+	C1	4.2	55.42
G25	cherry, oak, hawthorn, ash	10	3	3	3	3	1	avg 250, max 350	SM	G	G	Mixed group of trees beyond fenceline on slip road embrace with some established but small oaks, some overhang into site, good screen	Retain	20+	B2	3	28.28
W1	Ash, sycamore, elder	15	4	4	4	4	0	250 avg	EM	F	F	Young woodland group, located on steep embankment. Provides continuous area of canopy along site boundary. High proportion of ash within group, limiting longevity of effective canopy.	Part removal of edge trees in southern section to facilitate access road development.	20+	B2	3	28.28
W2	Oak, sycamore, beech	20	7.5	7.5	7.5	7.5	2.5	600 Avg	M	G	G	Area of mature woodland, overall good form and condition, good visibility and dense area of mature canopy.	Retain	30+	A2	7.2	162.88
W3	Birch, wild cherry, Scots pine, field maple, ash, cherry plum, hazel, hawthorn	10-15	4	4	4	4	0	250-350	SM-M	G	F	Large mixed woodland belt, generally in good condition with slender tall trees, high portion of birch stock have succumb to horse shoe fungus with	Part removal of edge trees along eastern canopy edge to facilitate development.	20+	B2	4.2	55.42

Tree/ Group Ref No.	Species	Height (m)	Crown Spread (m)				Crown Clearance	Stem diameter (mm)	Age class	Physiological Condition	Structural Condition	Condition	Management recommendations	ERC	Cat Grade	Radius of Nominal Circle (m)	RPA SqM
			W	N	S	E											
											standing deadwood common, ash appear to be healthy, good diverse mix of trees visible from surrounding area						
H1	Hawthorn	2	0.5	0.5	0.5	0.5	0	100	SM	F	F	Heavily flailed boundary hedge	Retain	10+	C2	1.2	4.52

Key:

Tree/ Group Ref No. – tree/group number, to be recorded on tree survey plan where necessary.

Species – common and scientific names where possible.

Height – overall height of tree in metres.

Stem Dia – stem diameter, in millimetres at 1.5m above adjacent ground level (on sloping ground to be taken on the upslope of the tree base) or immediately above the root flare for multi-stemmed trees.

Branch spread – in meters taken at the four cardinal points to derive an accurate representation of the crown (to be recorded on the tree survey plan where necessary).

Height of cc – height of crown clearance – in meters above adjacent ground level to inform on ground clearance, crown stem ratio and shading.

Age class – young (Y), young mature (YM), mature (M), over mature (OM) and veteran (V).

Physiological condition – e.g. good (G), fair (F), poor (P) and dead (D).

Structural condition – e.g. collapsing, the presence of decay and any physical defect.

Management recommendations – including further investigations of suspected defects that require more detailed assessment and potential wildlife habitat.

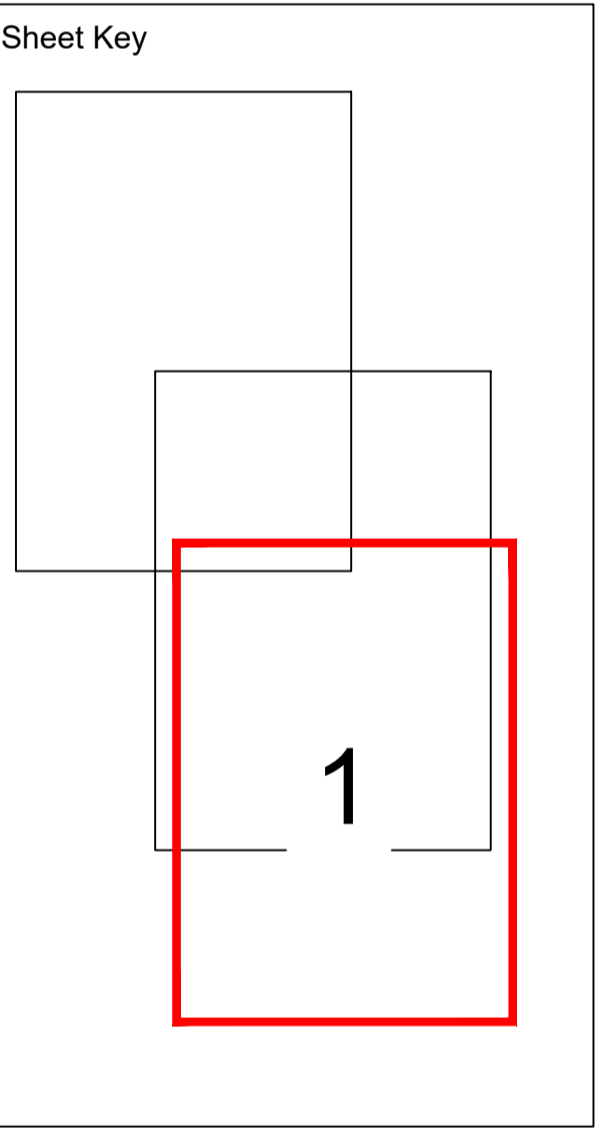
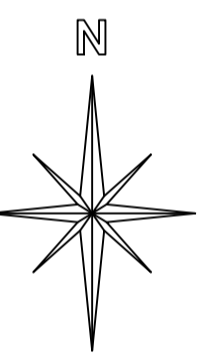
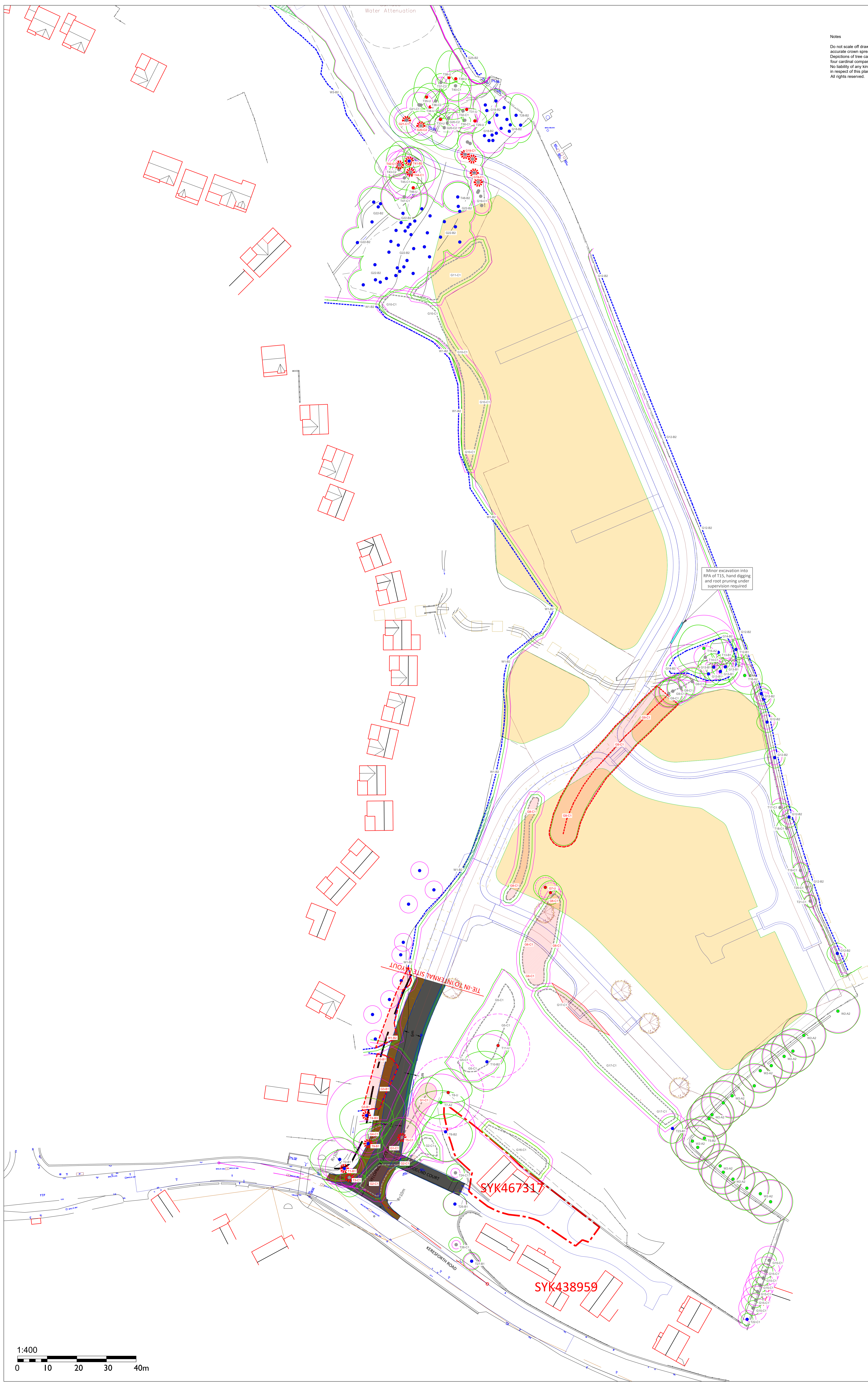
ERC – estimated remaining contribution – in years e.g. less than 10, 10-20, 20-40, more than 40.

Cat grade – category grade – U or A to C, to be recorded in plan on the tree survey plan where possible.

RPA – Root protection area calculated from BS5837:2012 Trees in Relation to Design, Demolition and Construction – Recommendations in sq/m. Where indicated, dimensions of radius of circle or sides of square based around centre point of trunk calculated for design purposes.

Appendix 2. Tree Assessment Plan

Notes
 Do not scale off drawing - refer to the tree data schedule for accurate crown spread measurements.
 Depictions of tree canopies are based on measurements taken to four cardinal compass points.
 No liability of any kind is accepted for any omissions or inaccuracies in respect of this plan.
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Tree Constraints Plan showing tree categories and root protection zones.

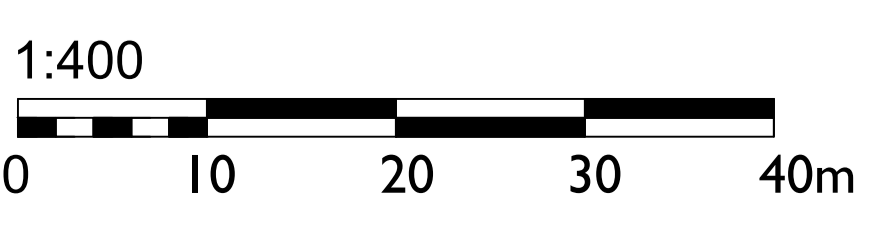
BS5837:2012 Tree Categories

- Category A**
Trees of high quality with an estimated remaining life expectancy of at least 40 years. Groups shown as hatched shapes.
- Category B**
Trees of moderate quality with an estimated remaining life expectancy of at least 20 years. Groups shown as hatched shapes.
- Category C**
Trees of low quality with an estimated remaining life expectancy of at least 10 years, or young trees with a stem diameter below 150 mm. Groups shown as hatched shapes.
- Category D**
Trees in such a condition that they cannot realistically be retained as being trees in the context of the current land use for longer than 10 years. Groups shown as hatched shapes.
- Tree groups**
Shown as dashed centre line. Colour represents category (see above).
- BS 5837:2012 Root Protection Area**
- Tree**
Showing Canopy extent, category colour and tag number (with category).
- Tree/Tree group removal required to facilitate development**

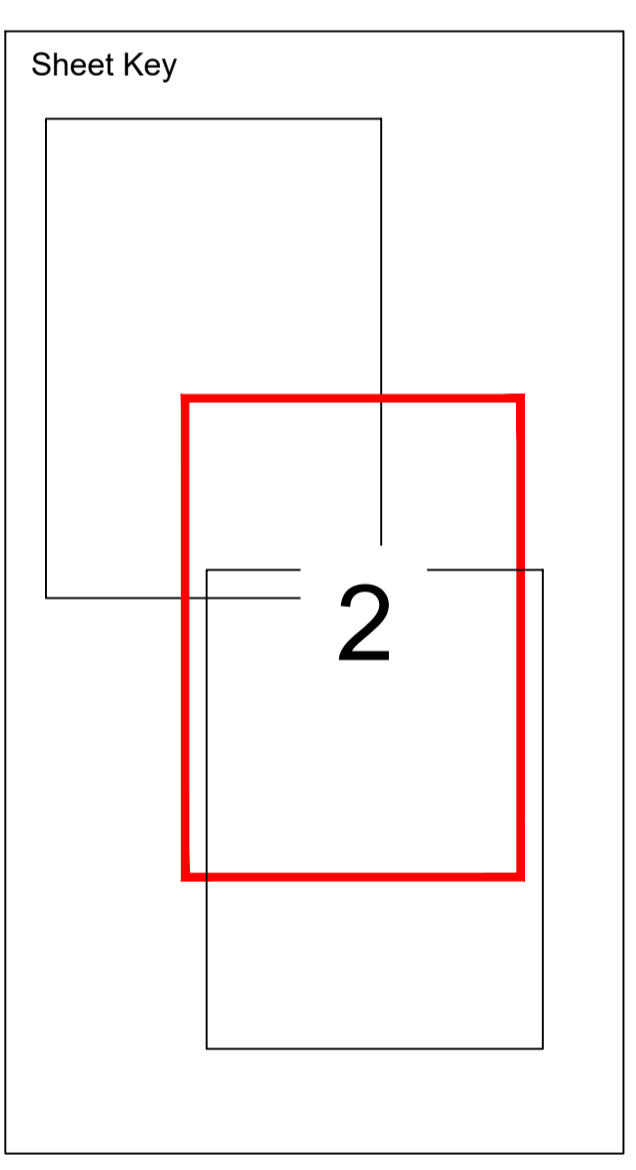
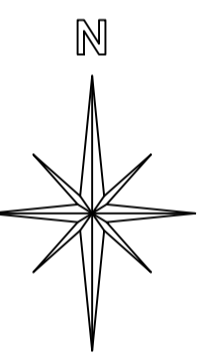
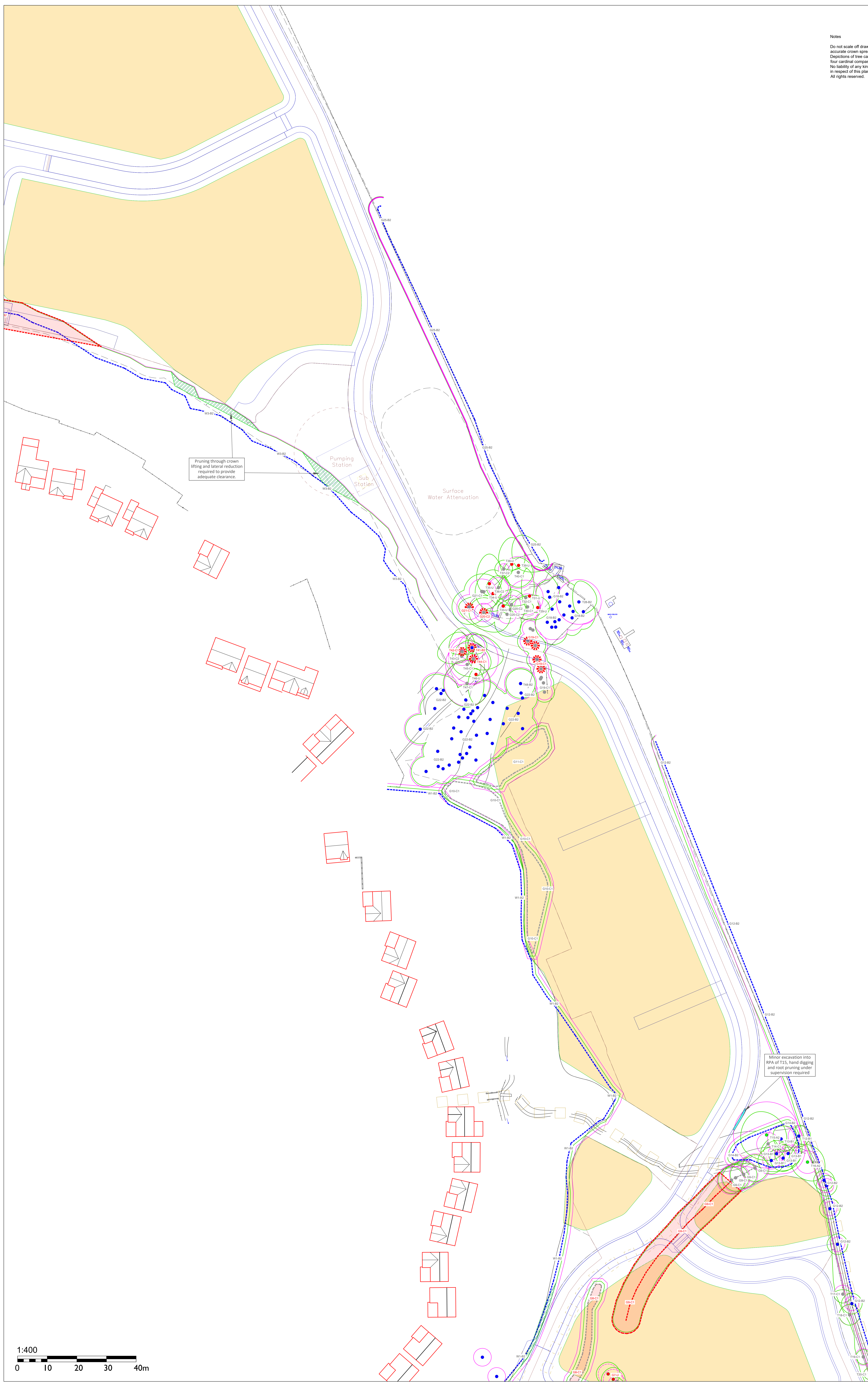
Tree/Group/Hedge numbering: G1-G2, W1-W2

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Client	Keepmoat
Project	Land off Keresforth Road, Dodworth
Drawing Title	Tree Assessment Plan -Sheet 1
Scale	1:400 A0
Date	May 2022
OB	JS
CB	JB
Drawing Number	153.01c
Rev	3



Notes
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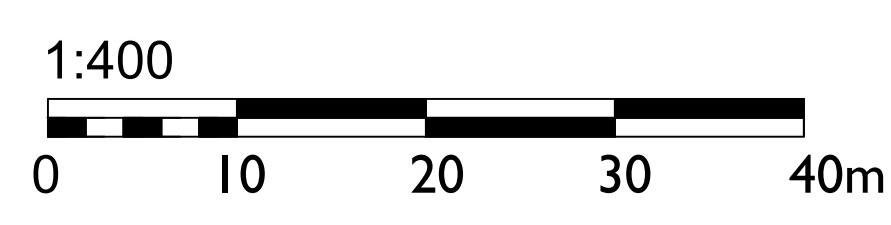


Tree Constraints Plan showing tree categories and root protection zones.

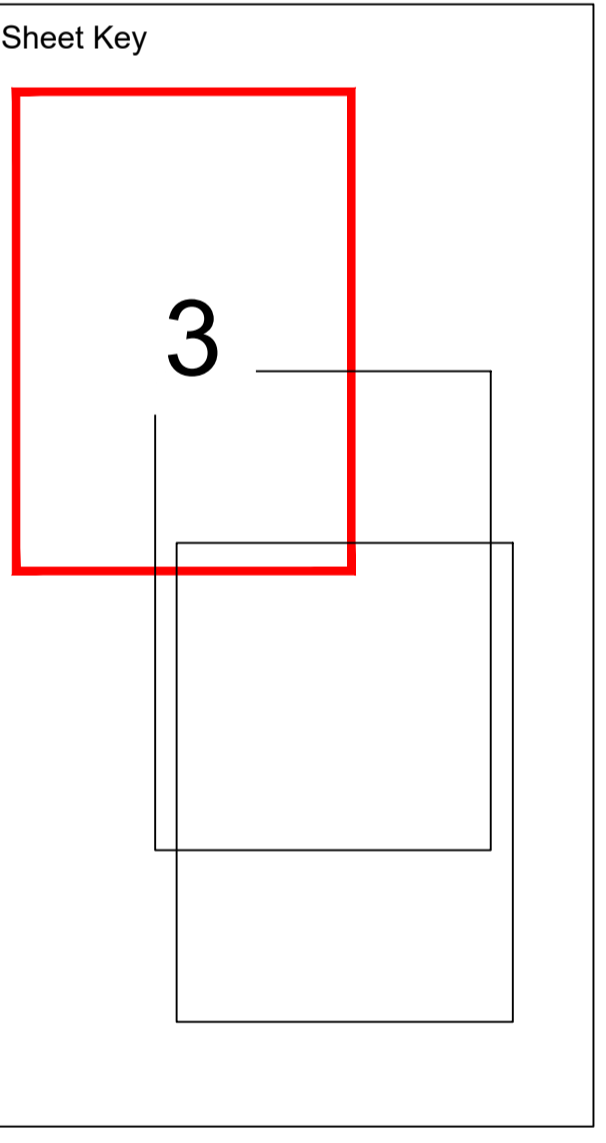
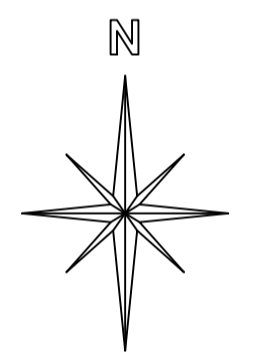
- BS5837:2012 Tree Categories**
- Category A**
Trees of high quality with an estimated remaining life expectancy of at least 40 years. Groups shown as hatched shapes.
 - Category B**
Trees of moderate quality with an estimated remaining life expectancy of at least 20 years. Groups shown as hatched shapes.
 - Category C**
Trees of low quality with an estimated remaining life expectancy of at least 10 years, or young trees with a stem diameter below 150 mm. Groups shown as hatched shapes.
 - Category U**
Trees in such a condition that they cannot realistically be retained as living trees in the context of the current land use for longer than 10 years. Groups shown as hatched shapes.
 - Tree groups**
Shown as dashed centre line. Colour represents category (see above).
 - BS 5837:2012 Root Protection Area**
 - Tree**
Showing canopy extent, category colour and tag number (with category).
 - Tree free group removal required to facilitate development**
- TreeGroup/Hedge numbering: G1-G3, W1-W2

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Client	Keepmoat		
Project	Land off Keresforth Road, Dodworth		
Drawing Title	Tree Assessment Plan -Sheet 2		
Scale	1:400 A0	Date	05 May 2022
Drawing Number	153.01c	DB	JS
		CB	JB
		Rev	3



Notes
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Tree Constraints Plan showing tree categories and root protection zones.

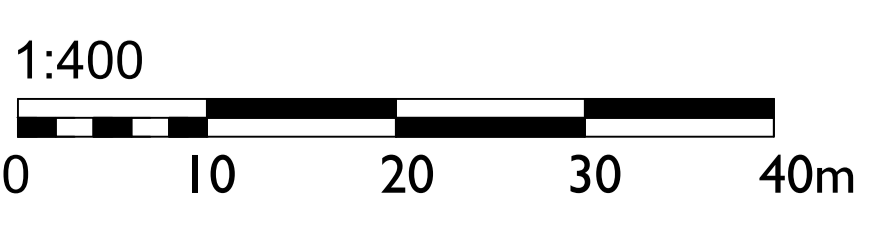
BS5837:2012 Tree Categories

- Category A**
Trees of high quality with an estimated remaining life expectancy of at least 40 years. Groups shown as hatched shapes.
- Category B**
Trees of moderate quality with an estimated remaining life expectancy of at least 20 years. Groups shown as hatched shapes.
- Category C**
Trees of low quality with an estimated remaining life expectancy of at least 10 years, or young trees with a stem diameter below 150 mm. Groups shown as hatched shapes.
- Category D**
Trees in such a condition that they cannot realistically be retained as living trees in the context of the current land use for longer than 10 years. Groups shown as hatched shapes.
- Tree groups**
Shown as dashed centre line. Colour represents category (see above).
- BS 5837:2012 Root Protection Area**
- Tree**
Showing canopy extent, category colour and tag number (with category).
- Tree/Tree group removal required to facilitate development**

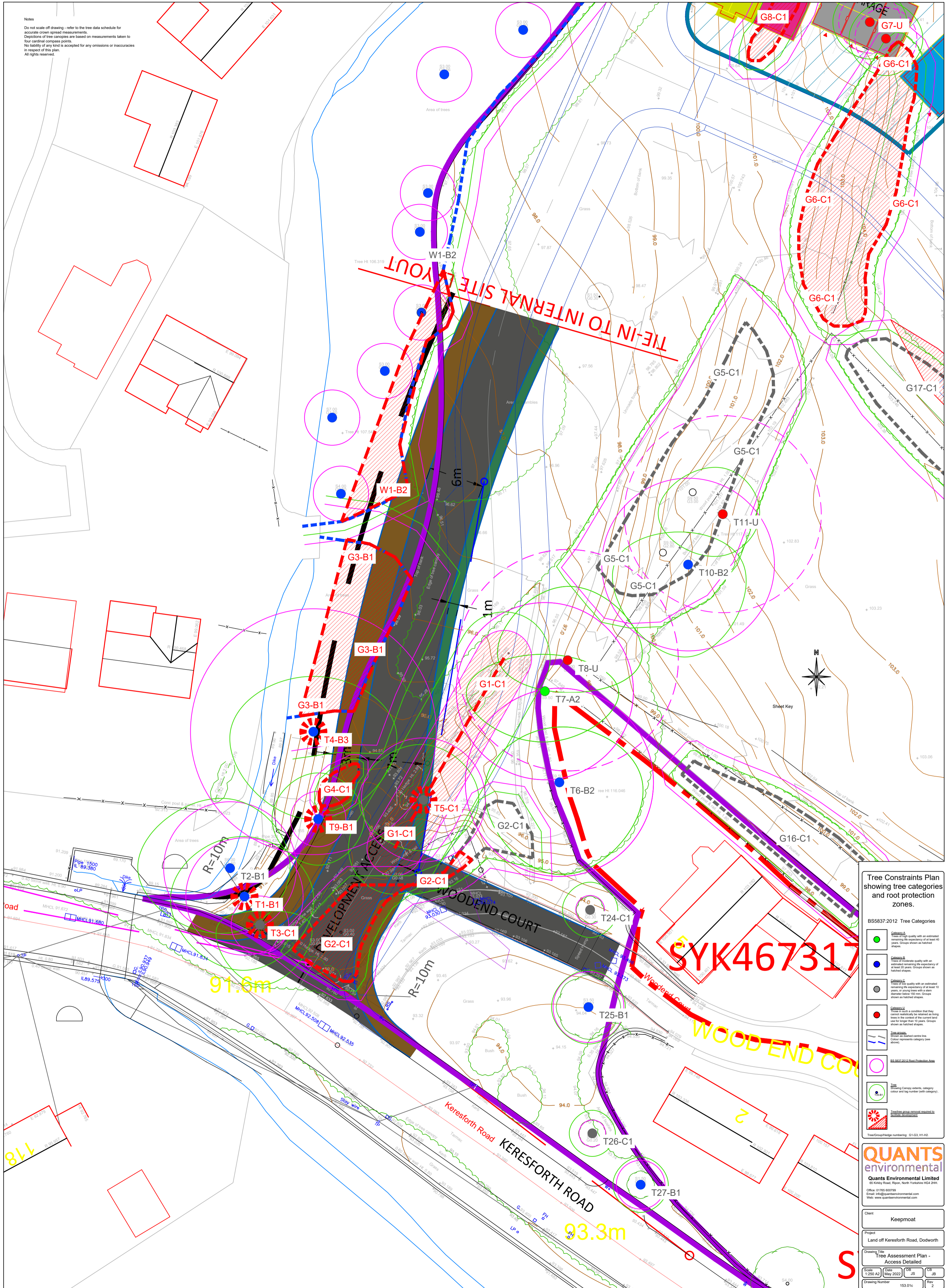
Tree/Group/Hedge numbering: G1-G3, W1-W2

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Client	Keepmoat		
Project	Land off Keresforth Road, Dodworth		
Drawing Title	Tree Assessment Plan -Sheet 3		
Scale	1:400 A0	Date	05 May 2022
Drawing Number	153.01c	DR	JS
		CB	JB
		Rev	3



Notes
 Do not scale off drawing - refer to the tree data schedule for accurate crown spread measurements
 Depictions of tree canopies are based on measurements taken to four cardinal compass points
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Tree Constraints Plan showing tree categories and root protection zones.

- BS5837:2012 Tree Categories
- Category A: Trees of the highest quality with an estimated remaining life expectancy of at least 40 years. Groups shown as hatched shapes.
 - Category B: Trees of high quality with an estimated remaining life expectancy of at least 20 years. Groups shown as hatched shapes.
 - Category C: Trees of moderate quality with an estimated remaining life expectancy of at least 10 years. Groups shown as hatched shapes.
 - Category D: Trees of low quality with an estimated remaining life expectancy of less than 10 years. Groups shown as hatched shapes.
 - Tree groups shown as dashed circles (see notes).
 - BS5837:2012 Root Protection Area
 - Tree canopy extent, category (color and line number with category)
 - ✶ Trees for removal required to facilitate development
- Tree/Group/Zone numbering: G1-G3, H1-H2

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Client	Keepmoat
Project	Land off Keresforth Road, Dodworth
Drawing Title	Tree Assessment Plan - Access Detailed
Scale	1:250 A2
Date	May 2022
Drawn	JS
Check	JB
Drawing Number	153 01e
Rev	2