Arboricultural Impact Assessment

Tyler Grange

St Margaret's Business Centre

3rd November 2022

TG Report No. 13340_R02e_JP_NC

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Summary

S.1. This Arboricultural Impact Assessment has been prepared by Tyler Grange Group Limited on behalf of Godstone Developments Ltd to accompany a full planning application for new development at St Margaret's Business Park in Twickenham.

S.2. The proposed development has been revised following a previous planning refusal and dismissed appeal. The previous scheme required the removal of all trees located on the site which was deemed as harmful to the character and appearance of the area due to the collective value of trees. The scheme has been significantly altered and reduced in scale to allow for the retention of eight of the twelve trees surveyed. Seven of the retained trees are located on-site and one is located off-site within the adjoining pavement.

S.3. Trees proposed for removal include two Category B hornbeams, one Category C hornbeam and one Category U cherry. The removal of the hornbeams and replacement are proposed to facilitate the construction stage of the development and also because the replacement planting offers a more sustainable relationship with dwellings once occupied. The removal of the cherry tree is not required to facilitate the development but has been recommended due to its irremediable poor condition and the opportunity a newly planted feature tree presents. The removal will result in a temporary reduction in canopy cover to this part of Winchester Road, however this will be re-established and improved as the replacement planting matures.

S.4. Tree pruning works are proposed to six of the retained trees to facilitate the construction stage and the long-term management of the trees. The impact the pruning work has been carefully assessed and the effects visual amenity will be localised to the site side as opposed to external street scene.

S.5. Six new trees will be provided on-site, including three silver birch 'Fastigiata' trees, two cherries and one sweet gum. These will be planted at extra heavy standard nursery size to provide instant impact. A variety of factors and constraints have been considered in terms of species selection and planting location. Two trees will be planted at the eastern boundary to directly replace / re-instate canopy cover lost from the removal of two trees in this location. These will be planted closer to the boundary compared to the trees being removed to provide a more suitable clearance from the proposed dwellings. A further two trees will be planted in the south-western corner where there are currently no trees present. A single tree will also be planted within the rear garden of the southern dwelling. The feature sweet gum tree will replace the cherry tree removed within the existing footpath / planter.

S.6. The retention of the majority of the boundary trees and the replacement of those removed allows for the proposed building to be set within a well-treed environment. The collective visual amenity the trees provide to area will be preserved and therefore the proposal is not considered harmful to the character of the area.

S.7. The protection of the retained trees during the construction stage will require a detailed Arboricultural Method Statement (AMS). This report provides an initial strategy for protection to demonstrate how this can be achieved. An AMS is therefore recommended to be secured by planning considering should consent be granted.

Section 1: Introduction

Purpose

1.1. This Arboricultural Impact Assessment report has been prepared by Tyler Grange Group Limited on behalf of Godstone Developments Ltd to accompany a full planning application for new development at St Margaret's Business Park in Twickenham.

1.2. Full planning permission is sought for development of three residential dwellings (Class C3) with associated parking, access, and landscaping. The proposed scheme is shown at **Appendix 1**.

1.3. The application is to be submitted to the London Borough of Richmond upon Thames (LBRT). LBRT's local planning policy and national planning policy pertinent to trees is set out at **Appendix 2**.

1.4. This report provides details of a tree survey of the site and assesses the impact of the proposed development towards existing trees. This report has been guided by the recommendations set out within the British Standard BS5837:2012 'Trees in Relation to Design, Demolition and Construction – Recommendations' (hereafter referred to as BS5837).

Section 2: Baseline Information

Site Description

2.1 The application site boundary is demarcated by the red line as illustrated on the Tree Constraints Plan (TCP) located at the rear of this report **(See Plan 1)**. The site comprises an area of car parking which is bound by trees and soft landscaping to the north, east and west.

Tree Survey Summary

2.2 The original tree survey was undertaken by a suitably qualified tree consultant in August 2020. A site re-visit was completed in March 2022 to verify and update the tree survey. No significance changes were observed other than slight increases to canopy spreads and stem sizes from growth. The survey was completed in accordance with BS5837 and the methodology as detailed at **Appendix 3**. A measured topographical survey (supplied by others) was used to inform the location of trees and their surrounding context.

2.3 The distribution of the trees surveyed is illustrated on the **TCP** together with details of their constraints to new development in accordance with BS5837, including:

- Tree Quality Gradings;[1]
- Root Protection Areas (RPA's);[2]
- Tree canopy spreads;[3]
- Tree Shading.[4]

2.4 Findings for each of the trees surveyed are detailed in the Tree Survey Schedule **(See Appendix 9).** This provides a tabulated record of the trees surveyed, including reference numbers, species composition, tree dimensions, life stage, physiological and structural condition, and the arboricultural value of each survey entry.

2.5 The survey identified a total of 12no. individual trees (trees T1 – T12). 11no. trees are located within the application site (T1 – T11) and a single tree is located outside the application site (T12). Site photos are provided at **Appendix 5**.

2.6 The trees include predominantly early mature amenity plantings, which have established as part of the car park's boundary soft landscaping scheme.

2.7 Trees T1, T2 and T3 are lime trees located at the western boundary. They have been heavily pollarded to a height of approximately 5m. New growth from the pollard points is now lapsed,

[1] The value of arboricultural features surveyed in accordance with the methodology set-out in Appendix 3.
[2] A layout design tool indicating the minimum area around a tree deemed to contain sufficient roots and rooting volume to maintain the tree's viability, and
where the protection of the roots and soil structure is treated as a priority. See further explanation at Appendix 3.
[3] Dimensions of the trees crown spread and clearance from ground level. See further explanation at Appendix 3.
[4] Shade cast by existing trees which may affect the availability of sunlight and daylight within a new development. See further explanation at Appendix 3.

and they require re-pollarding back to the pollard knuckles under good pollard management. This should then be completed under a 2-3 year pollard cycle.

2.8 Trees T4, T5 and T6 are semi mature and early mature hornbeam located at the northern boundary within a continuous soft landscape bed. Tree T4 is has reduced vitality as it is becoming suppressed by the adjacent trees T3 and T5. Tree T4 is of better quality and scale, with a more characteristic form and canopy shape. The trees show evidence of past crown lifting works, likely associated with providing clearance over the car park and to the north of the footpath.

2.9 Tree T7 is a mature cherry tree located within a purpose-built planter in the pavement. Significant decay is present at the base / lower stem of the tree with further bark delamination up the stem. This is symptomatic of bacterial canker. The tree has been poorly pruned and there is low vitality in its canopy. The tree has a very limited functional life expectancy of less than 10 years.

2.10 Tree T8 is a semi mature hornbeam located within the raised planter. Its canopy and crown is slightly suppressed from the adjacent dominant ash and has been damaged by a fallen branch of the ash. There is a large degree of bark loss in the stem and within the crown with exposed / decayed heartwood. The cause of the damage is unknown however it appears to be squirrel or fire damage. The extent and severity of the damage reduces its quality and life expectancy.

2.11 Tree T9 is a semi-mature ash tree located within the raised planter. It has 3 co-dominant stems forming from its base. It has been heavily crown lifted over the adjacent pavement and potentially as an effort to reduce dominance over adjacent trees. The canopy also shows reduced vitality, being sparse and showing above average dieback for its age. It does not represent a good example of the species and is likely to decline over the coming years as opposed to prospering. The canopy condition is symptomatic of ash dieback.

2.12 Trees T10 and T11 are early mature hornbeam located within the raised planter at the western boundary. The crown of T10 is slightly suppressed by the adjacent trees with evidence of minor crown lifting works and some exposed heartwood from previous fire damage. Tree T11 is of a slightly larger scale, forming a broader canopy spread. The crown of tree T11 has been lifted over the pavement to the east.

2.13 Tree T12 is an early mature cherry located within a pavement adjoining Winchester Road. It has been excessively crown lifted and the canopy is suppressed to the east by the adjacent trees. There are resin bleeds in the lower parts of the stem. Overall, this is not considered a good example of the species.

2.14 Overall, there are no individual trees of particular merit present on the site. Individually they are generally unremarkable trees, however, it is noted that as a collective feature they do offer visual amenity to the local residential context and street scene which is largely devoid of trees.

2.15 The trees have been categorised using the 'cascade chart for tree quality assessment' (see **Appendix 3**) recommended by the BS5837. Grading subcategories (1, 2 and 3) are intended to reflect the arboricultural, landscape and cultural values, respectively.

2.16 The grading system allows informed decisions to be made concerning the design and impact of potential development in relation to the arboricultural value of the trees surveyed. The category gradings for each survey entry is detailed in **Table 1** below.

	Category U	Category A	Category B	Category C
Individual Trees	T7	None	T1, T2, T3, T5, T6 and T11	T4, T8, T9, T10 and T12
Groups of Trees	None	None	None	None
Hedgerows	None	None	None	None
Woodlands	None	None	None	None

Table 1: Category Grading of Arboricultural Features.

2.17 No trees were identified as veteran or ancient in terms of age class, nor are any considered to be of high (Category A) arboriculture value.

2.18 Trees of moderate arboricultural value (Category B) are denoted by a 'Blue' tree canopy outline as illustrated on the TCP. They include those with a degree of maturity and those with more limited defects. They provide a moderate degree of visual amenity to the site and its locale, albeit remain as unremarkable specimens.

2.19 Trees of low arboricultural value (Category C) trees are denoted by a 'Grey' tree canopy outline as illustrated on the TCP. They include those with limited longevity due to defects noted and those that provide a limited contribution to visual amenity.

2.20 Tree T7 (Category U) is denoted by a 'Red' tree canopy outline as illustrated on the TCP. The tree is recommended for replacement due to its conditions irrespective of the proposed development.

Tree-related Designations

2.21 Following a desktop search of available mapping and correspondence with RBRT, tree-related designations pertinent to trees and new development is provided in the **Table 2** below.

Designation Type	TG Tree Reference Number(s)
Tree Preservation Order[5]	Trees T1 – T10 are included within Area TPO ref. T1049.
Conservation Area[6]	None
Ancient Woodland [7]	None
Woodland Habitat [8]	None

Table 2: Tree-related Designations

[5] A Tree Preservation Order is an order made by a local planning authority in England to protect specific trees, groups of trees or woodlands in the interests of amenity. An Order prohibits the any works and damage to trees (with some exceptions) without the local planning authority's written consent. More information can be found online https://www.gov.uk/guidance/tree-preservation-orders-and-trees-in-conservation-areas#tree-preservation-orders--general

[6] Trees in a conservation area that are not protected by an Order are protected by the provisions in section 211 of the Town and Country Planning Act 1990. These provisions require people to notify the local planning authority, using a 'section 211 notice', 6 weeks before carrying out certain work on such trees, unless an exception applies. More information can be found online https://www.gov.uk/guidance/tree-preservation-orders-and-trees-in-conservation-areas#tree-preservation-orders--general

[7] Ancient woods are areas of woodland that have persisted since 1600 in England and Wales, and 1750 in Scotland. The Magic Maps website https://magic.defra.gov.uk/MagicMap.aspx has been used to search for ancient woodland on or adjacent to a site.

[8] Spatial data of woodlands identified under the Priority Habitat Inventory (England) Published by Natural England. The Magic Maps website https://magic.defra.gov.uk/MagicMap.aspx has been used to search for woodland on or adjacent to a site.

Root Investigation by TreeRadar

2.22 A root radar of the existing car park has been completed by Tree Radar UK Ltd. The report and results of the assessment are provided at **Appendix 6**.

2.23 The results have also been superimposed on to the TCP to identify the locations and density of tree roots in relation to the tree locations and plotted RPAs (**See Appendix 7**).

2.24 The results suggest low root density within the car parking area and the footprint of the development area. Where roots have been identified beyond the theoretical RPA, this is to be expected as the RPA is designed to demarcate the minimum soil volume required to sustain the tree, not the full extent or location of all tree roots.

2.25 Importantly, the results provide confidence that the development footprint is located within an area less sensitive to tree roots and therefore, with the appropriate construction mitigation, the building is deliverable without resulting in adverse impacts to tree roots in so far as this would affect their overall condition and longevity.

Section 3: Arboricultural Impact Assessment

3.1. This arboricultural impact assessment is informed by a composite overlay of the proposed site plan and the TCP. The overlay is illustrated on the Preliminary Tree Protection Plan (PTPP) located at the rear of this report.

3.2. A Tree Works Plan (TWP) has also been to identify existing trees to be retained, removed and the areas of pruning to facilitate the development. The Preliminary Tree Protection Plan (PTPP) provides an initial strategy for tree protection during the construction stage, including where mitigative works will be required within the rooting areas of retained trees.

3.3. A detailed Arboricultural Impact Assessment is provided for each individual tree below using a series of tables. The assessment considers tree removal, replacement, pruning requirements, construction works in relation to tree rooting areas and the implications of long-term management. An overall impact rating is then provided for each tree, ranging from negligible, low, moderate, and high.

Trees T1, T2 and T3

Proposed works	Description
Retain / Remove	T1 and T2 retained within a rear garden space and T3 retained within a landscape strip.
Compensation Response	Not required.
Tree canopy works	Pollard the trees to the existing pollard points which is recommended irrespective of the proposed development. This will reduce the scale of the canopy areas to facilitate construction and also serve to bring the trees back into a new pollard cycle within the new garden context.
Works within rooting areas	The existing car park surface kerb will be removed from the rooting areas. This will require sensitive removal to avoid damage to tree roots present beneath the surface. The existing levels will remain largely unchanged with the proposed garden level matching the existing car park level. The finished levels around T1 will be slightly higher to reflect the raised planter level, avoiding excavation with this rooting area. The removal of the car park surface and introduction of soft landscaping is likely to benefit tree T1 by improving the rooting conditions which are currently sub-optimal due to the presence of hard surfacing. The footprint of the dwellings incurs within 1m of the plotted RPA for tree T1 at its maximum point. The incursion amounts to 3.6% of the total nominal RPA of the tree. This is a very low proportion of the RPA affected, which is considered necessary to provide sufficient space on the eastern side of the dwelling to accommodate new tree planting. The areas of incursion will be mitigated via an AMS, providing procedures for sensitive excavation work within the RPA to accommodate the building foundation. This will involve manual excavation techniques in accordance with BS5837, with clean root pruning completed where required under arboricultural watching brief. Should more substantial rooting be observed, alternative foundation designs may be required, such as piles / beams. However, given the minor nature of the incursion and that pollard management required, there is technical confidence at this stage that the incursion will not result in adverse harm to the tree. The footprint of the building does not incur within the plotted RPAs of trees T2 and T3 and therefore no concerns are raised regarding impacts towards tree roots. As a precaution and due to the nominal nature of the plotted RPA, excavation of the foundation will be treated sensitively following the same approach as tree T1. New landscaping in the garden and landscape strip will include soft planting and paving. The sensitive implementation of these elements can be addressed by way of an AMS.
Long-term management implications	The trees will require on-going maintenance work in the form of re-pollarding. It is anticipated that the pollarding would be completed on a 2-3 year cycle. The maintenance works will be regulated by the administered TPO on the tree requiring approval from the LPA to complete tree works to an agreed specification.
Overall impact	Negligible – provided that the tree is adequately protected during the construction stage and the long-term management works remains favourable.

Tree T4

Proposed works	Description
Retain / Remove	Retained within a private landscape strip.
Compensation Response	Not required.
Tree canopy works	There is currently 2.5m clearance between the tree canopy edge and the footprint of the proposed building. No facilitation pruning will be required to access around the proposed building to accommodate scaffolding and working space for construction purposes.
Works within rooting areas	The proposed building footprint is located outside the RPA and follows the edge of the existing car park. The tree is located within a raised planter at approximately 100mm above the car park level. The planter level will be retained as part of a private soft-landscape strip to avoid root reducing levels within the rooting areas. New landscaping in the landscape strip will include low level shrub planting. The sensitive implementation of these elements can be addressed by way of an AMS.
Long-term management implications	On-going management works will be the responsibility of a management company or the LPA, depending on the agreements made regarding land ownership. There are no major management implications given the clearances provided from the building line, expect general maintenance and potential future canopy management back from the garden boundary. Long-term pruning treatment is further detailed at Section 4.
Overall impact	Negligible – provided that the tree is adequately protected during the construction stage and the long-term management works remains favourable.

Tree T5

Proposed works	Description
Retain / Remove	Retained within a private landscape strip.
Compensation Response	Not required.
Tree canopy works	The proposed building is located outside the canopy spread of tree. Facilitation pruning will be required to provide a 1m clearance zone between the tree and the building for construction access and scaffolding. This will involve a sympathetic crown lift / pruning back specification that also serves to formatively prune the tree to create an upright crown habit. The visual impact of the pruning is discrete and considered negligible in terms of effecting the appearance and character of the area.
Works within rooting areas	The proposed building footprint is located outside the RPA. The tree is located within a raised planter at approximately 100mm above the car park level. The planter level will be retained within the proposed garden space to avoid reducing levels within the rooting areas. New landscaping in the garden will include soft planting and paving. The sensitive implementation of these elements can be addressed by way of an AMS.
Long-term management implications	The pruning works will be completed on a formative basis to encourage an upright canopy shape adjacent to the building. The long-term management implications are therefore likely to include the removal of branches that have a growth habit towards the building, with upright growing branches retained. The pruning works will remain favourable via adoption of the Tree Management Plan for the site as detailed at Section 4.
Overall impact	Low – the pruning works will have a localised impact on the trees' appearance however this will be experienced at the site side as opposed to the street scene context. The characteristics of the tree suggest it will tolerate and respond to the pruning.

Tree T6

Proposed works	Description
Retain / Remove	Retained within a soft-landscaped area outside private ownership.
Compensation Response	Not required.
Tree canopy works	There is currently 1.65m clearance between the canopy edge of the proposed building. Minor crown lifting work is proposed to accommodate working room and to complete formative pruning. This will have a negligible impact the appearance of the tree from the site side and the canopy facing the street scene side of Godstone Road will remain unaffected. The visual impact of the pruning is therefore localised to a discrete area of the tree and considered negligible in terms of effecting the appearance and character of the area. As a lower value individual tree, any potential impact to the tree has reduced potential to affect the visual amenity of the area. Notwithstanding this, it is considered advantageous to retain the tree to maintain established greening to Godstone Road despite the pruning required.
Works within rooting areas	The proposed building footprint is located outside the RPA of the tree. An area of paving will be required in the RPA which can be appropriately mitigated via sensitive working in accordance with an approved AMS. The tree is located within a planting bed at approximately 100mm above the car park level. The planter level will be retained within the new landscaped area to avoid reducing levels within the rooting area. New hard landscaping will include and low-level wall and fence forming the garden boundary. The sensitive implementation of these elements can be addressed by way of an AMS.
Long-term management implications	The pruning works will be completed on a formative basis to encourage an upright canopy shape adjacent to the building. The long-term management implications are therefore likely to include the removal of branches that have a growth habit towards the building, with upright growing branches retained. The pruning works will remain favourable via adoption of the Tree Management Plan for the site as detailed at Section 4.
Overall impact	Low – the pruning works will have a localised impact on the trees' appearance however this will be experienced at the site side as opposed to the street scene context. As a low value tree, the impact cannot extend higher than low, as the tree's removal would ultimately represent a low impact.

Tree T7

Proposed works	Description
Retain / Remove	Removal due to poor condition. The tree does not require removal to facilitate the development. Replacement planting as part of the new development is considered to most beneficial option in order to reinstate heathy canopy cover.
Compensation Response	A new feature sweet gum tree will be planting in the same location. This will provide a visually appealing tree at this focal point of the street scene.
Tree canopy works	Not applicable.
Works within rooting areas	Not required.
Long-term management implications	Not applicable.
Overall impact	Negligible – as a Category U tree, its early loss is expected. There will be a short-term reduction of canopy cover experienced however this will be reinstated and improved in the longer term via the new planting.

Tree T8

Proposed works	Description
Retain / Remove	Remove due to proximity to the proposed building and to provide openness within the front garden space. The tree has severe bark damage in the stem from squirrel damage, so its retention is not considered appropriate in the proposed context.
Compensation Response	A replacement tree in this location is not proposed due to the limited space available. The larger adjacent ash tree is being retained to maintain tree presence in this location. Replacement tree planting will be provided on-site in line with item 3 of local policy LP 16. Five new trees will be planted, including two cherries and three Silver birch 'fastigiata', two of which will be located in the front gardens to reinstate canopy cover to the street scene of Winchester Road. The Silver birch trees will be planted at an extra heavy standard nursery size stock to provide instant impact.
Tree canopy works	Not required.
Works within rooting areas	Not required.
Long-term management implications	Not required.
Overall impact	Negligible – as a low value tree with existing defects and the compensatory planting proposed its removal is considered negligible. It should be noted that the tree is located further into the site with other trees retained closer to the boundary. Its loss will therefore be experienced more internally within the site as opposed to the wider area.

Tree T9

Proposed works	Description
Retain / Remove	It is proposed to retain the tree within a front garden area. Given the reduced condition of the tree, its replacement should be considered during the detailed design stages should its condition deteriorate further.
Compensation Response	Not required.
Tree canopy works	Canopy reduction of approximately 40%. The tree will require management to facilitate its sustainable retention within the proposed context. Currently, the tree exhibits low vitality in the canopy, above average dieback and a sub-optimal main stem union at the base of the tree. It requires management in the existing context and irrespective of the proposed development due to these issues. Thecanopy reduction proposed seeks to achieve the following: • Contain / re-shape what is a 'leggy' etiolated canopy form. • Encourage lateral and internal canopy growth, as opposed to apical growth. • Reduce wind loading on the sub-optimal co-dominant stem union at the base of the tree. • Facilitate working room around the building for construction purposes. • Reduce canopy encroachment towards the newly planted tree to the south, noting the new tree is located south of the ash and is therefore suitably oriented to receive sunlight.
Works within rooting areas	The proposed building is located outside the plotted RPA. New landscaping works to form the front garden will be required within the RPA. This will involve the construction of a bike / bin store area and the entrance footpath. The bike and bin store will be sensitively constructed using a timber frame fixed with excavation limited to localised post holes. The footpath is located at the southern and western sides of the tree and will involve reducing the levels by approximately 300mm in this location. The footpath incurs within the RPA at the western side and this incursion amounts to 16% of the total RPA. The footpath level will need to meet the level of the adjoining pavement and the FFL of the dwelling to provide a level surface accessible for wheelchair use. The existing level of the planter will be retained for the remaining parts of the garden area, forming a slightly raised bed above the level of the footpath. As a precaution, the footpath will be implemented via sensitive excavation methods in accordance with an AMS.
Long-term management implications	Not required.
Overall impact	Negligible – as a low value tree with existing defects and the compensatory planting proposed its removal is considered negligible. It should be noted that the tree is located further into the site with other trees retained closer to the boundary. Its loss will therefore be experienced more internally within the site as opposed to the wider area.

Tree T10

Proposed works	Description
Retain / Remove	Removal due to its proximity to the dwelling, which would otherwise require heavy pruning and insufficient working room around the building to facilitate construction.
Compensation Response	Replacement tree in line with item 3 of local policy LP 16. A new Silver birch 'fastigiata' will be planted within the front garden that will function as both an amenity garden tree but also a street tree given its location adjoining Winchester Road. The Silver birch trees will be planted at an extra heavy standard nursery size stock to provide instant impact. The replacement planting offers a more sustainable option.
Tree canopy works	Not required.
Works within rooting areas	Not required.
Long-term management implications	Not required.
Overall impact	Low – as a lower value tree the impact is considered low considering the compensatory planting proposed. There will be a temporary loss of overall canopy cover experienced on Winchester Road as they replacement tree establishes. However, the replacement tree offers a suitable long-term relationship with the dwelling and garden space due to its species characteristics.

Tree T11

Proposed works	Description
Retain / Remove	Removal due to its proximity to the dwelling, which would otherwise require heavy pruning and insufficient working room around the building to facilitate construction.
Compensation Response	Replacement tree in line with item 3 of local policy LP 16. A new Silver birch 'fastigiata' will be planted within the front garden that will function as both an amenity garden tree but also a street tree given its location adjoining Winchester Road. The Silver birch trees will be planted at an extra heavy standard nursery size stock to provide instant impact. The replacement planting offers a more sustainable option.
Tree canopy works	Not required.
Works within rooting areas	Not required.
Long-term management implications	Not required.
Overall impact	Low/Moderate – as a moderate value tree the impact is considered moderate, however it is noted the replacement tree planting will serve to compensate and reinstate tree canopy cover. There will be a temporary loss of overall canopy cover experienced on Winchester Road as they replacement tree establishes. However, the replacement tree offers a suitable long-term relationship with the dwelling and garden space due to its species characteristics.

Tree T12

Proposed works	Description
Retain / Remove	Retained within the off-site pavement.
Compensation Response	Not required.
Tree canopy works	Not required.
Works within rooting areas	Not required.
Long-term management implications	Not required.
Overall impact	None.

Tree Planting Proposals

3.4. A Soft-landscape Proposals Plan has been prepared by Tyler Grange to accompany the application (ref. 13340/P05). This includes the planting of six new trees along with low-level shrub planting. The proposed planting has been informed by discussions with LBRT's Tree Officer and the project engineers (in terms of underground services/utilities constraints) to agree a suitable species and location. The planting requires a 3m offset from a gas pipe which is located centrally within the footpath of Winchester Road at the south-eastern corner off the site. The location of the tree planting away from the footpath and into the site is required to ensure no conflicts with utilities arise.

3.5. The species selected is a medium to large sized tree once mature, which will exhibit up upright conical form to avoid canopy conflicts with the proposed dwelling as the tree matures. The trees will be planted at extra heavy standard nursery specification allowing for an instant impact on the street scene. The new trees will also improve the species diversity and age range on the site.

3.6. Four trees are being removed and six suitable trees are being planted on the site. The replacement planting is considered consistent with the items 3 and 4 of local planning policy LP 16, which states that the council will "*require, where practicable, an appropriate replacement for any tree that is felled; 4. require new trees to be of a suitable species for the location in terms of height and root spread, taking account of space required for trees to mature; the use of native species is encouraged where appropriate*".

Capital Asset Valuation of Amenity Trees (CAVAT)

3.7. Tyler Grange completed a CAVAT assessment of the on-site trees as part of the previous application. This was due to the number of trees being removed to facilitate the previous scheme,

and the resultant off-site contributions required to compensate for the removals in line with Policy LP16. The results of the CAVAT assessment are included at Appendix 8.

3.8. Six new trees are being planted on-site to replace trees T7, T8, T10 and T11. The criteria of LP16 items 3 and 4 is considered to be met, and it is the applicants view that there is no obligation for the applicant to provide financial contributions for off-site compensatory tree planting outside the application boundary.

Retained Trees and Construction Mitigation

3.9. The PTPP illustrates an initial strategy for tree protection during the construction stage. This includes the following key items:

- Location of tree protection fencing, providing sufficient working room in between the retained trees and the building to be constructed.
- Where sensitive excavation is required within the RPAs of T1, T6 and T9 to facilitate the construction of the building foundation and entrance footpaths.
- Where RPAs outside the fencing area will require ground protection and / or the existing hard surface retained to protect tree roots during the construction stage of the building. This would then be removed to access / facilitate the landscape works.

3.10. There will be further items of detail to be addressed as part of the detailed design stage, including the non-invasive timber bin / bike store construction and the location of welfare facilities. These elements are not deemed to pose a high threat to the tree rooting environments as they will be constructed 'above ground' with minimal excavation needed.

3.11. It is recommended that an AMS is prepared to set out in detail the tree protection measures should consent be granted. The AMS can be secured by way of a suitable worded planning condition and agreed with LBRT ahead of works commencing on-site.

3.12. It is recommended that the AMS includes the following key items in accordance with BS5837:

- A schedule and specification of tree removal;
- Specifications for tree protection barriers and ground protection
- Procedures for sensitive working within the RPAs (during demolition and construction);
- Arboricultural site monitoring (where required); and
- A detailed Tree Protection Plan including agreed location of welfare and materials storage.

Section 4: Tree Management Plan (Heads of Terms)

Context

4.1 Following consultation with the LPA Tree Officer, this report includes an initial strategy for the short and long-term management of the retained trees.

4.2 The applicant will commit to suitably worded planning conditions that secure detailed arboricultural documentation for the below scenarios:

- Construction of the development – a detailed Arboricultural Method Statement and Tree Protection Plan building on the recommendations and initial strategy for tree protection as detailed within this report.

- Post-development Arboricultural Management Plan – detailing management prescriptions for the long-term, likely a 30-year period.

Aims / Approach

4.3 The post development Arboricultural Management Plan will focus on the long-term pruning treatments for trees T1, T2, T3, T4, T5, T6 and T9. The overarching aim will be to form a long-term sustainable relationship between the occupied dwellings and the adjacent trees. The Management Plan will secure specific pruning treatments promote natural canopy development whilst providing suitable clearances from the occupied dwellings, garden spaces and the adjoining streets.

Responsibilities and Controls

4.4 Trees T1, T2 and T9 will be located within garden spaces and will therefore become the ownership of the occupier. While maintenance of all trees will require approval from the LPA in the form of a Tree Works Application, it is advised the adherence to the Arboricultural Management Plan is secured via restrictive covenant.

4.5 Trees T3, T4, T5 and T6 will be retained with a private landscape strip outside the ownership of occupiers. The current aspiration is for the LPA to take on ownership of this land subject to the Section 106 agreements which will be dealt with post-planning. The maintenance of these trees will therefore be the responsibility of the LPA who will be able to adopt the pruning treatments specified within the Arboricultural Management Plan. Common Law rights permit landowners to prune overhanging branches back to their boundary lines, however this must be undertaken using 'reasonable care'. In order to avoid unsympathetic pruning and to ensure the correct pruning treatment is adopted in the long-term, restrictive covenants should also include adopted of the Arboricultural Management Plan where is relates to trees T3, T4, T5 and T6.

Long-term Pruning Treatments

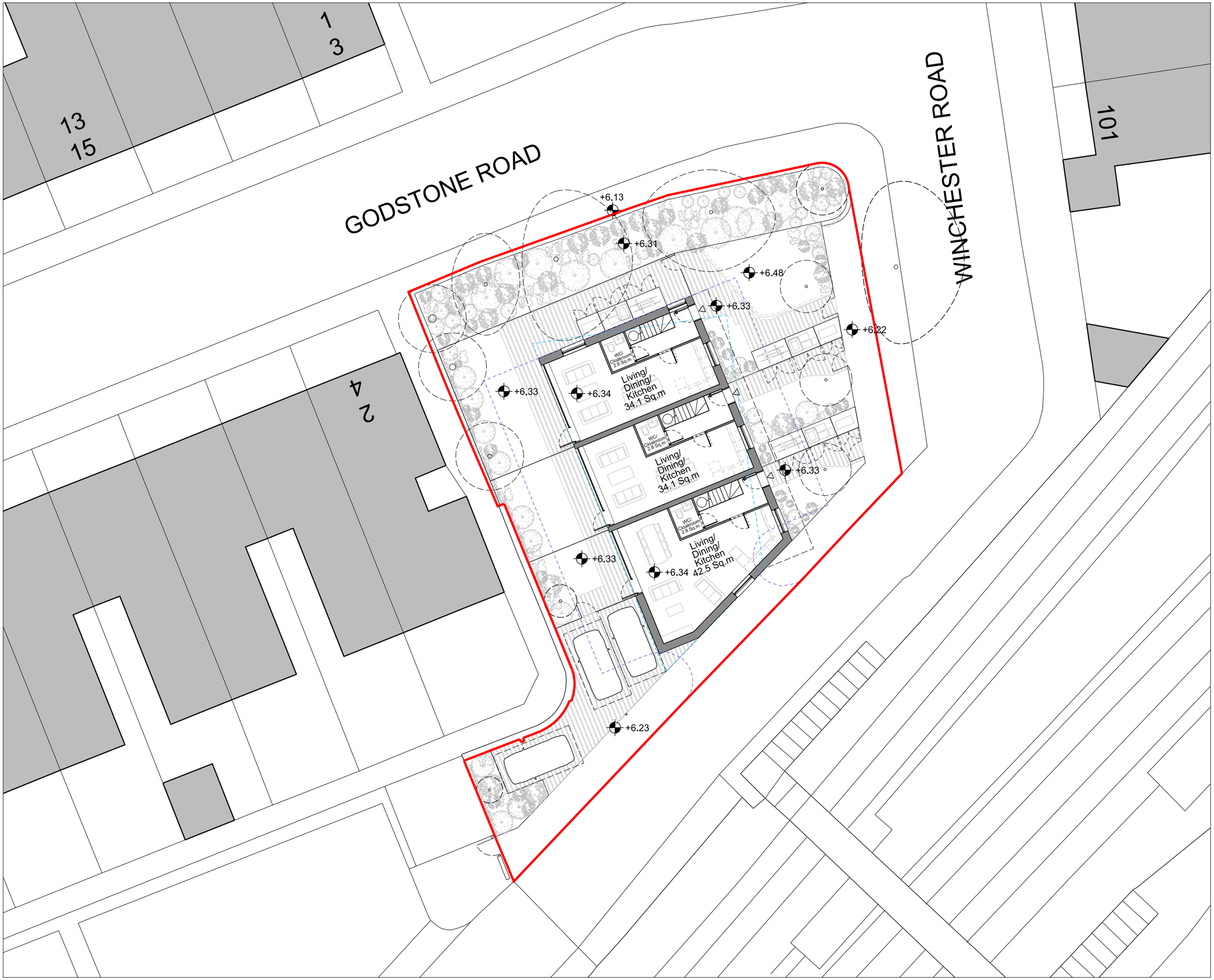
4.6 The table below provides an initial strategy for the pruning of retained trees. The principles of these will be adopted into an approved Arboricultural Management Plan.

Tree Number	Pruning treatment	Timing
T1	Cycle of re-pollarding	*Pre-construction* - Re-pollard *Post-construction / long-term* - Re-pollard on 3-year cycle.
T2	Cycle of re-pollarding	*Pre-construction* - Re-pollard *Post-construction / long-term* - Re-pollard on 3-year cycle.
T3	Cycle of re-pollarding	*Pre-construction* - Re-pollard *Post-construction / long-term* - Re-pollard on 3-year cycle.
T4	Formative crown lifting to promote upright form on southern side where adjacent to garden boundary and dwelling.	*Pre-construction* – no pruning required. *Post-construction* – formative pruning needs assessed by Arboricultural consultant. *Long-term* - Canopy development and formative pruning needs to be assessed by an arboricultural consultant every 3 years.
T5	Formative crown lifting to promote upright form on southern side where adjacent to garden boundary and dwelling.	*Pre-construction* - formative crown lifting works to provide clearance from building working zone and to set the future management line. *Post-construction* – no pruning required. *Long-term* - Canopy development and formative pruning needs to be assessed by an arboricultural consultant every 3 years.
T6	Formative crown lifting to promote upright form on southern side where adjacent to garden boundary and dwelling.	*Pre-construction* - formative crown lifting works to provide clearance from building working zone and to set the future management line. *Post-construction* – no pruning required. *Long-term* - Canopy development and formative pruning needs to be assessed by an arboricultural consultant every 3 years.
T9	Crown reduction to form contained canopy within front garden space.	*Pre-construction* – crown reduction. *Post-construction* – no pruning required. *Long-term* - Canopy development pruning needs to be assessed by an arboricultural consultant every 3 years.

Conclusion

4.7 The scheme has been subject to major design changes and an overall reduction in scale to allow the retention of the majority of trees. Six replacement trees will provided that will offer a suitable extent of compensation. It is acknowledged that while the trees on-site are individually of unremarkable value, as a collective they offer a good degree of tree canopy coverage and greening in the residential setting. The removal of the four trees and their replacement will have a minor effect on this collective value, and therefore the development is considered consistent with local policy as it relates to trees. The appropriate management of retained trees can also be secured via an Arboricultural Management Plan the adopts the principles as set-out within this report.

Appendix 1: Proposed Site Plan



0 1m 5m

N

Application Boundary

Original Building Outline

Existing Site Tarmac Area

Revision	Date	Description
P06	2022-10-26	Issued For Planning
P05	2022-09-26	Building Rotated & Adjusted
P04	2022-07-27	Building Setback 1m
P03	2022-06-29	Pollarded Tree Canoples Updated
P02	2022-06-20	Northern House Plan Adjusted
P01	2022-04-11	Planning Submission

Project

St Margarets Business Centre

Richmond, London

Drawing Title

GA Plan
Proposed Level GF

Drawing Number	Revision
WP-0780-A-0100-P-00	2022-10-26
Scale @ A3	**Revision Date**
1:200	P6

Drawing Purpose

PLANNING

WIMSHURST PELLERITI

The Mews,
6 Putney Common, SW15 1HL

0208 780 2206
info@wp.uk.com
wimshurst-pelleriti.com

Appendix 2: Planning Policy Context

A2.1. Under the Town and Country Planning Act 1990 (as amended) the requirement to consider trees as part of development is a material planning consideration and will be taken into account in the determination of planning applications. Applicable arboricultural planning policy that relates to the site is set out below at a National and Local level.

National Planning Policy

A2.2. The National Planning Policy Framework (NPPF) is a material consideration in planning decisions and outlines the Government's planning policies for England, setting out how these are expected to be applied. The consideration for existing trees and woodlands in the context of planning and new development is set out within Section 15 'Conservation and Enhancing the Natural Environment'.

A2.3. Paragraph 170 provides a series of prerequisites to inform how planning policies and decisions should contribute to and enhance the natural and local environment. This includes "*protecting and enhancing valued landscapes*" and "*recognising the intrinsic character and beauty of the countryside".* The value of ecosystem services is also noted, including the "*economic and other benefits of the best and most versatile agricultural land, and of trees and woodland*".

A2.4. Paragraph 170 also recognises the consideration for "*minimising impacts on and providing net gains for biodiversity".* This includes the need to establish cohesive ecological networks that are "*more resilient to current and future pressures*".

A2.5. Paragraph 171 addresses the need to take a "*strategic approach to maintaining and enhancing networks of habitats and green infrastructure*" adding that plans should be made for the "*enhancement of natural capital at the catchment or landscape scale across local authority boundaries*".

A2.6. Paragraph 174 includes ways in which biodiversity should be protected and enhanced, such as plans that "*identify, map and safeguard components of local wildlife-rich habitats',* as well as "*wildlife corridors and stepping stones that connect them*".

A2.7. Paragraph 175 highlights a series of principles that local planning authorities should apply when determining planning applications, stating that "*if significant harm resulting from a development cannot be avoided (through locating on an alternative site with less harmful impacts), adequately mitigated, or, as a last resort, compensated for, then planning permission should be refused*".

A2.8. Paragraph 175 also adds that "*development resulting in the loss or deterioration of irreplaceable habitats (such as ancient woodland and ancient or veteran trees) should be refused, unless there are wholly exceptional reasons and a suitable compensatory strategy exists*".

A2.9. At a national level, the consideration for trees is recognised in the context of their contribution to green infrastructure and biodiversity networks, and also in terms of their contribution in landscape terms to the local setting and character. Great weight is also applied to the importance of conserving existing aged trees, including ancient woodland and trees and trees considered to be 'veterans'. No ancient woodland, ancient trees or veteran trees were identified within influence of

the application site and therefore para 175 is not considered applicable to the application as it relates to these features.

London Plan (2016)

A2.10. Policy 7.21 Trees and Woodlands of the London Plan reads:

"*Strategic*

A Trees and woodlands should be protected, maintained, and enhanced, following the guidance of the London Tree and Woodland Framework (or any successor strategy). In collaboration with the Forestry Commission the Mayor has produced supplementary guidance on Tree Strategies to guide each borough's production of a Tree Strategy covering the audit, protection, planting and management of trees and woodland. This should be linked to a green infrastructure strategy.

Planning decisions

B Existing trees of value should be retained and any loss as the result of development should be replaced following the principle of 'right place, right tree'. Wherever appropriate, the planting of additional trees should be included in new developments, particularly large-canopied species.

LDF preparation

C Boroughs should follow the advice of paragraph 118 of the NPPF to protect 'veteran' trees and ancient woodland where these are not already part of a protected site. D Boroughs should develop appropriate policies to implement their borough tree strategy."

Local Plan (2018)

A2.11. Policy LP16 'Trees, Woodlands and Landscape' of the adopted Local Plan for LBRT (2018) reads:

"*A. The Council will require the protection of existing trees and the provision of new trees, shrubs and other vegetation of landscape significance that complement existing, or create new, high quality green areas, which deliver amenity and biodiversity benefits.*

B. To ensure development protects, respects, contributes to and enhances trees and landscapes, the Council, when assessing development proposals, will:

Trees and Woodlands

1. resist the loss of trees, including aged or veteran trees, unless the tree is dead, dying or dangerous; or the tree is causing significant damage to adjacent structures; or the tree has little or no amenity value; or felling is for reasons of good arboricultural practice; resist development that would result in the loss or deterioration of irreplaceable habitat such as ancient woodland;

2. resist development which results in the damage or loss of trees that are considered to be of townscape or amenity value; the Council will require that site design or layout ensures a harmonious relationship between trees and their surroundings and will resist development which will be likely to result in pressure to significantly prune or remove trees;

3. require, where practicable, an appropriate replacement for any tree that is felled; a financial contribution to the provision for an off-site tree in line with the monetary value of the existing tree to be felled will be required in line with the 'Capital Asset Value for Amenity Trees' (CAVAT);

4. require new trees to be of a suitable species for the location in terms of height and root spread, taking account of space required for trees to mature; the use of native species is encouraged where appropriate;

5. require that trees are adequately protected throughout the course of development, in accordance with British Standard 5837 (Trees in relation to design, demolition and construction – Recommendations).

The Council may serve Tree Preservation Orders or attach planning conditions to protect trees considered to be of value to the townscape and amenity and which are threatened by development. Landscape

1. require the retention of important existing landscape features where practicable;

2. require landscape design and materials to be of high quality and compatible with the surrounding landscape and character; and

3. encourage planting, including new trees, shrubs and other significant vegetation where appropriate."

Appendix 3: Tree Survey Methodology, Constraints, Mapping and Limitations

Field Work

A3.1 In accordance BS5837, the tree survey included all trees within / in influence of the site and the site boundaries that were over 75mm diameter at breast height (1.5m).

A3.2 Measured topographical survey data (supplied by others) was used to inform tree locations their surrounding context. Any trees not identified on the topographical survey are prefixed with (*) and their locations have been approximated using measurements during the tree survey and further informed by aerial photography where required.

A3.3 The trees surveyed were visually inspected from ground level only. No invasive investigations or climbing inspections were necessary to confirm visual or audible signs of defect or debility and no tissue or soil samples were undertaken. For further clarification please refer to the tree survey explanatory notes in below.

Tree Numbers

'T' prefixes have been used to identify individual trees and commence with 'T1'.

'G' prefixes have been used to identify groups of trees.

'H' prefixes have been used to identify hedgerows.

'W' prefixes have been used to identify woodlands.

Species

A3.4 Species are listed by their common name, both in the schedule and in the report text.

Height and Stem Diameter

A3.5 The stem diameter is measured at 1.5m above ground level and given in millimetres (mm). Tree heights are measured in metres (m) using a clinometer where access and land typography allowed. In instances where access to tree's stem and height measurements were not possible, the dimensions have been estimated by eye.

Crown Spread and Height of Crown Clearance

A3.6 Radial crown spread is measured in metres and is listed for each of the four cardinal points where access has been possible to obtain a measurement. Where access was not possible to measure the spread of the canopy, such distances have been estimated by eye or informed by aerial photography.

A3.7 The measured canopy shapes have been plotted on the **Tree Constraints Plan** at the four cardinal points. For groups of trees, the extent of the canopy has been measured as an average across the group and plotted using the topographical survey mapping. In some instances, Tyler Grange will use aerial photography to inform the canopy spread of larger tree groups and woodlands where topographical data is limited for such features.

A3.8 The distance between the ground level and the first significant branch or radial tree crown, whichever is the lower, has been measured in metres.

Age Class

A3.9 The age of each tree is defined as follows:

Young - within the first third of reaching full maturity;

Semi-Mature - within the second third of reaching full maturity;

Early-Mature - within the last third of reaching full maturity;

Mature - specimen at full maturity; and

Veteran – tree that, by recognised criteria, shows features of biological, cultural or aesthetic value that are characteristic of, but not exclusive to, individuals surviving beyond the typical age range for the species concerned.

Physiological and Structural Condition

A3.10 The physiological or structural condition of each tree is defined as either; good, fair, poor or dead. For each tree, where appropriate, notes on the structural integrity are provided on form, taper, forking habit, storm damage, decay, fungi, pests, etc.

A3.11 An assessment of a tree's physiological condition is defined as:

Good – fully functioning biological system showing expectant vitality for the species i.e. normal bud growth, leaf size, crown density and wound closure.

Fair – fully functioning biological system showing below average vitality i.e. reduced bud growth, smaller leaf size, lower crown density and reduced wound closure.

Poor – a biological system with limited functionality showing clear physiological decline, disease or significantly below average vitality i.e. limited bud growth, small and chlorotic leaves, low crown density and limited wound closure.

Dead – tree observed to fully dead with no living parts.

A3.12 An assessment of a tree's structural condition is defined as:

Good – no significant structural defects.

Fair – structural defects which could be alleviated through remedial tree surgery or arboricultural management practices

Poor – structural defects which cannot be alleviated through tree surgery or arboricultural management practices.

Tree Quality Gradings

A3.13 The value of trees has been assessed in accordance with the BS5837 Cascade Chart for Tree Quality Assessment (See **Appendix 4**). Grading subcategories (1, 2 and 3) reflect arboricultural, landscape and cultural values, respectively.

Root Protection Areas

A3.14 The **Tree Constraints Plan** shows the approximate extent of Root Protection Areas (RPAs). The RPAs have been plotted and calculated in accordance with the methodology set out in Appendices C and D of BS5837, using the tree stem diameter dimensions obtained during the site visit.

A3.15 Plotted RPAs serve as a layout design tool indicating the minimum area around a tree deemed to contain sufficient roots and rooting volume to maintain the tree's viability, and where the protection of the roots and soil structure is treated as a priority.

A3.16 Where pre-existing site conditions or other factors indicate that rooting may occur asymmetrically, a polygon of equivalent area should be produced. Modifications to the shape of the RPA should reflect a soundly based arboricultural assessment of likely root distribution observed on-site. Any deviation in the RPA from the original circular plot should take account of the following factors whilst still providing adequate protection for the root system:

a) the morphology and disposition of the roots, when influenced by past or existing site conditions (e.g. the presence of roads, structures and underground apparatus);

b) topography and drainage;

c) the soil type and structure; and

d) the likely tolerance of the tree to root disturbance or damage, based on factors such as species, age, condition and past management.

A3.17 The plotted RPAs have therefore informed the design of the proposed development where possible. While developing within RPAs should be avoided, special working methods can be adopted to alleviate the RPA disturbance for cases where the development is considered necessary and unavoidable.

Tree Canopies and Shading

A3.18 The distribution of tree canopy cover on and within influence of the site is illustrated on the **TCP**. Canopies have been plotted at cardinal points for individual and groups of trees. The Tree Survey Schedule included at **Appendix 5** to the rear of this report lists the vertical clearance from site ground level to significant tree branching of individual trees. This measurement informs the impacts of accessibility and development beneath tree canopies.

A3.19 The principal tree shadow constraints are shown on the **TCP** and have been plotted in accordance with BS5837 using the current height of surveyed trees. The indicative shade cast by existing surveyed trees signifies the area within which the amenity interests of shading, available daylight and the proximity of trees to any future site uses may be impacted upon should a tree be retained as part of development.

A3.20 Where shading is unavoidable, the potential adverse impact of shadowing should also be reviewed on balance with the positive aspects of retaining a degree of canopy shade. BS5837:2012 (para. 5.3.4, a) NOTE 1) states that "shading can be desirable to reduce glare or excessive solar heating, or to provide comfort during hot weather. The combination of shading, wind speed/turbulence reduction and evapotranspiration effects of trees can be utilised in conjunction with the design of buildings and spaces to provide local microclimatic benefits".

Limitations

A3.21 The comments made are based on observable factors present at the time of inspection. Although the health and stability of trees in their current context is an integral part of their suitability for retention, it must be understood that this report is not a tree risk assessment and should not be construed as such. While every attempt has been made to provide a realistic and accurate assessment of the trees' condition at the time of inspection, it may have not been appropriate, or possible, to view all parts or all sides of every tree to fulfil the assessment criteria of a risk assessment.

A3.22 No tree can be considered entirely safe, given the possibility that exceptionally strong winds could damage or uproot even a mechanically 'perfect' specimen. It is therefore usually accepted that hazards are only recognisable from distinct defects or from other failure-prone characteristics of the tree or the site. An assessment of the potential influence of trees upon existing buildings or other structures resulting from the effects of trees upon shrinkable load-bearing soils or the effects of incremental root or branch growth, are specifically excluded from this report.

Un-assessable Risks

A3.23 Any alteration to the application site or development proposals could change the current circumstances and may invalidate this report and any recommendations made.

A3.24 The Wildlife and Countryside Act (WCA) 1981 (as amended) makes it an offence to disturb nesting birds or recklessly endanger a bat or its roost. Bats are also a European protected species and are additionally protected under the Conservation (Habitats & c) Regulations 1994 and 2010 (as amended). The survey findings, constraints, opportunities and design or mitigation recommendations included within that report must be read alongside this document.

A lack of recommended work does not imply that a tree does not pose an unacceptable level of risk and likewise, it should not be implied that a tree will present an acceptable level of risk following the completion of any recommended work

Appendix 4: BS 5837:2012 Cascade Chart for Tree Quality Assessment

TREES FOR REMOVAL				
Category and Definition	**Criteria**			**Identification on Plan**
Category U Those in such a condition that they cannot realistically be retained as living trees in the context of the current land use for longer than 10 years	Trees 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 category U 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 or very low-quality trees suppressing adjacent trees of better quality. (**NOTE**: Category U trees can have existing or potential conservation value which it might be desirable to preserve)			**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	
Category A **Trees of high quality** with an estimated remaining life expectancy of at least 40 years	Trees that are particularly good examples of their species, especially if rare or unusual; or those that are essential components of groups or formal or semi-formal arboricultural features (e.g. the dominant and/or principal trees within an avenue)	Trees, groups or woodlands of particular visual importance as arboricultural and/or landscape features	Trees, groups or woodlands of significant conservation, historical, commemorative or other value (e.g. veteran trees or wood-pasture)	LIGHT GREEN

TREES TO BE CONSIDERED FOR RETENTION				
Category B ***Trees of moderate quality*** *with an estimated remaining life expectancy of at least 20 years*	Trees that might be included in category A, but are downgraded because of impaired condition (e.g. presence of significant though remedial defects, including unsympathetic past management and storm damage), such that they are unlikely to be suitable for retention for beyond 40 years; or trees lacking the special quality necessary to merit the category A designation	Trees present in numbers, usually growing as groups or woodlands, such that they attract a higher collective rating than they might as individuals; or trees occurring as collectives but situated so as to make little visual contribution to the wider locality	Trees with material conservation or other cultural benefits.	MID BLUE
Category C ***Trees of low quality*** *with an estimated remaining life expectancy of at least 10 years, or young trees with a stem diameter below 150mm*	Unremarkable trees of very limited merit or such impaired condition that they do not qualify in higher categories.	Trees present in groups or woodlands, but without this conferring on them significantly greater collective landscape value; and/or trees offering low or temporary/transient landscape benefit.	Trees with no material conservation or other cultural value.	GREY

Appendix 5: Site Photographs

Tree T1 (lime): Heavily pollarded. New growth forming contained canopy.

Tree T2 (lime): Heavily pollarded. New growth forming contained canopy.

Tree T3 (lime): Heavily pollarded. New growth forming contained canopy.

Tree T4 (hornbeam): Slightly mutually suppressed by adjacent trees.

Tyler Grange

Tree T5 (Hornbeam): Selective minor crown lifting works observed.

Tree T6 (Hornbeam): Selective minor crown lifting works observed.

Tree T8 (hornbeam): Minor crown lifting works and slightly suppressed / damaged crown from dominant ash / fallen branch. Note major squirrel damage in stem reducing life expectancy.

Tree T8 (hornbeam): close-up of extensive squirrel damaged in crown.

Tyler Grange

Tree T7 (cherry): poorly pruned, particularly low vitality in crown / canopy with dieback.

Tree T7 (cherry): Major decay at base of stem. Symptomatic of bacterial canker.

Tree T9 (ash): Heavily crown lifted over pavement. Minor dieback in canopy.

Tree 10 (hornbeam): Slightly suppressed with minor crown lifting works observed.

Tree T11 (hornbeam) crown lifted over pavement.

Tree T12 (cherry) off-site street tree with poor form.

Appendix 6: Root Investigation by TreeRadar – Report

Tree Radar UK Ltd

Root Investigation by TreeRadar

SITE
Carpark on Winchester Road
St. Margaret's
Twickenham

CLIENT
Godstone Developments Limited

Ian Lee
MICFor MArborA BSC (Hons) Tech Cert (Arbor A)
Chartered Arboricultural Consultant

DATE: 09.03.2022
OUR REF: TRUK 0206

CONTACT DETAILS: 01622 435929
Ian@treeradaruk.com

EXECUTIVE SUMMARY

This report provides information on the root spread of a series of trees growing within planted shrub beds along the northern, eastern and western edges of the carpark on Winchester Road, St. Margaret's, Twickenham, where it is proposed to redevelop the site for residential purposes.

The scan lines do not cover the full root protection areas (RPAs) of the subject trees due to physical restrictions in the form of ground vegetation which obstructs the scanning cart, a parked van and mounded debris, but covers the asphalt surface of the car park where it is understood any development will take place.

The results show that the rooting densities of the trees within the shrub beds to the north, east and west are much lower than would typically be found within the RPAs of trees of this size, species and proximity. This is likely due to the roots either being restricted when the car park was originally built or else the trees are preferentially rooting in the more favourable conditions within the shrub beds.

It should be noted that although the roots are extending beyond the theoretical RPAs of the subject trees, this is entirely to be expected. The RPA is not designed to retain and protect every tree root but seeks to retain a minimum volume of soil needed to maintain the tree at its current size. Given the lower than expected rooting densities beneath the asphalt surfacing, an asymmetrical RPA may be more appropriate in this instance to take into account that the trees are preferentially rooting away from the asphalt hard surface and the sub-optimal rooting conditions beneath it.

The final design and layout of the development and the depth of any excavations, along with the working methodology are not known at the time of writing this report, however, co-operative use of the results between the arboricultural consultant and the design and construction teams will minimise the impact of the development upon the subject trees and increase their chances of being successfully retained and protected within the scheme.

Contents

1. INTRODUCTION: -

1.1. This report provides information on the root spread of a series of trees growing within planted shrub beds along the northern, eastern and western edges of the carpark on Winchester Road, St. Margaret's, Twickenham, where it is proposed to redevelop the site for residential purposes.

1.2. The survey was carried out on 28th February 2022 using TreeRadar, which identifies locations of roots with a diameter greater than 20mm along the scan lines. The scan line results show their depth and location. Determination of root diameter is difficult (other than it being above 20mm), but new software will be released shortly which will provide this detail. This report provides technical details of root locations, and the use of this in developing any designs and assessing the arboricultural impact will be carried out by the project arboricultural consultant and the wider design team.

2. CURRENT SITE DESCRIPTION: -

2.1 The survey area comprises of a roughly square asphalt surfaced car park located on the corner of Winchester Road and Drummonds Place, opposite the platforms of St. Margaret's Station . The site is a car park is bounded to the north, east and west by planted shrub boarders, with residential properties beyond the shrub bed to the west as well as on the far side of the roads to the north and east. Drummonds Place runs north east to south west along the southern site boundary, providing access to an industrial estate and with the station platforms on the south side of the road.

2.2 A tree survey was carried out by Tyler Grange as part of their ongoing arboricultural consultancy work for the site. Details of the trees have been covered within their report and the information will not be repeated within this report, as it is outside the remit of the TreeRadar survey. For ease of reference these tree numbers will be used within the TreeRadar report.

3. METHODOLOGY:-

3.1 This report identifies locations of roots with a diameter greater than 20mm along scan lines. The TreeRadar unit is a scanning cart with a 400MHz antenna which sends a beam every 1cm down to a depth prescribed by the operator (usually between 2 - 3m, which is the maximum depth). The reflection is recorded in a field computer and then analysed by the latest software, TBA. Water and metal reflect, therefore the machine records live roots which contain moisture, and cannot detected dead dried out roots. For each scan line a 'virtual trench' is produced which shows all roots with a diameter greater than 20mm. The machine cannot determine root diameter, other than it being greater than 20mm, due to the lack of correlation between the amounts of live root tissue in a root compared to the thickness of a root. For example, a large root may have a partially desiccated or dysfunctional central core with low moisture content and so give a relatively weak radar return, while a smaller root may be filled with water molecules and give a much stronger return. An anticipated update of the software is expected to begin to address this issue.

Photo of the TreeRadar cart (in a different setting)

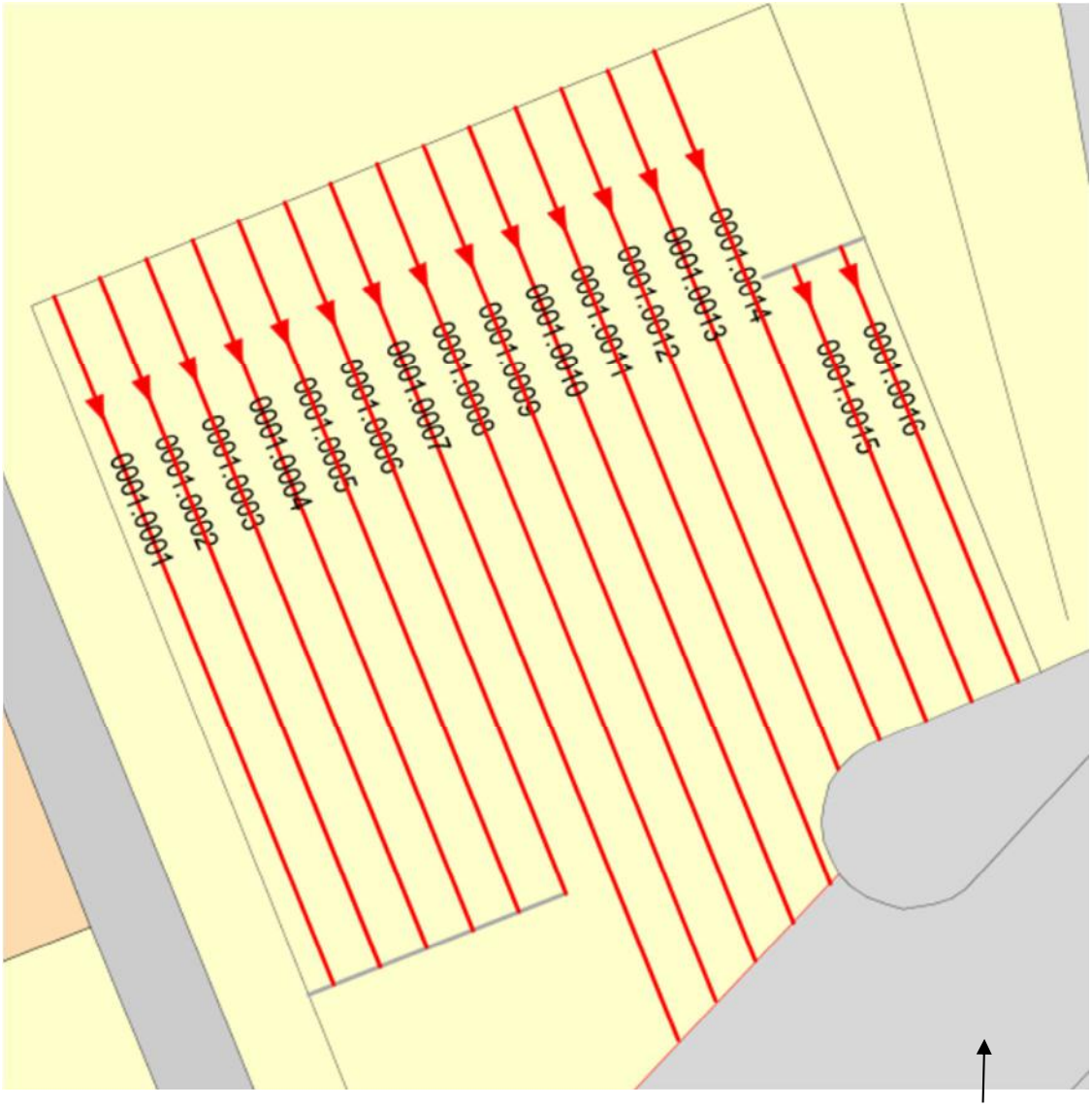
3.2 Scanning conditions were relatively straight forward, though sections of the site contain a very large number of metals and non-root reflectors found within the results, which were filtered out of the data as far as was reasonably practical. This may slightly affect the accuracy of the results, but we are experienced at looking at data in these situations. The scan lines do not cover the full root protection areas (RPAs) of the subject trees due to physical restrictions in the form of ground vegetation which obstructs the scanning cart, a parked van and mounded debris, but covers the asphalt surface of the car park where it is understood any development will affect the trees will take place.

3.3 The locations of the scan lines are found at Appendix 1 on the TreeRadar plan (reference *TRUK 0206 TR,* extract below), and the results super-imposed on the base plan (*TRUK 0206 TRR).* Top-down views for the roots at various depths, along with the cross sections for each scan line are found at section 8. Details of how to read the results are found at section 7.

Plan 1 – extract from TRUK 0206 TR showing the survey area. Do not scale. North is vertical. Red lines are the scan lines.

4. RESULTS:-

4.1. Scan lines 0001.0001-0016 – Scan lines 0001.0001-0016 are a series of parallel lines running roughly north west to south east, starting 0.5m from the northern kerb line of the car park and ending at the southern edge of the asphalt, or where a parked van blocked the passage of the scanning cart. Scan line 0001.0001 is located 0.5m from the western kerb line and runs parallel to it, with each subsequent line located an additional 1m from the western kerb in turn. Scan lines 0001.0015-0016 start late due to a mound of debris. An extract from the tree radar plan *TRUK 0206 TR* below shows the locations of the scan lines.



Plan 2. Extract from TreeRadar plan TRUK 0206 TR showing location of scan lines 0001.0001-0016. Do not scale.

Photo 2. Survey area for 0001.0001-0007. Arrow shows location of 0001.0005.

4.1.1. **Results:** Along the western edge of the survey area, roots are initially found in moderate rooting densities, with the density rapidly dropping to low by 0001.0003 and very low by line 0001.0005 (4.5m from the kerb). Densities remain very low across the car park, starting to slowly rise in line 0001.0012, but remaining low out to 0001.0015, only rising to moderate/low in line 0001.0016. The distribution of tree roots along the length of the scan lines is very uneven, with the majority of the tree roots found in the first 5m from the northern kerb edge. Root density drops dramatically along the length of the lines, with the exception of along the 0001.0001-0002 lines which show a slower decline, and even along the 0001.0015-0016 which have trees growing in the shrub beds immediately to their east.

4.1.2. The roots are predominantly found in an unevenly distributed band between 40-130cm deep, though there are some roots shallower and deeper than this closer to the edges of the survey area. A very large number of metals and non-root reflectors were found within the survey data.

5. CONCLUSIONS:-

5.1. The TreeRadar unit picks up roots with a diameter greater than 20mm but does not detect smaller roots. However, where a large clump or mat of roots creates sufficient mass, this may be detected. The radar unit is also unable to determine which tree the roots are associated with, and it is the experience of the operator and arboricultural consultant to determine the most likely source.

5.2. The scan lines do not cover the full root protection areas (RPAs) of the subject trees due to physical restrictions in the form of ground vegetation which obstructs the scanning cart, a parked van and mounded debris, but covers the asphalt surface of the car park where it is understood any development will affect the trees will take place.

5.3. Within the survey data a very large number of metals and non-root reflectors were found, with poorly defined soil horizons. This indicates that the soils have been significantly disturbed over time, typical of sites which may have been in use for a long period, dug up or levelled multiple times over the years. Non-root reflectors within the data can initially provide false positives within the results, which are identified and removed by the operator during the analysis process as far as possible. This can leave false positives within the data, but not false negatives. These false positives may consist of porous building materials such as clay bricks and clinker or clay nodules, which are porous and retain water at higher densities than the surrounding soils. This retained water has the same radar signature as the water held within tree roots and so cannot all be disregarded.

5.4. The results show that the rooting densities of the trees within the shrub beds to the north, east and west are much lower than would typically be found within the RPAs of trees of this size, species and proximity. This is likely due to the roots either being restricted when the car park was originally built or else the trees are preferentially rooting in the more favourable conditions within the shrub beds.

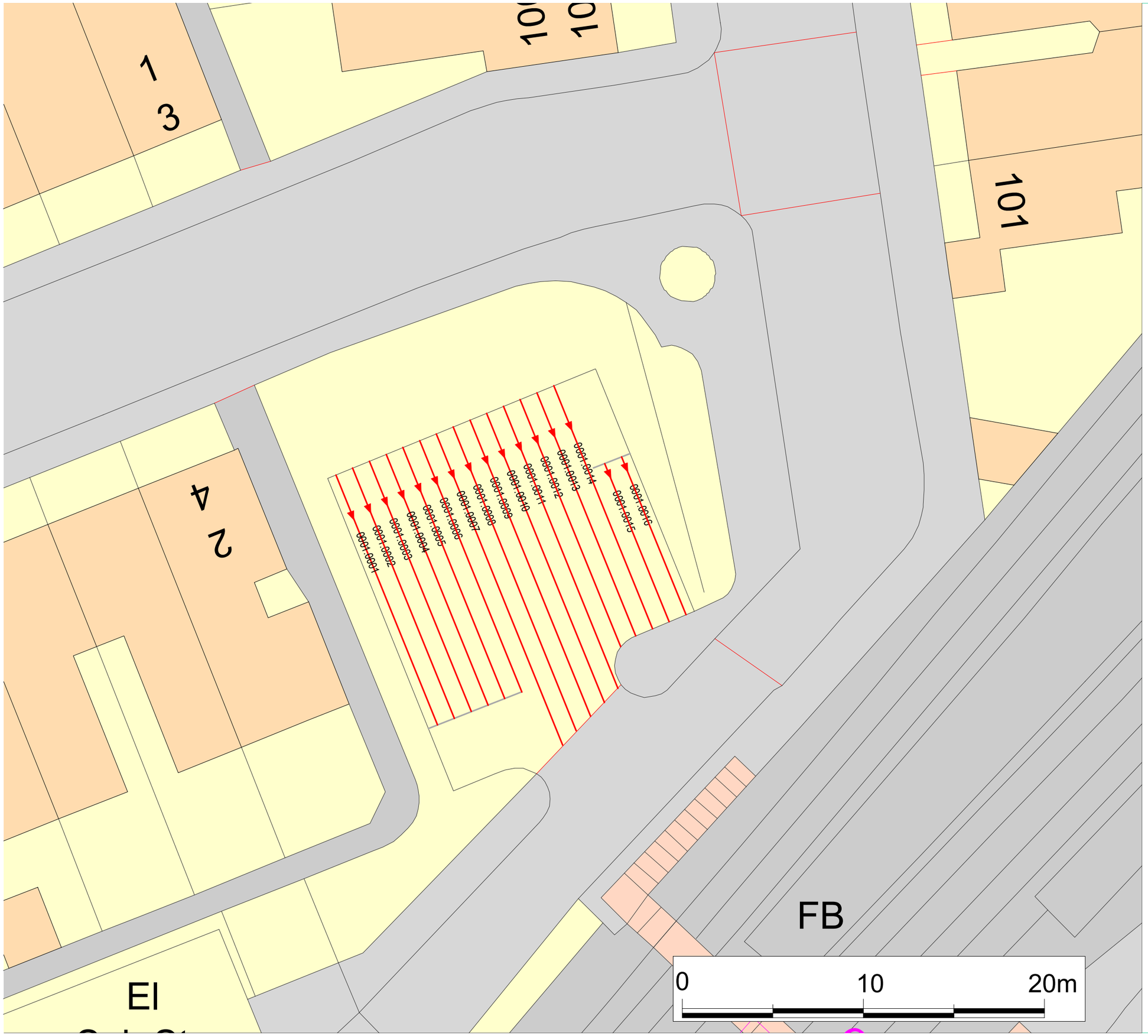
5.5. In areas with very high numbers of false positives and low overall root detections the proportion of false positives increases as the number of root detections decreases, so the likelihood is that the number of true tree roots in the southern part and centre of the site is even lower than the already very low rooting density.

5.6. It should be noted that although the roots are extending beyond the theoretical RPAs of the subject trees, this is entirely to be expected. The RPA is not designed to retain and protect every tree root but seeks to retain a minimum volume of soil needed to maintain the tree at its current size. Given the lower than expected rooting densities beneath the asphalt surfacing, an

asymmetrical RPA may be more appropriate in this instance to take into account that the trees are preferentially rooting away from the asphalt hard surface and the sub-optimal rooting conditions beneath it.

5.7. The final design and layout of the development and the depth of any excavations, along with the working methodology are not known at the time of writing this report, however, co-operative use of the results between the arboricultural consultant and the design and construction teams will minimise the impact of the development upon the subject trees and increase their chances of being successfully retained and protected within the scheme.

6. APPENDIX 1 – TREE RADAR PLAN TRUK 0206 TR AND TREERADAR RESULTS PLAN TRUK 0206 TRR



Please refer to full arboricultural report for details

0006.0001

Scan lines and direction

Scan line start and end

Rev :	Description :	Authorized :

Tree Radar UK Ltd
t: 01622 435929
www.treeradaruk.com

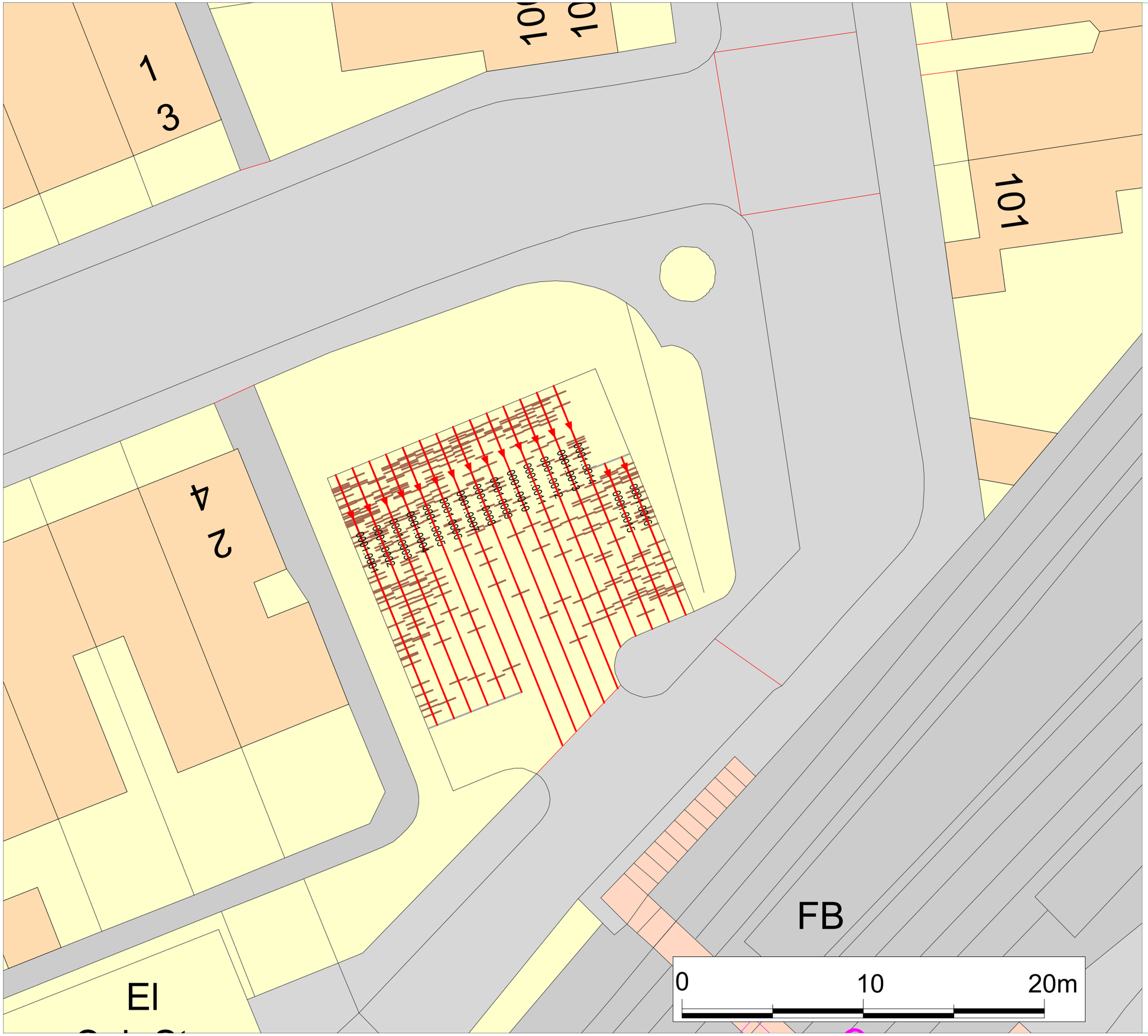
Client

Godstone Developments Ltd

Site Address

Carpark on Winchester Road, St. Margaret's, Twickenham

Drawing Title	Orientation	Drawn	Authorized
Tree Radar Plan		IL	KL
Date	**Drawing Number**	**Scale**	**Drawing Status**
03.03.2022	TRUK0206 TR	1:200@A3	For Issue



Please refer to full arboricultural report for details

0006.0001

Scan lines and direction

Scan line start and end

Detected roots with a diameter greater than 20mm

Rev :	Description :	Authorized :

Tree Radar UK Ltd
t: 01622 435929
www.treeradaruk.com

Client

Godstone Developments Ltd

Site Address

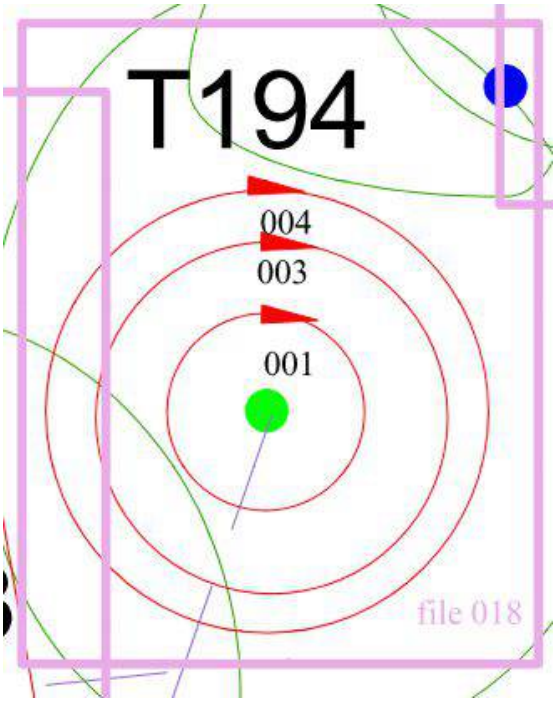
Carpark on Winchester Road, St. Margaret's, Twickenham

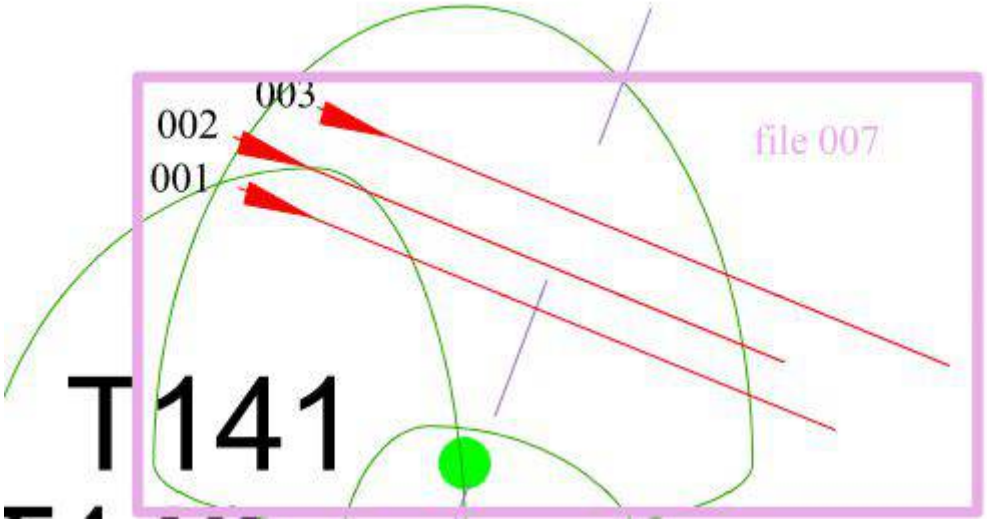
Drawing Title	Orientation	Drawn	Authorized
Tree Radar Results Plan		IL	KL
Date	**Drawing Number**	**Scale**	**Drawing Status**
03.03.2022	TRUK0206 TRR	1:200@A3	For Issue

7. HOW TO READ THE SCAN LINES

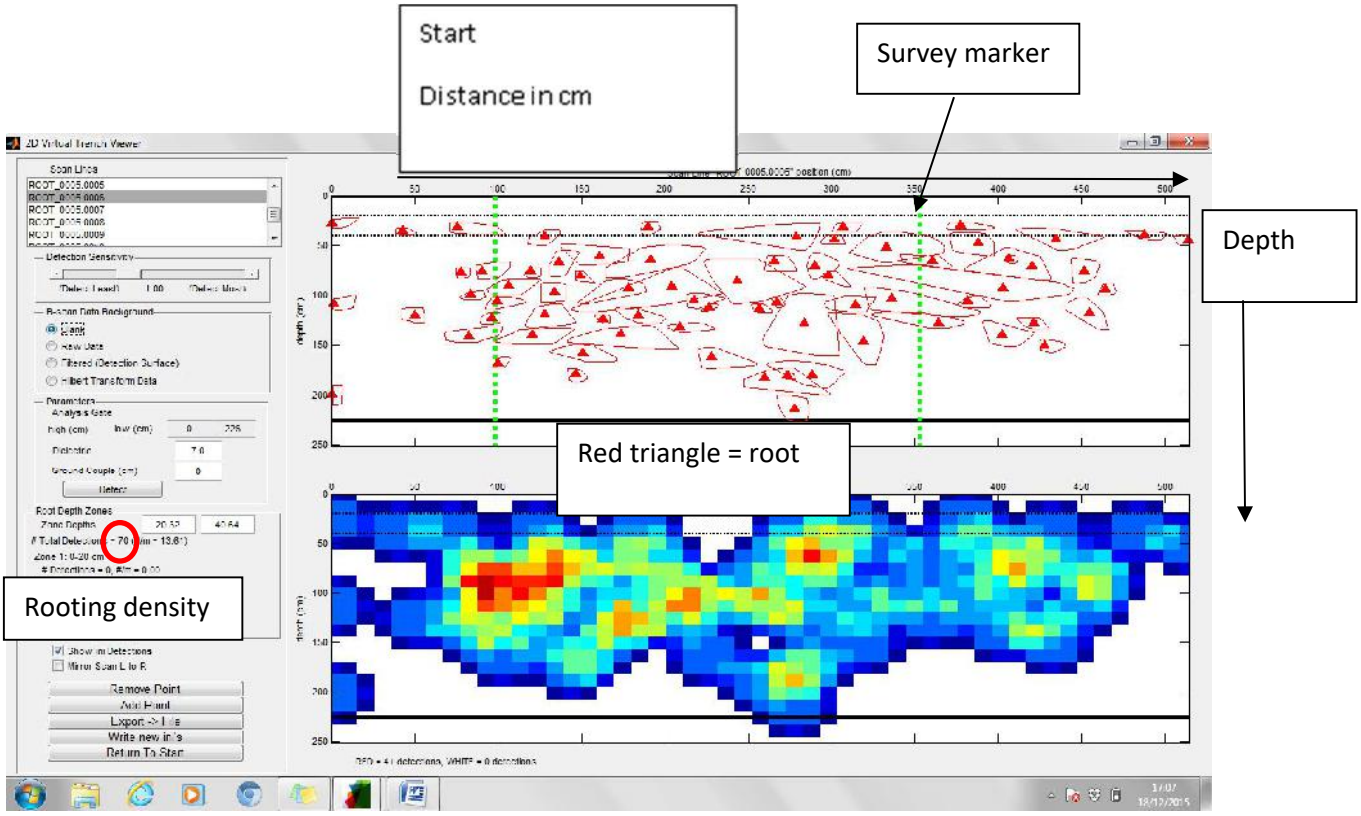
The results are shown as a top-down view (plan), and a cross section of each scan line. This is an extract of the plan, a scaled copy of which is found at appendix 1. The plan extracts in appendix 7 are not to scale. The locations of the scan lines are based on the plotting from the survey, and the length of the line on the plan by the exact length of the scan. Circular scans are clockwise, starting on the northern side of the tree and are at 1m intervals unless otherwise shown.

Scan lines are shown red, with the direction by red arrows. Each scan line has a scan number. An example from a different site is shown below.





The cross section of each scan line shows where the roots are in relation to depth and distance. The coloured splodges are root density (relative to the scan area). An example is shown below:

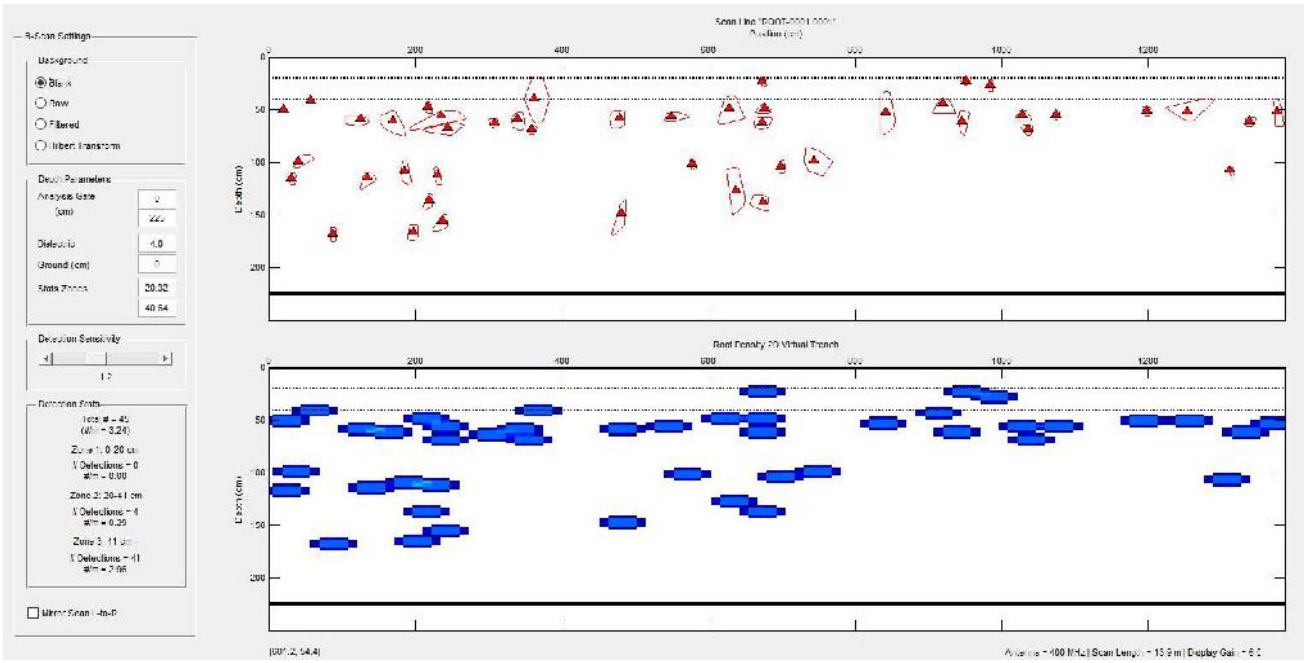


Polygons around the root detections are early attempts at root diameter, however, these are not particularly accurate currently as they can be influenced by the angle at which the scan crosses the root as well as smaller roots adjacent to the larger detection. Blue polygons are regions of very high mass detections such as very large roots or large regions of rooting activity.

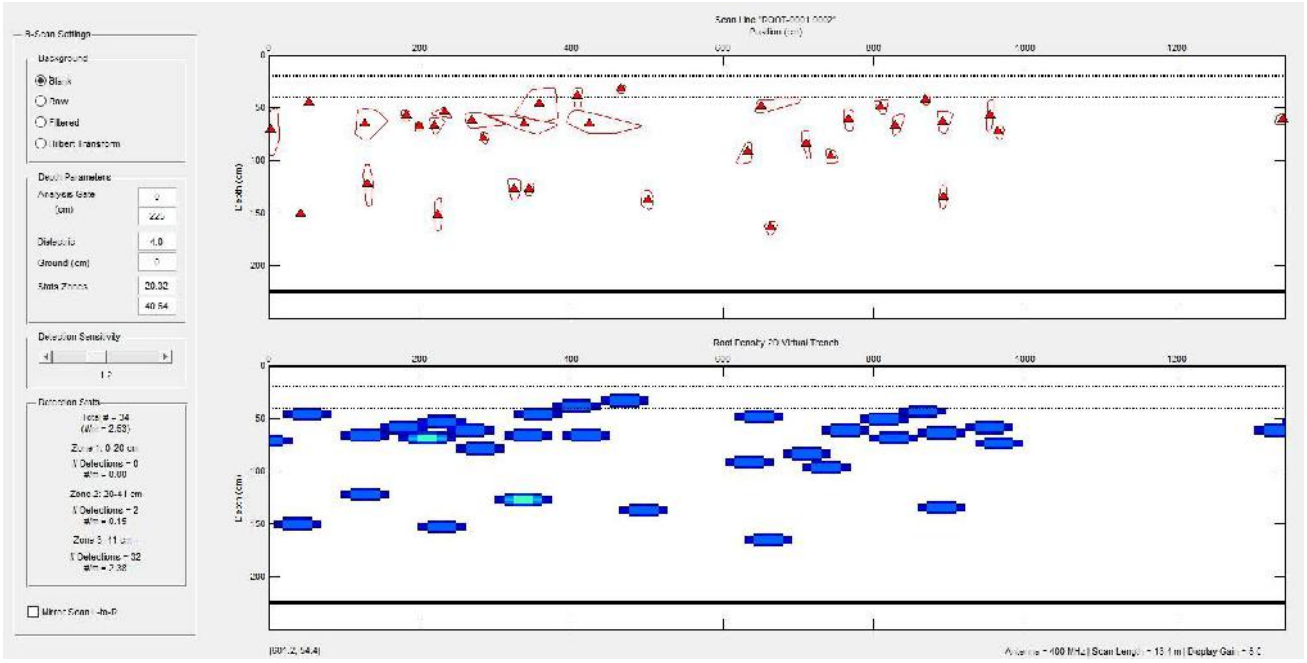
8. INDIVIDUAL SCAN LINE RESULTS

SCAN LINES 0001.0001-0016

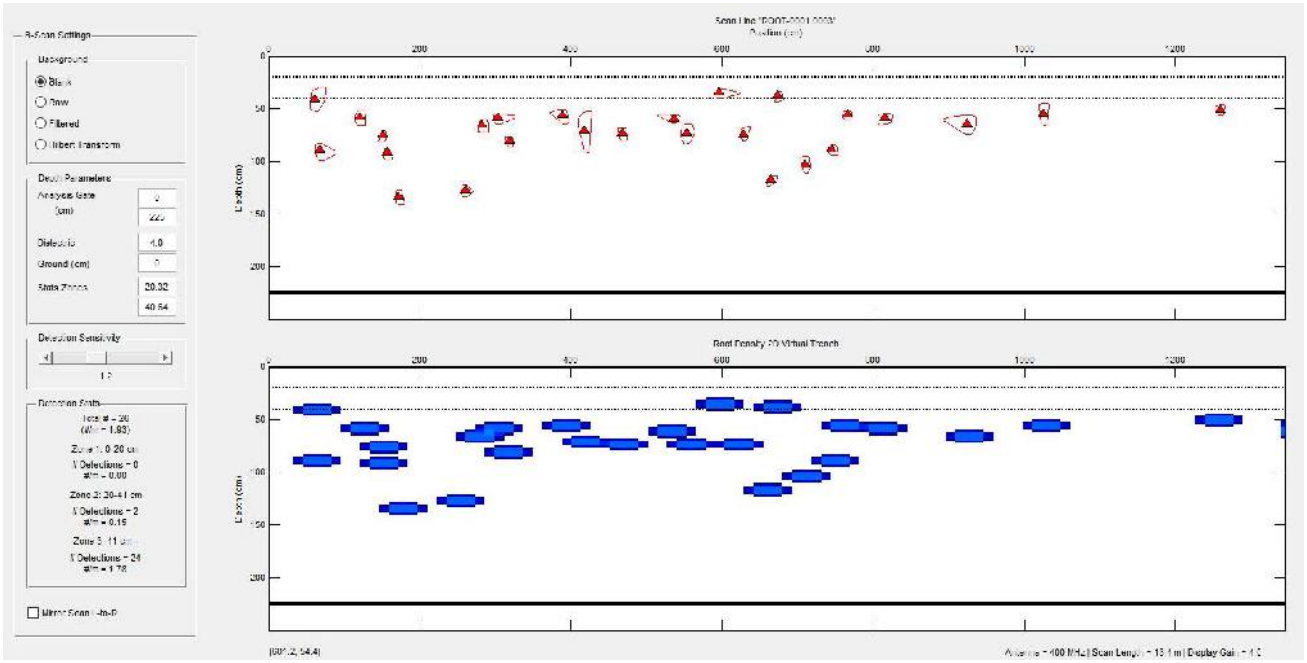
Scan line 0001.0001



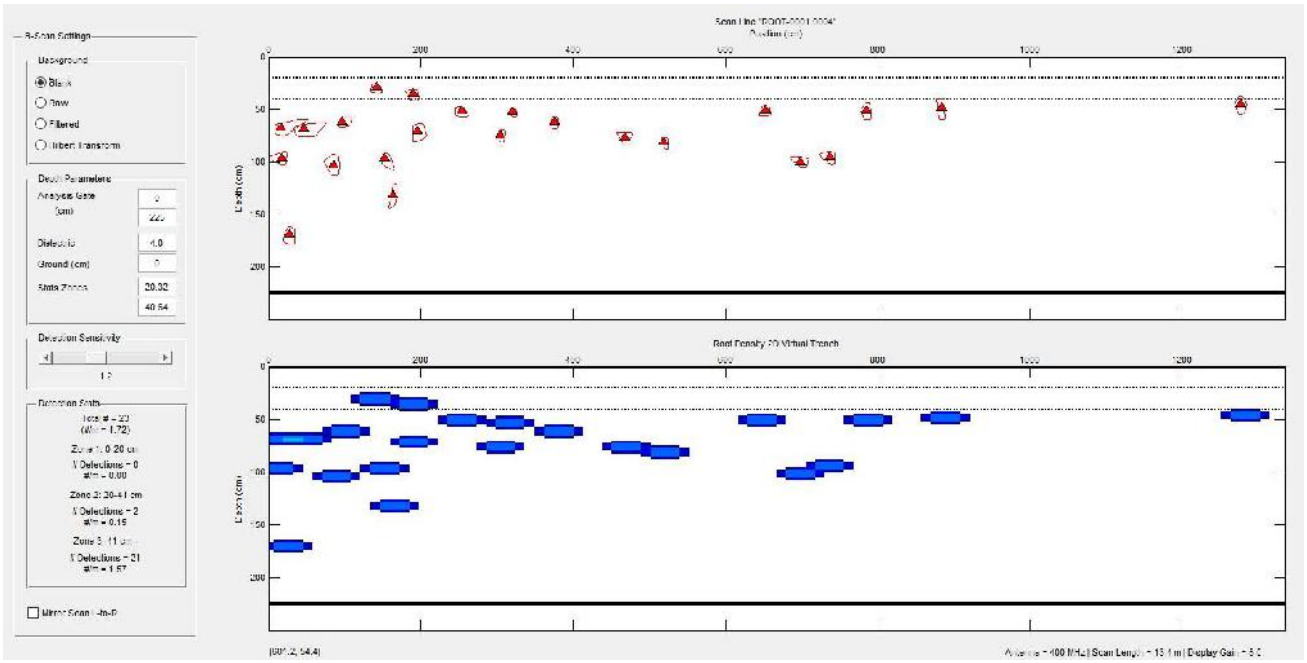
Scan line 0001.0002



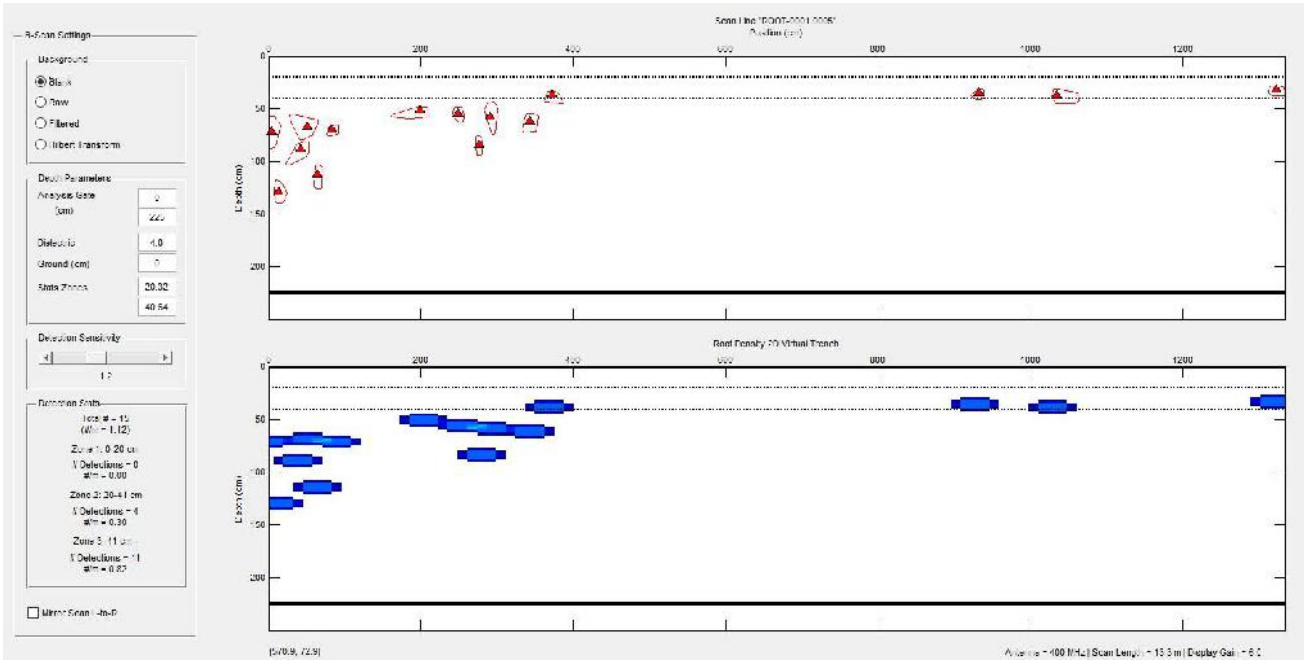
Scan line 0001.0003



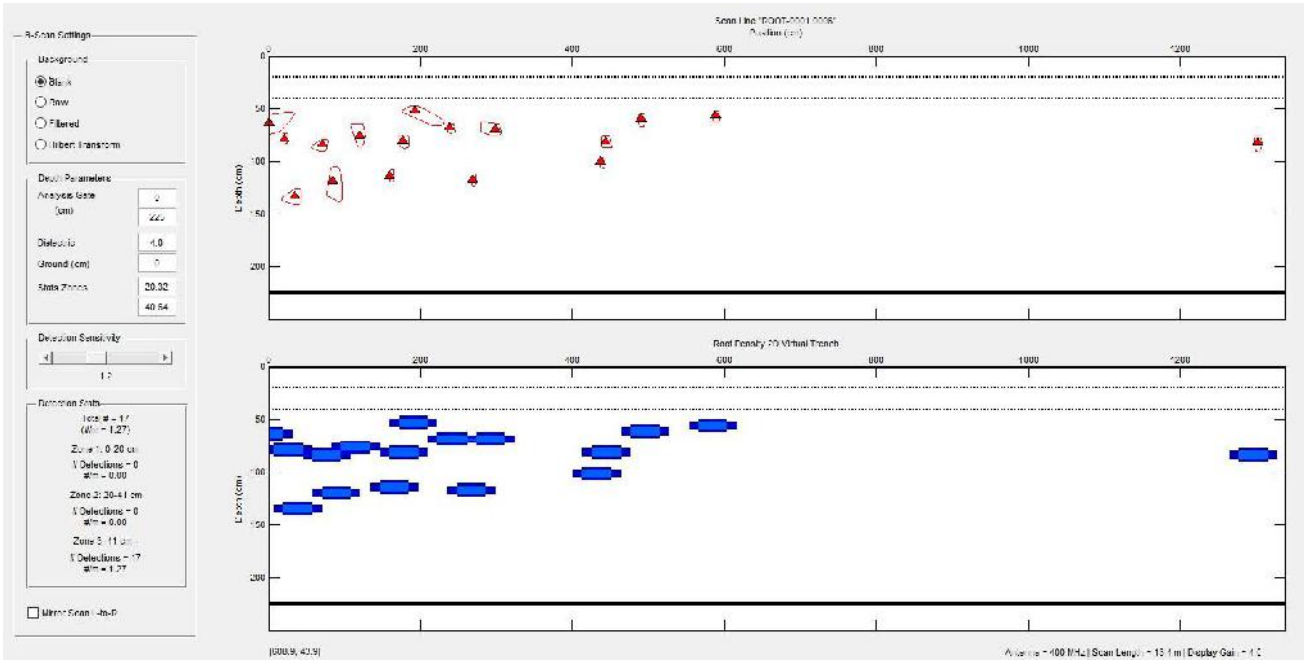
Scan line 0001.0004



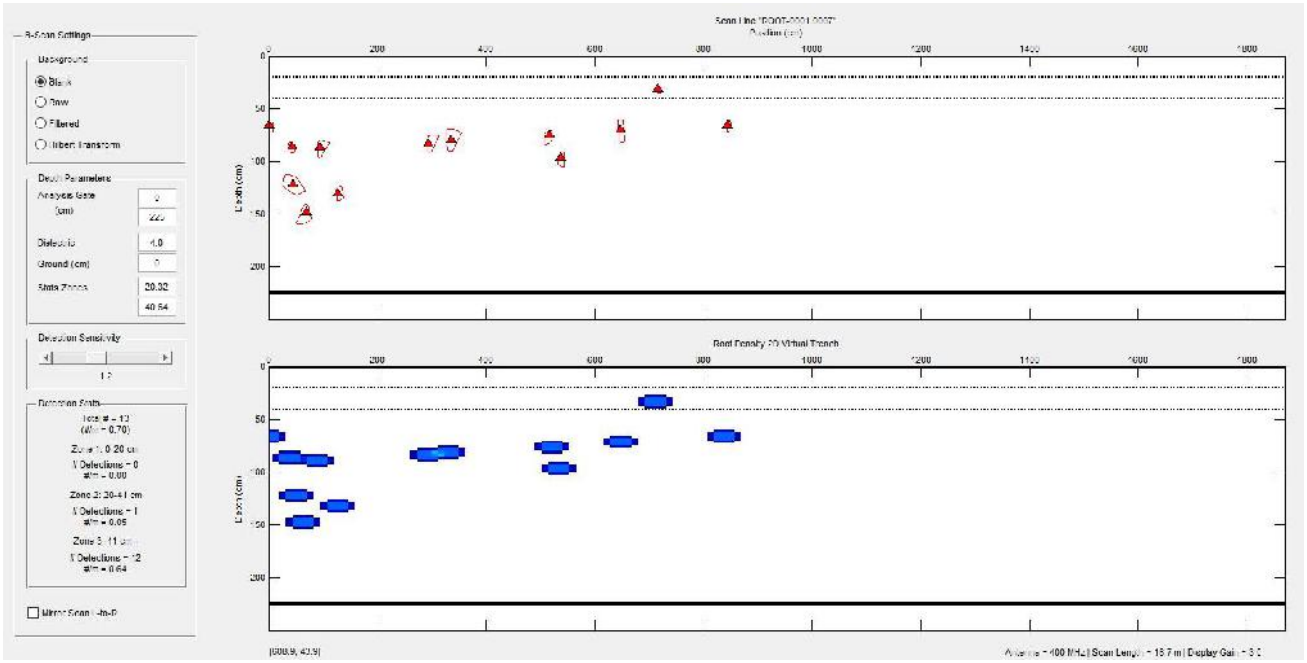
Scan line 0001.0005



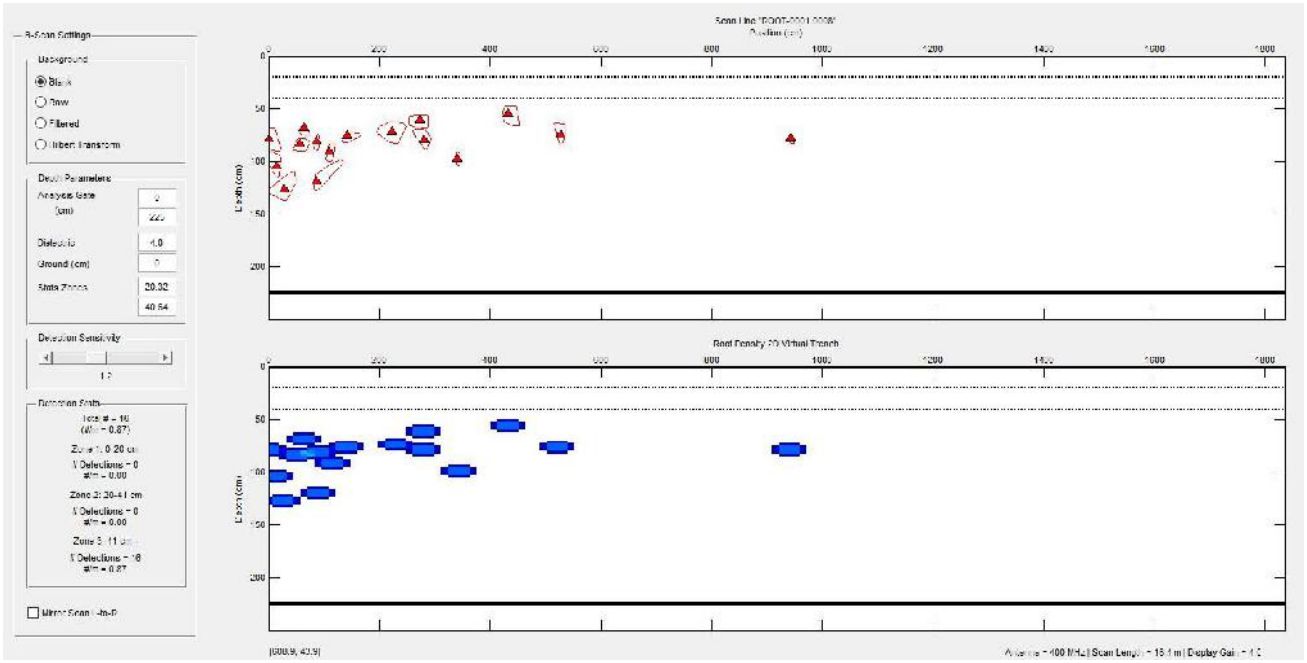
Scan line 0001.0006



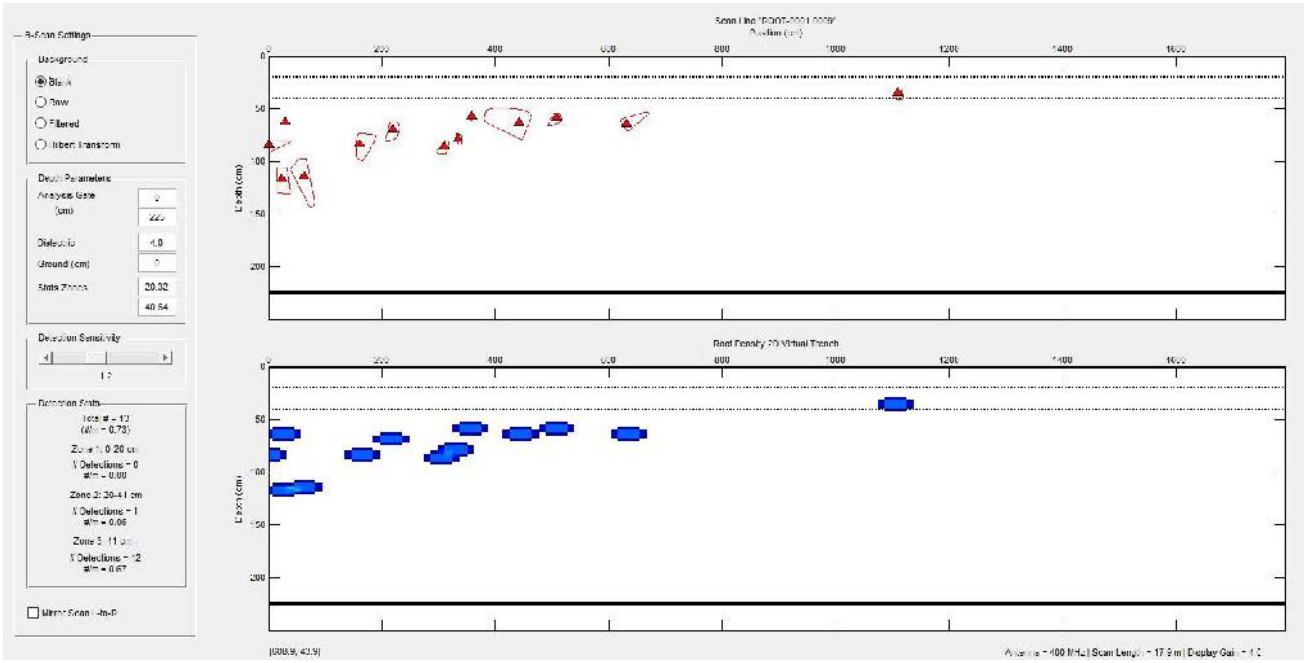
Scan line 0001.0007



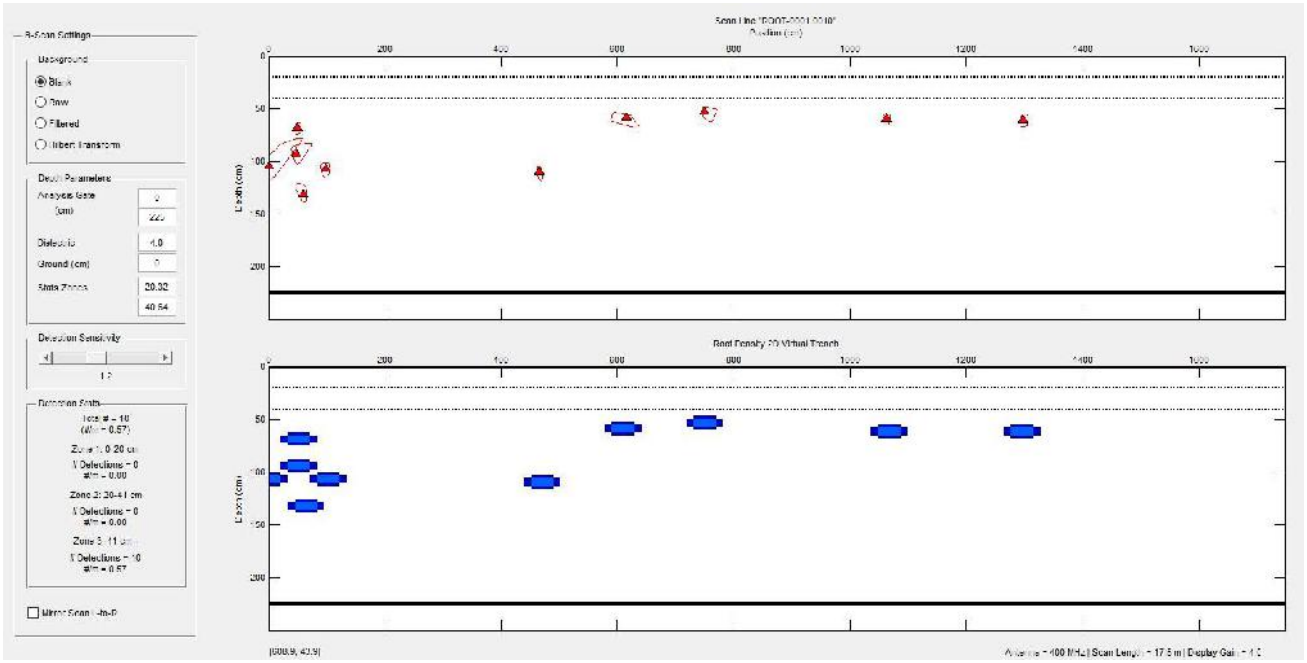
Scan line 0001.0008



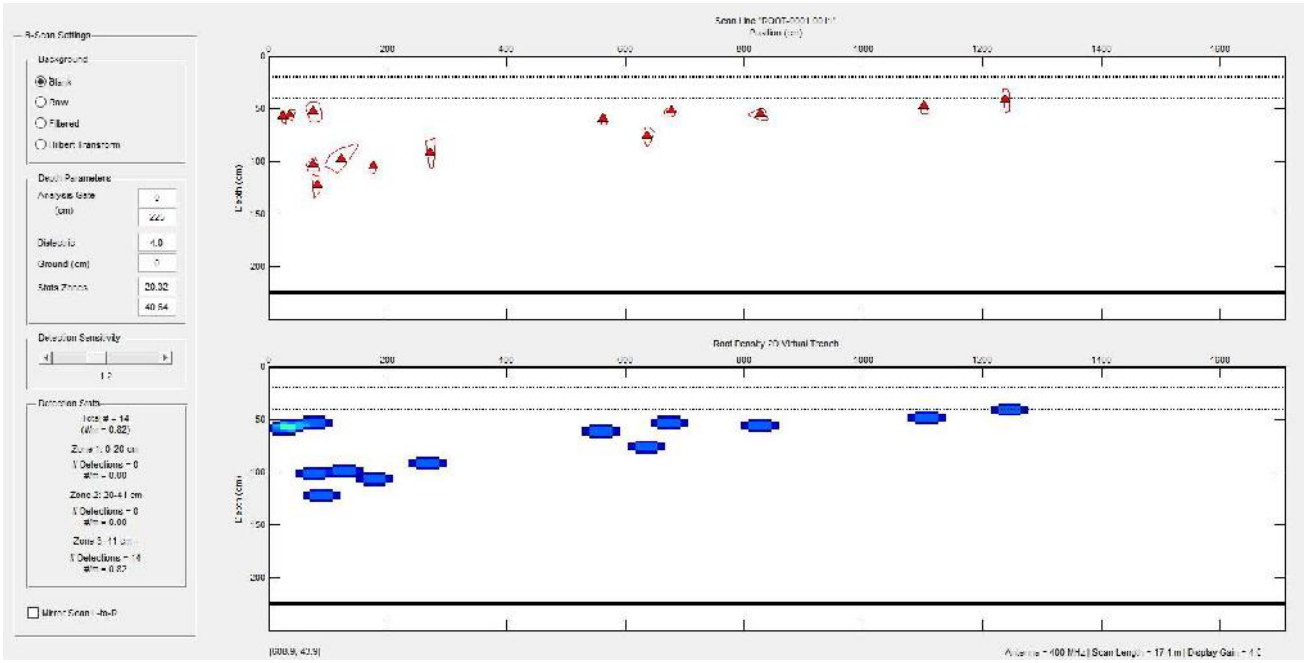
Scan line 0001.0009



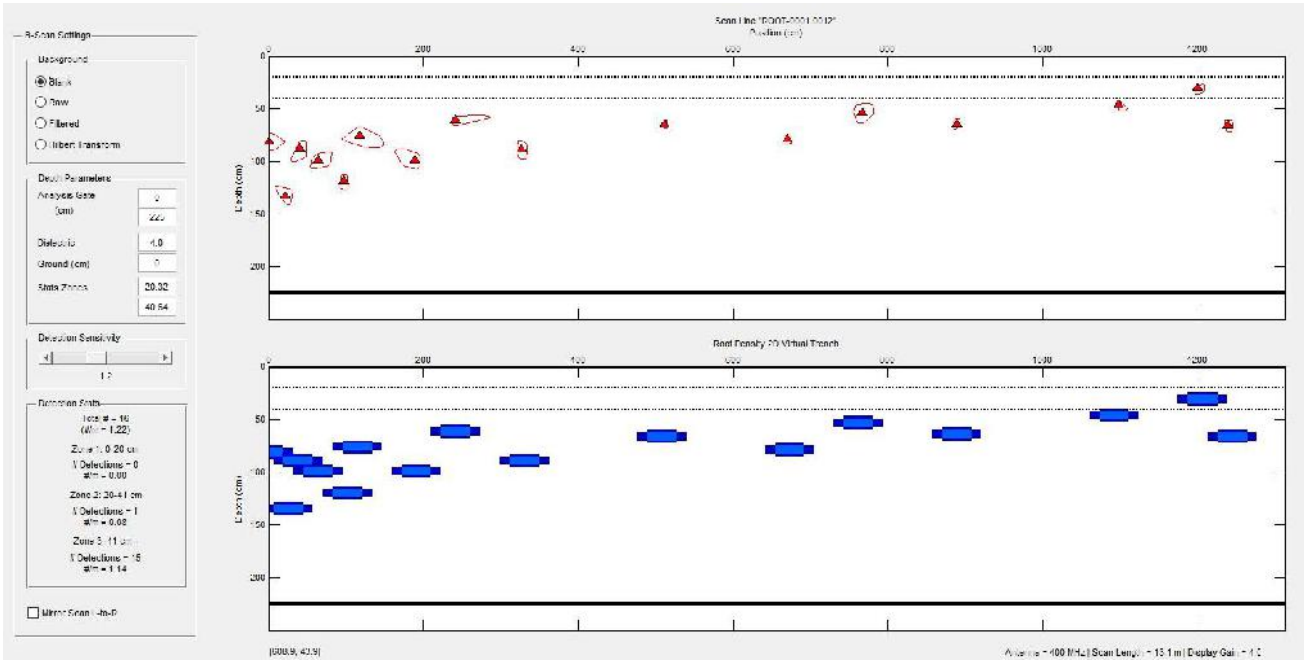
Scan line 0001.0010



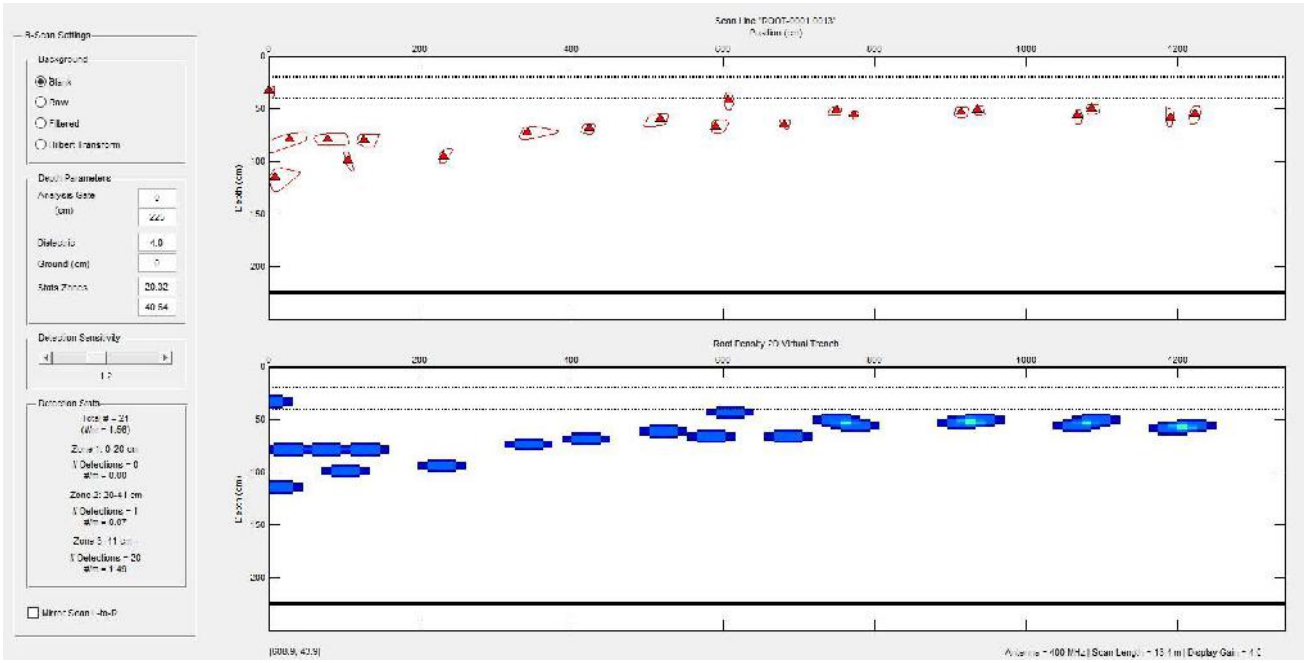
Scan line 0001.0011



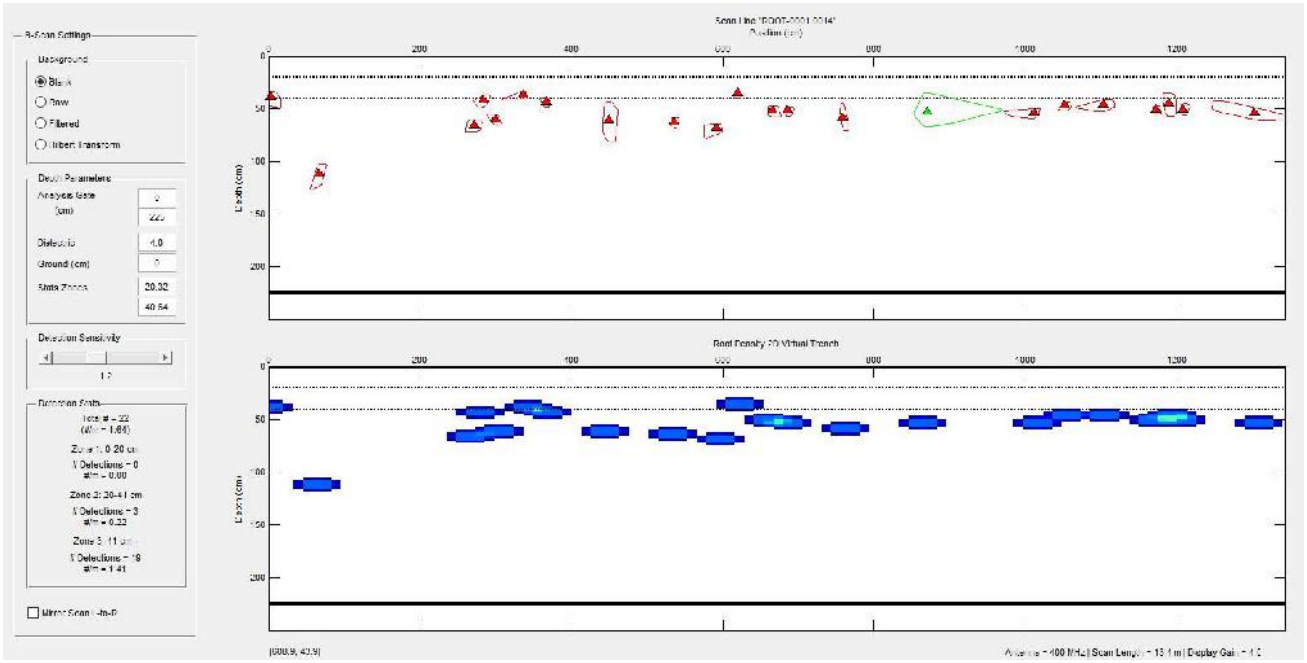
Scan line 0001.0012



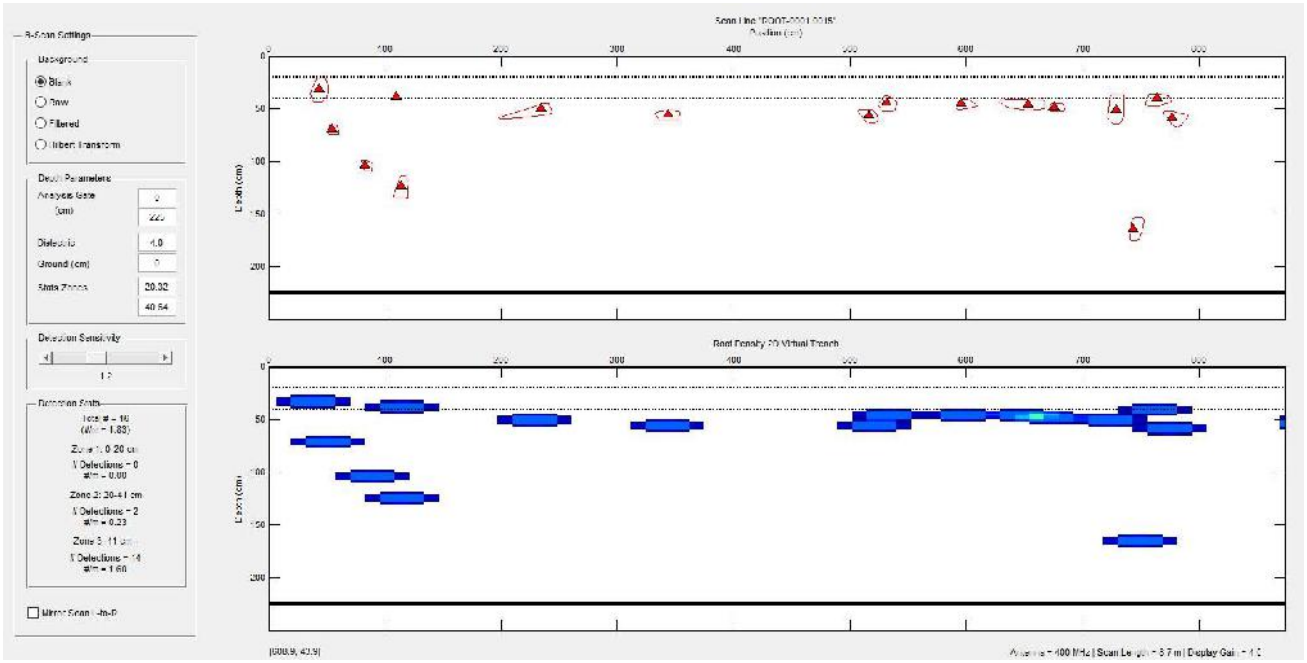
Scan line 0001.0013



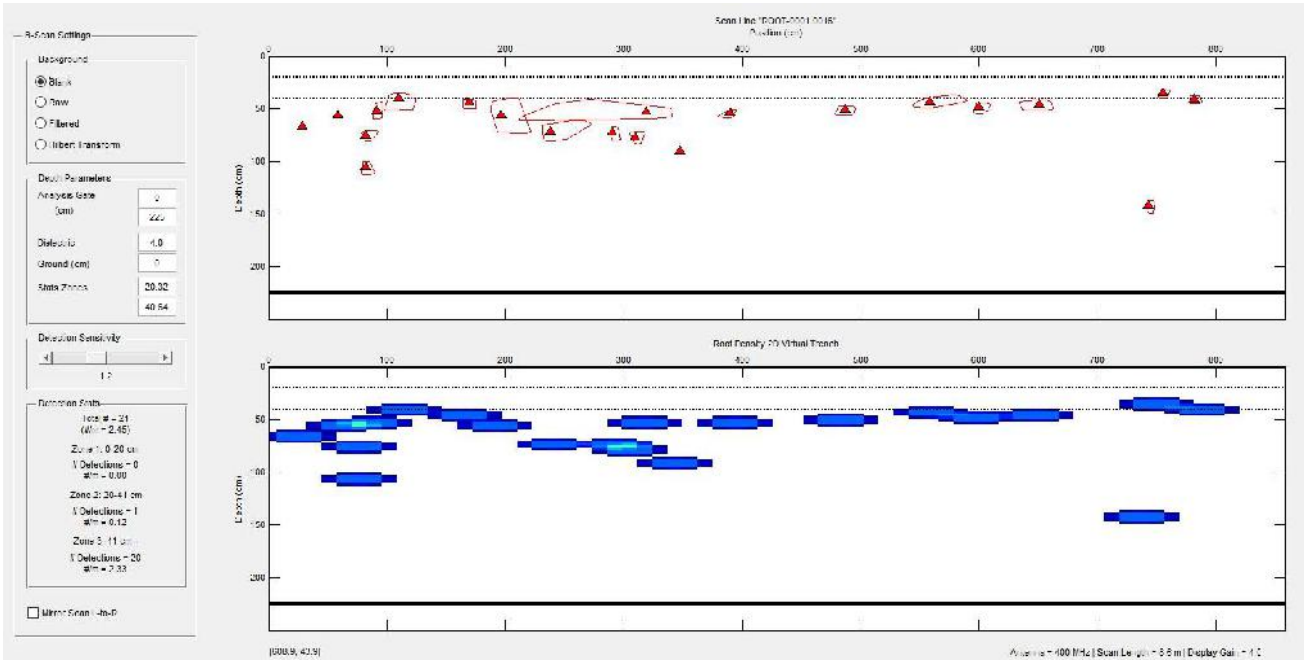
Scan line 0001.0014



Scan line 0001.0015



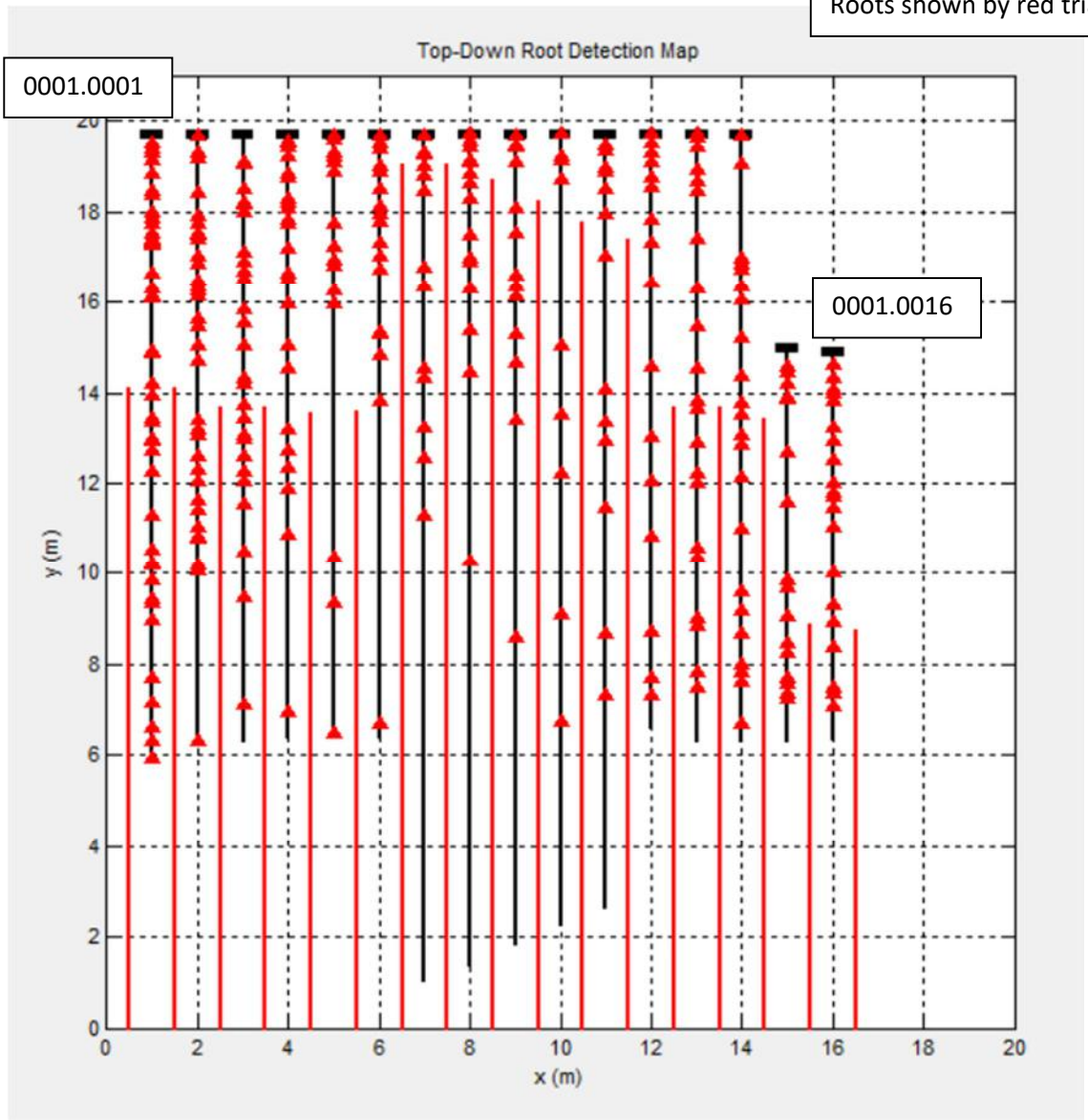
Scan line 0001.0016



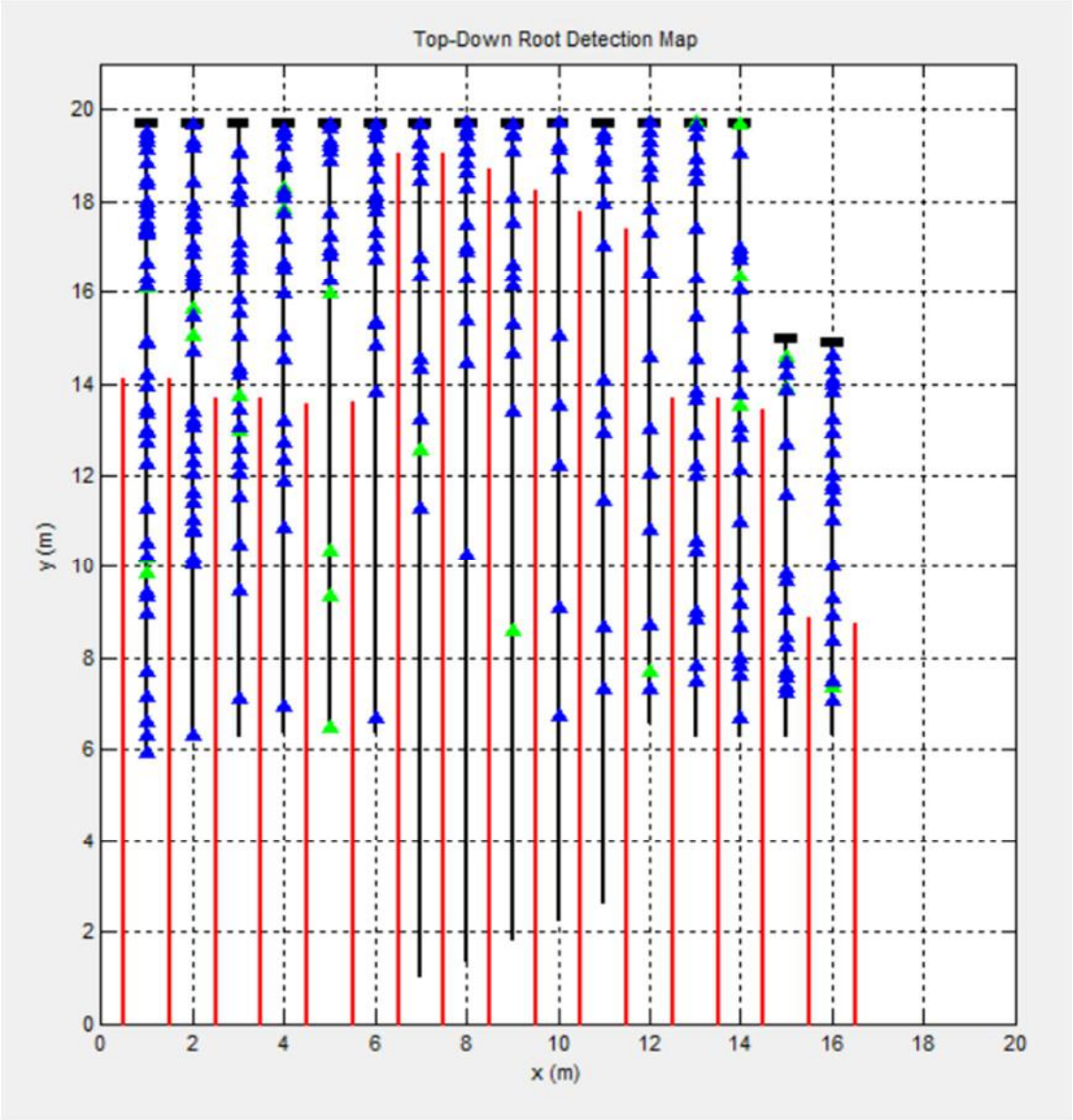
SCAN LINES 0001.0001-0016 - LOCATIONS (DO NOT SCALE)

SCAN LINES 0001.0001-0016 - ROOTS (WITH A DIAMETER GREATER THAN 20MM) AT ALL DEPTHS

Roots shown by red triangles

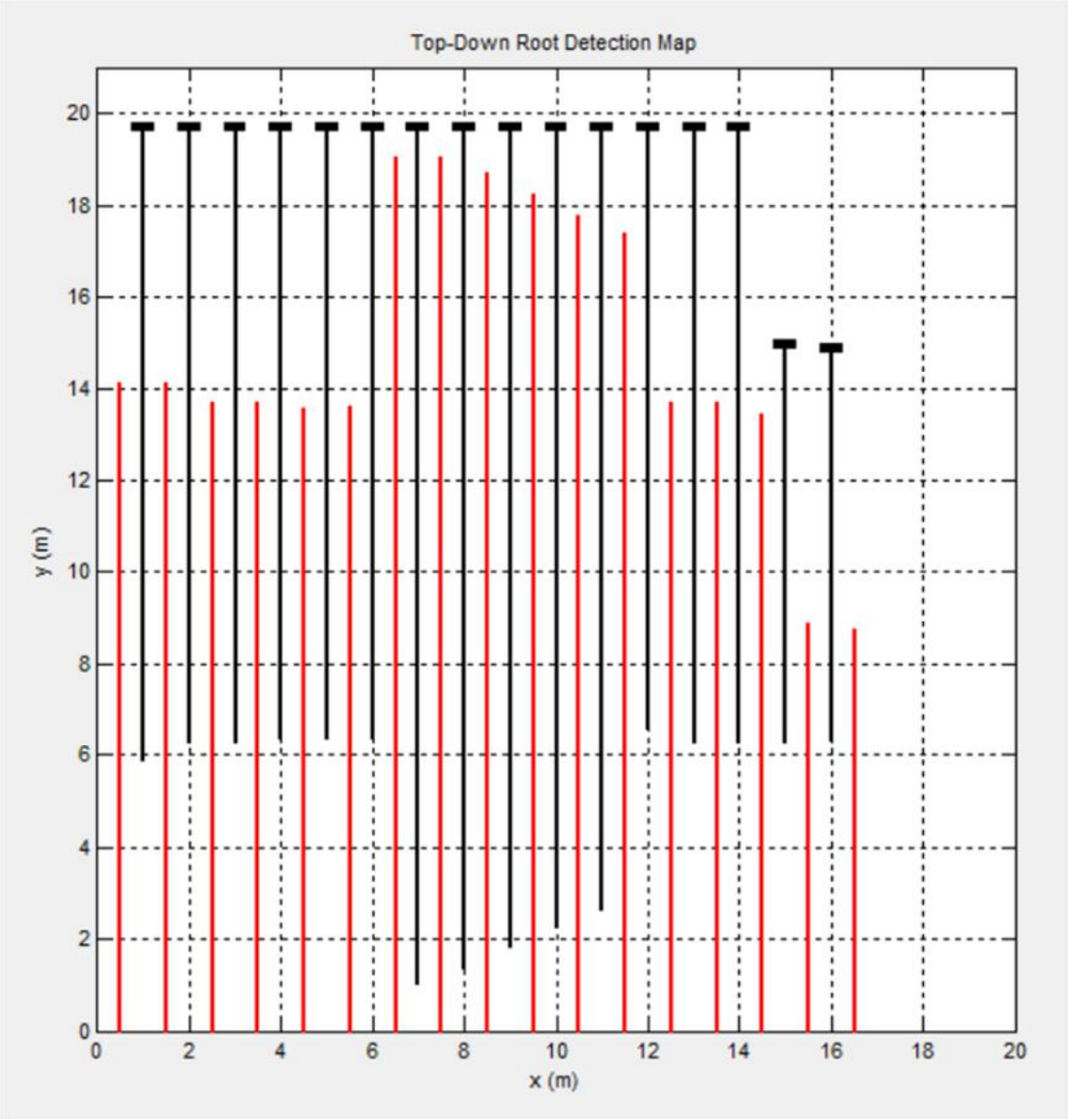


SCAN LINES 0001.0001-0016 - ROOTS (WITH A DIAMETER GREATER THAN 20MM) AT ALL DEPTHS RED = 0-20CM GREEN = 20-40CM BLUE = 40-250CM



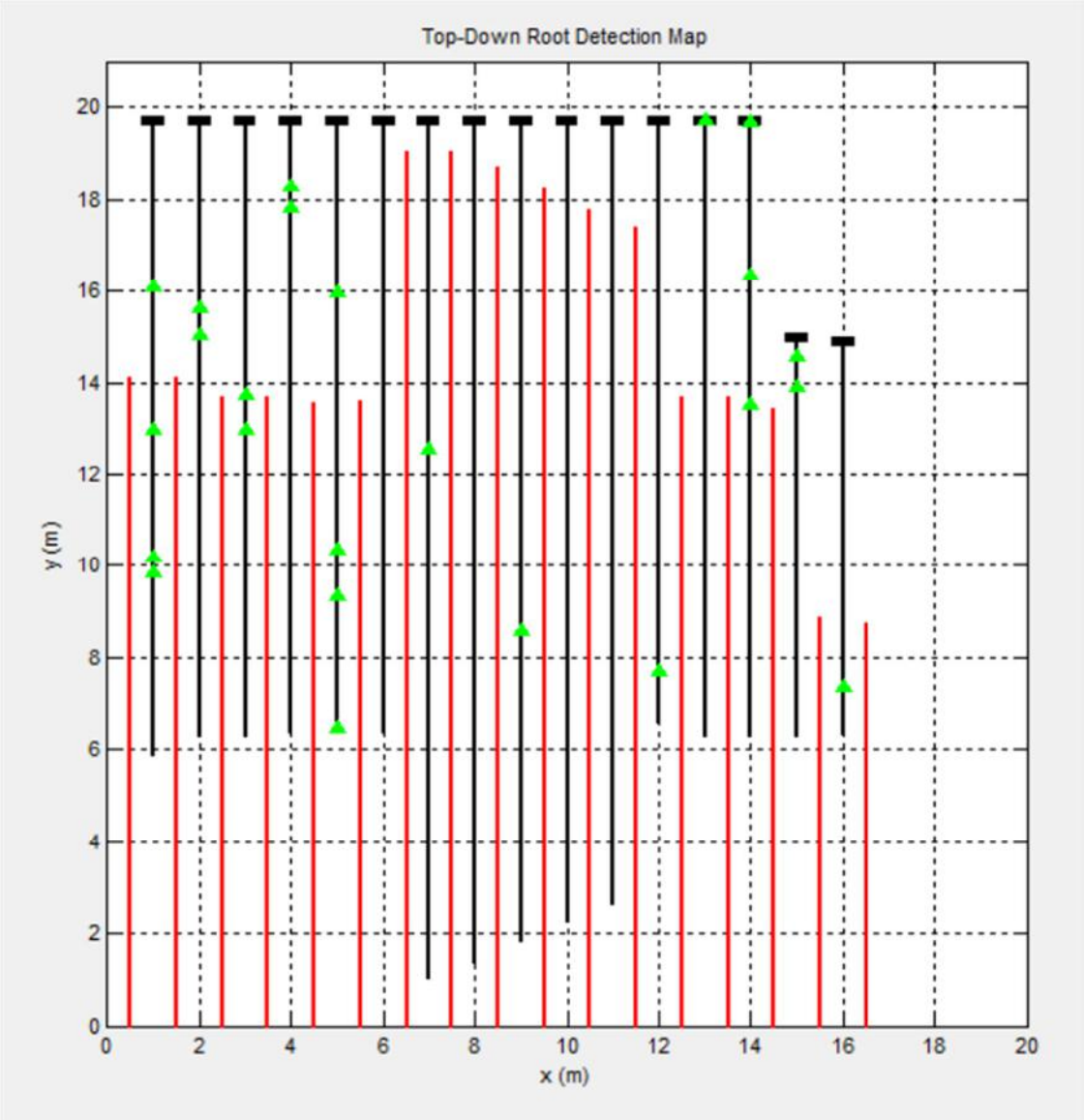
SCAN LINES 0001.0001-0016 - ROOTS (WITH A DIAMETER GREATER THAN 20MM) AT DEPTHS

RED = 0-20CM



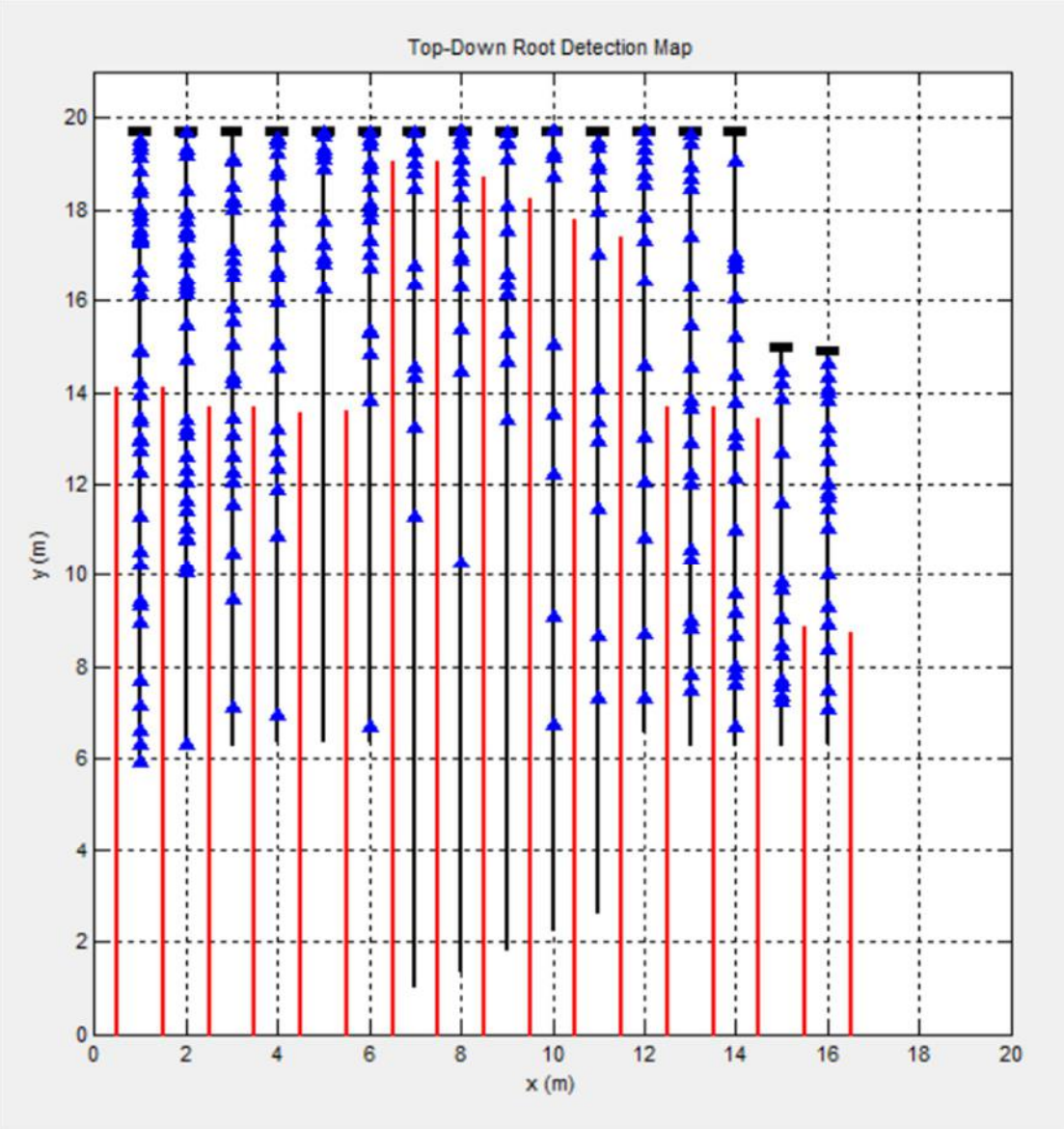
SCAN LINES 0001.0001-0016 - ROOTS (WITH A DIAMETER GREATER THAN 20MM) AT DEPTHS

GREEN = 20-40CM



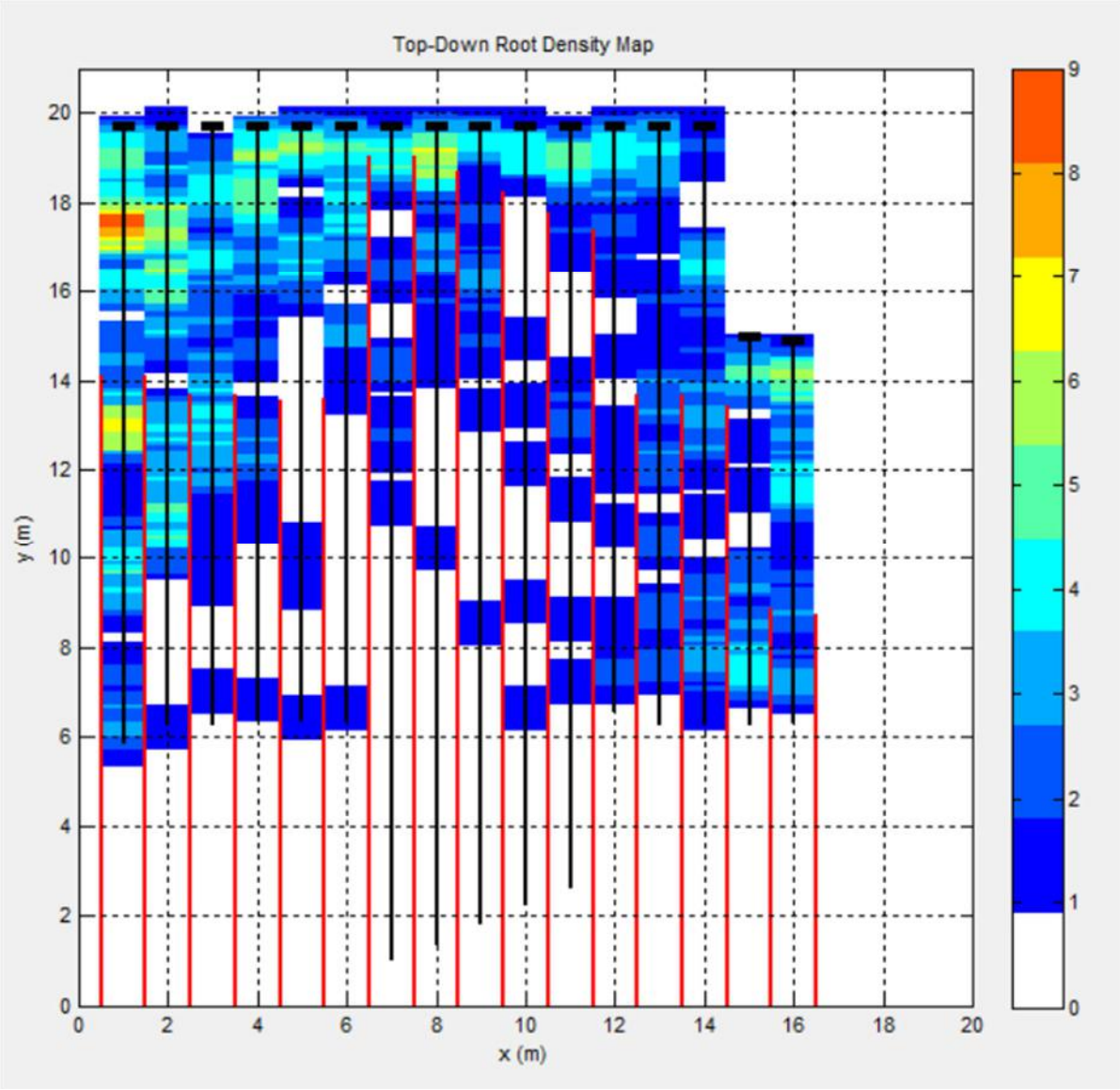
SCAN LINES 0001.0001-0016 - ROOTS (WITH A DIAMETER GREATER THAN 20MM) AT DEPTHS

BLUE = 40-250CM



SCAN LINES 0001.0001-0016 - ROOTS (WITH A DIAMETER GREATER THAN 20MM) AT ALL DEPTHS - DIAGRAMMATIC REPRESENTATION OF ROOT DENSITY.

RED = RELATIVELY HIGH, BLUE = RELATIVELY LOW



9. CAVEATS & EXCLUSIONS: -

Specific report caveats

1. The survey is concerned solely with TreeRadar.
2. Any changes in ground level, or excavations near to tree roots not discussed within this report may change the stability and condition of the trees and a further examination would be required.
3. As trees are a dynamic living organism this report is only valid for a period of 12 months, in respect to their health and condition.
4. Only the trees and areas listed in this report have been examined by TreeRadar.
5. All arboricultural issues other than tree roots in the area covered specifically within this report are outside the remit of this report and should be assessed by the project arboricultural consultant.
6. Scanning conditions were relatively straight forward, only obstructed by a parked van and a dumped pile of garden debris. In much of the site there were a large number of non-root reflectors and metal found within the results, which were filtered out of the data as far as was reasonably practical. This may slightly affect the accuracy of the results, but we are experienced at looking at data in these situations.

10. BACKGROUND and STATEMENT OF METHODOLOGY

A TreeRadar investigation was carried out by Ian Lee on 28th February 2022. The locations of the scan lines are found at appendix one, drawing reference *TRUK 0206 TR,* and the results are found in the report at section 4. The location of the scan area was identified by Jack Jewell of Tyler Grange during the initial quoting process.

The individual scan lines were measured from the tree and/or other fixed points. Photographs were taken and the lines plotted on a plan and described in survey tables. Each group or individual tree (as appropriate) has a unique file number (e.g., 0005) and each scan within that file has a unique reference number (e.g., 0002). The lines are shown on a digital plan.

The TreeRadar unit is a scanning cart with a 400MHz antenna which sends a beam every 1cm down to a depth prescribed by the operator (usually between 2 - 3m, which is the maximum depth). The reflection is recorded in a field computer and then analysed by the latest software, TBA. Water and metal reflect, therefore the machine records live roots which contain moisture, and cannot detect dead, dried out roots. For each scan line a 'virtual trench' is produced which shows all roots with a diameter greater than 20mm. The machine cannot determine root diameter, other than it being greater than 20mm, due to the lack of correlation between the amounts of live root tissue in a root compared to the thickness of a roots. For example, a large root may only have a live central core.

For each group of roots, the scans are organized into a 'top down' root morphology plan which is to scale.

Documents received

- WP-0780-A-0100-1

11. MY EXPERIENCE & QUALIFICATIONS: -

PROFILE: Ian Lee

MICFor MArborA BSC (Hons) Tech Cert (Arbor A)

Ian has fifteen years' experience as an arboricultural consultant in the private and public sector. Ian is a professional member of the Arboricultural Association and has a degree in Forestry. Ian has considerable expertise in problem solving in relation to trees and the planning process and complex construction issues.

Ian has a deep understanding and knowledge on the operation and interpretation of TreeRadar © and has carried out two research and development visits with Sharon Hosegood Associates in 2016. This research is to be continued with international colleagues when travel restrictions allow.

Ian has managed a team delivering volume tree surveys and has produced woodland management plans.

Specialities

- Trees in relation to development, including appeals and planning hearings
- Tree root investigations, including TreeRadar©
- Tree hazard evaluation
- Tree preservation orders
- Manager of volume tree surveys

Professional bodies:

- Chartered member of the Institute of Chartered Foresters (ICF)
- Professional member of the Arboricultural Association

Qualifications:

- Arboricultural Associations Technicians Certificate
- BSc (Hons) Forestry and Forest Products
- Lantra Visual Tree Assessment

Tree Radar UK Ltd

Root Investigation by TreeRadar

SITE
Carpark on Winchester Road
St Margaret's
Twickenham

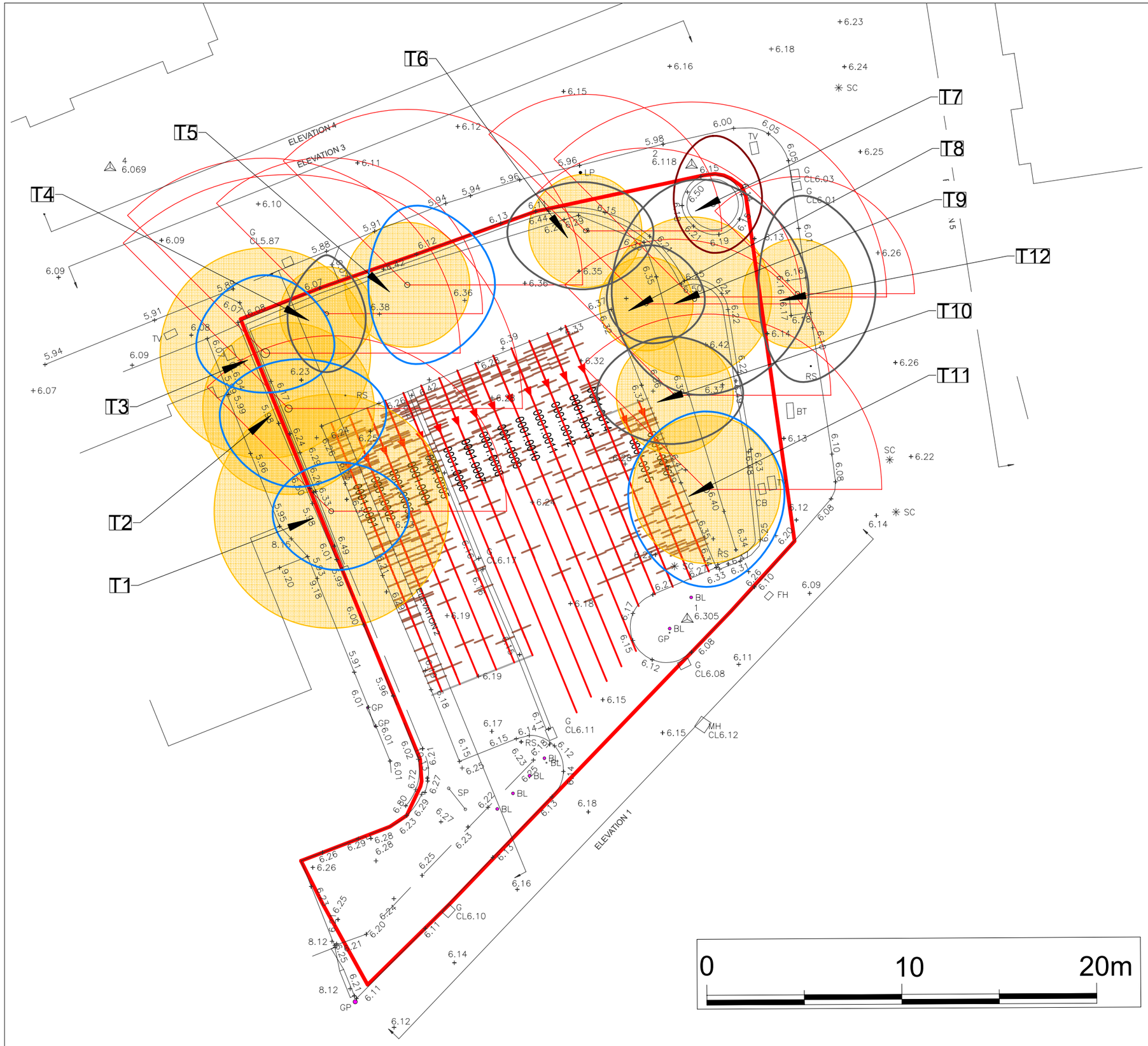
CLIENT
Godstone Developments Limited

Ian Lee
MICFor MArborA BSC (Hons) Tech Cert (Arbor A)
Chartered Arboricultural Consultant

DATE: 09.03.2022
OUR REF: TRUK 0206

CONTACT DETAILS: 01622 435929
Ian@treeradaruk.com

Appendix 7: Tree Radar Results Plan



Please refer to full arboricultural report for details

0006.0001

Scan lines and direction

Scan line start and end

Detected roots with a diameter greater than 20mm

Tree Radar UK Ltd
t: 01622 435929
www.treeradaruk.com

Rev :	Description :	Authorized :
A	Revised base plan	IL

Client

Godstone Developments Ltd

Site Address

Carpark on Winchester Road, St. Margaret's, Twickenham

Drawing Title	Orientation	Drawn	Authorized
Tree Radar Results Plan		IL	KL
Date	**Drawing Number**	**Scale**	**Drawing Status**
21.03.2022	TRUK0206 TRR	1:200@A3	For Issue

Appendix 8: Capital Asset Valuation of Amenity Trees – Results Table

Project: St Margaret's Business Park

Name of Surveyor: Jamie Pratt BSc (Hons MArborA)

Date: 16/03/2022

CAVAT

CALCULATE VALUE OF TREE STOCK

CTI Factor (Please select): 125

Unit Value Factor 15.88

Cumulative Total: **£ 82,580**

Created by Alexandra Sleet and Phillip Handley

Tree Information			Step 1: Basic Value				Step 2: CTI Value		Step 3: Locational Value		Step 4: Structural Value		Step 5: Functional Value		Step 6: Amenity Value		Step 5: Final Value	FINAL VALUE
Tree No.	Species ID	Location (I.e near tree no. 1)	Stem Diameter (1)	Stem Diameter (2)	Stem Diameter (3)	Basic Value	CTI Factor (Please select)	CTI Value	Accessibility Factor (Please select)	Location Value	Structural Factor (Please select)	Structural Value	Functional Factor (Please select)	Functional Value	Amenity Factor (Please select)	Amenity Value	Life Expect. Factor (Please select)	
1	lime	Boundary	50			£ 31,180	125	£ 38,975	100	£ 38,975	30	£ 11,693	100	£ 11,693	0	£11,693	40 - <80	£11,108
2	lime	Boundary	37			£ 17,074	125	£ 21,343	100	£ 21,343	40	£ 8,537	100	£ 8,537	0	£8,537	40 - <80	£8,110
3	lime	Boundary	46			£ 26,391	125	£ 32,989	100	£ 32,989	30	£ 9,897	100	£ 9,897	0	£9,897	40 - <80	£9,402
4	hornbeam	Boundary	23			£ 6,598	125	£ 8,247	100	£ 8,247	90	£ 7,422	100	£ 7,422	0	£7,422	40 - <80	£7,051
5	hornbeam	Boundary	27			£ 9,092	125	£ 11,365	100	£ 11,365	90	£ 10,229	100	£ 10,229	0	£10,229	40 - <80	£9,717
6	hornbeam	Boundary	20	10	10	£ 7,483	125	£ 9,354	100	£ 9,354	80	£ 7,483	100	£ 7,483	0	£7,483	40 - <80	£7,109
7	cherry	Pavement - Not to be removed									60				0		<5	#VALUE!
8	hornbeam	Boundary	22			£ 6,037	125	£ 7,546	100	£ 7,546	80	£ 6,037	100	£ 6,037	0	£6,037	5 - <10	£1,811
9	ash	Boundary	20	19	20	£ 14,480	125	£ 18,100	100	£ 18,100	70	£ 12,670	90	£ 11,403	0	£11,403	20 - <40	£9,122
10	hornbeam	Boundary	25			£ 7,795	125	£ 9,744	100	£ 9,744	90	£ 8,769	100	£ 8,769	0	£8,769	20 - <40	£7,016
11	hornbeam	Boundary	32			£ 12,771	125	£ 15,964	100	£ 15,964	80	£ 12,771	100	£ 12,771	0	£12,771	40 - <80	£12,133
12	cherry	Pavement - Not to be removed					125		100		50		80		0		10 - <20	#VALUE!

Appendix 9: Tree Survey Schedule

Tree Number	Common Species Name	Height (m)	Trunk Diameter (mm)	Crown Spread (m)				Height of Crown Clearance (m)	Age Class	Physiological Condition	Structural Condition	BS5837 Category	Comments/Preliminary Management Recommendations	RPA Radius (m)	Root Protection Area (m2)
				N	E	S	W								
T1	Lime	9m	500	3.25	4.00	3.00	3.00	1.50	Mature	Fair - Good	Fair - Good	B.2	Lapsed pollard, heavy ivy cladding. Hard standing and retaining structure (0.5m drop) to west of stem, car park to east.. Conflicts with building to west - suggest crown reduction. Ivy in crown	6.0	113
T2	Lime	12m	370	2.50	5.00	4.25	3.50	2.00	Mature	Fair - Good	Fair	B.2	Formerly pollarded with compacted crown owing to stem density at the car park edge.	4.4	62
T3	Lime	10m	460	4.00	3.50	2.00	3..75	1.00	Mature	Fair - Good	Fair - Good	B.2	Roadside planting. Hardstanding to immediate north west of stem. Occluded wounds, formerly pollarded. Canopy conflicts owing to stem density along the car park edge. Canopy in contact with building	5.5	96
T4	Hornbeam	8m	230	3.00	2.00	3.25	2.00	2.00	Semi-mature	Fair - Good	Fair	C.2	Car park edge shrub bed planting. Compacted crown with minor ivy cladding, otherwise typical form with no significant defects, suppressed by adjacent trees.	2.8	24
T5	Hornbeam	9m	270	4.00	4.50	4.75	2.00	1.80	Early Mature	Fair - Good	Good	B.2	Rounded clear stem form. Shrubby understorey with canopy conflicts to west (T4) otherwise good vigour and well-balanced with no significant defects.	3.2	33
T6	Hornbeam	7m	200, 100, 100	2.50	3.75	3.50	4.00	1.80	Semi-mature	Fair - Good	Fair	C.2	Car park edge shrub bed planting. Compacted crown with minor ivy cladding, otherwise typical form with no significant defects, included bark union at 1m.	3.6	41
T7	Cherry	5m	250	3.50	2.50	2.50	2.00	2.00	Mature	Fair	Poor	U	Off-site roadside cherry within dedicated brick planting bed. Past pruning wounds across lower canopy which has been lifted, large wound on trunk with exposed heartwood and decay, canopy previously topped. Limited future potential.	3.0	28
T8	Hornbeam	8m	220	3.00	3.00	2.00	3.75	3.00	Early Mature	Fair	Poor - Fair	C.2	Prominent stem wound to west face of stem with heartwood exposed. Dieback and hanging deadwood, historic fire damage.	2.6	22

Tree Number	Common Species Name	Height (m)	Trunk Diameter (mm)	Crown Spread (m)				Height of Crown Clearance (m)	Age Class	Physiological Condition	Structural Condition	BS5837 Category	Comments/Preliminary Management Recommendations	RPA Radius (m)	Root Protection Area (m2)
				N	E	S	W								
T9	Ash	10m	200, 190, 200	6.00	6.00	5.00	4.00	3.00	Early Mature	Fair - Good	Fair	C.2	Multi-stemmed north leaning Ash with 3 principle leaders. Contained to north by brick planting bed structure. Dominant over adjacent cherry to north east, failed branch union with branch hung-up in canopy. Remove failed branch.	4.1	53
T10	Hornbeam	8m	310	3.00	3.50	2.50	4.75	1.50	Early Mature	Fair	Poor - Fair	C.2	Minor ivy cladding. Canopy biased to west. Occluded wounds across lower crown with heartwood exposed, stubs and dieback, historic fire damage.	3.7	43
T11	Hornbeam	9m	360	4.00	4.00	5.00	4.25	1.80	Early Mature	Fair - Good	Fair	B.2	Crown lifted over car park bays. Dense and rounded canopy, girdling root, included union with competing twin leader.	4.3	59
T12	Cherry	6m	230	5.00	4.00	4.50	2.00	2.00	Early Mature	Fair	Fair	C.2	Street tree; excessively crown lifted; resin bleeds on lower trunk; suppressed as overtopped by adjacent tree.	2.8	24

Plans:

13340/P01d: Tree Constraints Plan

13340/P08a: Tree Works Plan

13340/P09a: Preliminary Tree Protection Plan

Site Boundary

Category B - Trees of Moderate Quality and Value

Category C - Trees of Low Quality and Value

Category U - Trees in Poor Condition

Root Protection Areas (RPAs)

Adjusted RPAs

Tree Shading Constraints

Rev	Description	Date
D	Adjusted RPAs	10.08.2022
C	Update Site Survey information	16.03.2022
B	Update Site Boundary	02.09.2020
A	Update Site Boundary	27.08.2020

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Project title

St Margaret's Business Centre

Drawing title

Tree Constraints Plan

PLAN TO BE PRINTED IN COLOUR

Scale	1:200 @ A3	Drawn	JP
Date	10.08.2022	Checked	JJ

Drawing number

13340_P01

Revision

D

GODSTONE ROAD

WINCHESTER ROAD

1
3

101

2
4

LP

T1
T2
T3
T4
T5
T6
T7
T8
T9
T10
T11
T12

CL 6.04

BT

CB

FH

0 10m

North

Site Boundary

Retained trees - existing canopy spread

Extent of tree pruning

Trees to be removed (T7, T8, T10, T11)

Rev	Description	Date
A	Updated Site Layout	02.11.2022

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Project title
St Margaret's Business Centre

Drawing title
Tree Works Plan

PLAN TO BE PRINTED IN COLOUR

Scale	1:200 @ A3	Drawn	JP
Date	02.11.2022	Checked	-

Drawing number
13340_P08

Revision
A

Site Boundary
Retained trees - post pruning
Root Protection Areas (RPAs)
Area of mitigative construction works within RPAs
Tree protection barrier locations
Scaffolding / working room zone with ground protection

Rev	Description	Date
A	Updated Site Layout	02.11.2022

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Project title
St Margarets Business Centre

Drawing title
Preliminary Tree Protection Plan

PLAN TO BE PRINTED IN COLOUR

Scale 1:200 @ A3
Date 02.11.2022
Drawn JP
Checked -

Drawing number 13340_P09
Revision A

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