

Havant Thicket Reservoir Pipeline Project

Volume 4 – Appendices

Appendix 9 Biodiversity

Appendix A9.18 **Revised** Pipeline Arboricultural Impact Assessment (Post submission update to record minor scheme changes)

Portsmouth Water Ltd.

February 2025

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Notice

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This document has 90 pages including the cover.

Document history

PW Revision	Status	Purpose description	Originated	Checked	Reviewed	Authorised	Date
C02	A1	Dual pipeline updates	TD	AA	JF	JF	19/02/25
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Client signoff

Client	Portsmouth Water Ltd.
Project	Havant Thicket Reservoir Pipeline Project
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1. Introduction

Terms of reference

- 1.1. AtkinsRéalis (formally known as Atkins Limited (Atkins)) has been commissioned to undertake a tree survey in accordance with the British Standard BS 5837:2012 '*Trees in Relation to Design, Demolition and Construction – Recommendations*' in support of a revision to the original Havant Thicket Reservoir Environmental Statement (ES) which accompanied the Havant Thicket Reservoir hybrid planning application approved by Havant Borough Council (ref. APP/20/00990) and East Hampshire District Council (ref. 51680/001) on 15th October 2021, and an outline planning application for the associated pipeline, between the reservoir and Bedhampton springs and pumping station, approved by Havant Borough Council on 15th October 2021 (ref. APP/20/00991).
- 1.2. Following the reservoir and pipeline planning approvals, the Applicant, Portsmouth Water (PW), and its appointed pipeline construction contractor (Ward & Burke Construction Ltd) have been investigating ways to improve the route of the pipeline, to further reduce its impact on local communities and the environment in light of alternative innovative construction techniques. As a result, a new dual pipeline route and design have been identified, which requires a new planning approval.
- 1.3. This report is an Arboricultural Impact Assessment (AIA) prepared to support the new full planning application for the revised Havant Thicket Pipeline Scheme and will form a new appendix to the Biodiversity Chapter (Chapter 9) of the Revised ES.
- 1.4. It reports on the impacts on the recorded trees from the Pipeline Scheme and is supplemented by the production of Tree Protection Plans (TPPs), which are included within Appendix C of this report.
- 1.5. It also confirms whether any of the recorded trees could be classified as veteran specimens. The veteran classification includes trees which might also be classified as ancient.
- 1.6. The impact section of the report has been updated to reflect a construction constraint at the Bedhampton Pumping Station site which has resulted in the loss of one moderate quality tree (G168-A, retained as a monolith), it also includes 7 additional trees planted by Hampshire County Council (5 of which are proposed for translocation as part of this Scheme). These changes have been included within a revised set of TPPs, which also includes now the local highways boundary. The design changes are not deemed a material change. We have also corrected an error which previously showed tree ref T069 (CP) in the AIA schedule for removal (it will be retained as shown on the relevant TPP). All changes are shown in green text.
- 1.7. In response to consultation comments, we have also reiterated the commitment to share arboricultural site visit notes with the Havant Borough Council tree officer as part of the quarterly reporting identified in the Dual Pipeline CEMP (ref Pipeline B4 in the Appendix A REAC table) for agreement and sign off.

Location of the Scheme

- 1.8. The Scheme for the purposes of this report includes the pipeline and the 'pipeline corridor' – the working corridor of the pipeline route – which lies to the south of the reservoir site within Havant Borough Council boundary, connecting the Havant Thicket Reservoir to Bedhampton Springs.
- 1.9. The pipeline corridor will start from the Bedhampton Pumping Station in the south and pass through the Leigh Park Estate under local roads and open spaces. The corridor also runs north along the Hermitage Stream before turning north-east and broadly following the Riders Lane Stream towards the reservoir site.
- 1.10. At the northern end of the corridor, before entering the reservoir site, the pipeline intersects the Sir George Staunton Conservation Area, Leigh Park Registered Park and Garden (RPG), species rich grassland within Staunton Country Park, designated Thicket Lawn Site of Importance for Nature Conservation (SINC) and High Lawn SINC.
- 1.11. The pipeline corridor is Figure 1-1 below:

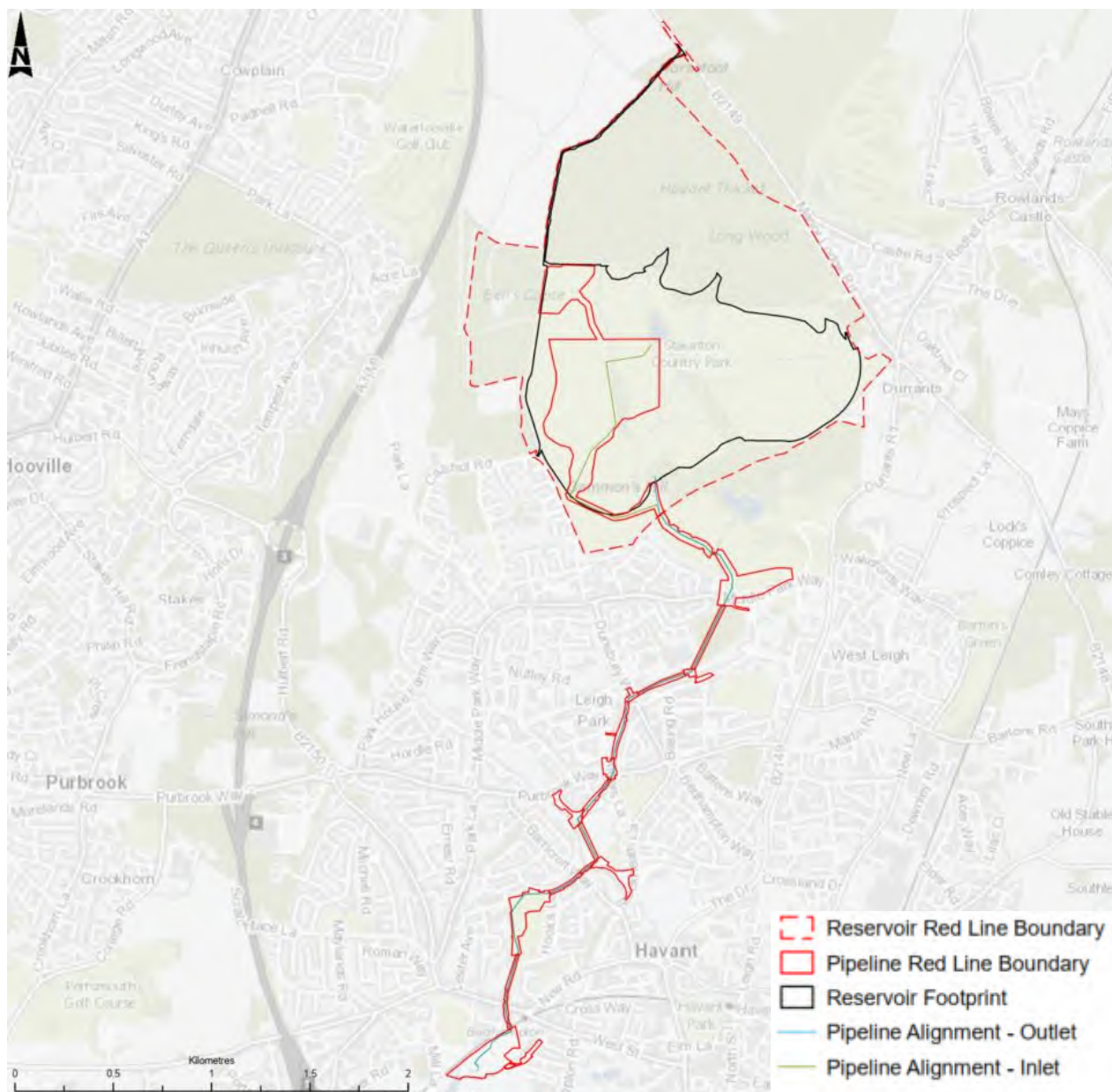


Figure 1-1 – Location of pipeline corridor

Description of the Scheme

- 1.12. Outline planning permission was secured for a pipeline Scheme in October 2021. Full planning permission is now being sought for a revised pipeline design for the same purpose: to transfer water from Bedhampton Springs to fill the reservoir in the winter and draw it off to treat and supply when needed in the summer.
- 1.13. Under the original pipeline element of the wider reservoir and pipeline Scheme application submitted in 2020, much of the pipeline would have been installed using an open-cut method – involving excavation, laying the pipe in a trench and then backfilling to original levels. The revised proposals introduces the use of micro-tunnelling to install approximately two thirds of the pipeline, installing it section-by-section via eight access shafts. The remainder – generally across open ground – would employ the open-cut method of construction.
- 1.14. The components of the application for the revised pipeline comprise:
 - Construction of two predominantly underground, pipelines linking the reservoir with the existing pumping station at Bedhampton;
 - Emergency drawdown discharge structure at Hermitage Stream;

- Construction of eight access shafts;
 - Upgrades to existing culverts close to shaft numbers 5, 6 and 8 to manage flood risk; and
 - Washout and air valve chambers (typically below ground).
- 1.15. The new pipeline would be built and operated by Portsmouth Water as part of the overall Havant Thicket Reservoir Scheme. It would be approximately 5.3km in length. The new pipelines would be installed inside a tunnel up to 2.5m wide formed by concrete pipe sections at depths of between 3m and 10m underground, which will be well below roads, footpaths, utilities, watercourses and tree routes. The pipeline will also avoid going directly under houses, although it would be installed much deeper than any foundations.
- 1.16. A combination of open-cut and micro-tunnelling techniques will be used for the construction of the pipeline. Open-cut techniques will take place in two main locations, accounting for approximately 1.5km of the 5.3km overall pipe length and are located at:
- Council playing fields adjacent to Havant Rugby Football Club; and
 - Land to the west and southwest of Staunton Country Park.
- 1.17. Micro-tunnelling will be used for the remainder of the pipeline construction. This technique involves concrete pipes being pushed, using hydraulic jacks, through the ground behind a Micro-Tunnel Boring Machine. This drilling will take place via the eight shafts that are spread out along the pipeline route at intervals of between approximately 230 and 500m, reducing the overall extents of open-cut construction. The diameters of the eight shafts will range from between 7 and 9.5m for the four reception shafts and 11 to 13m for the four launch shafts.
- 1.18. Above ground construction will also occur at each of the eight access shafts. The construction will utilise an open-dug cast in-situ reinforced concrete caisson technique. This method allows for adaptation to different ground and groundwater conditions and will be suitable for launch and reception shafts for the tunnelling works, as well as the emergency discharge chamber. The shafts themselves will then be backfilled, with manholes created inside the shaft to provide permanent access to valves as required. This method allows for future interventions to the pipe if required, whilst leaving minimal visible impact at the shaft location.
- 1.19. An additional shaft just south of Corhampton Crescent in Leigh Park, where the Riders Lane Stream meets the Hermitage Stream, will be used as an emergency discharge chamber. This will allow some water from the reservoir to be released safely into the Hermitage Stream, via the pipeline in the highly unlikely event of the water level in the reservoir needing to be lowered quickly. The rest of the emergency discharge flows will be discharged into Riders Lane Stream. The culverts or drainage channels along the Riders Lane Stream, downstream of the new reservoir, will also be upgraded, so that flows from the reservoir can be safely accommodated. A new utilities kiosk (dimensions 7m x 5.3m x 3.2m high) will also be required adjacent to the emergency discharge chamber to house electrical utilities and valve actuators.
- 1.20. The Pipeline Overview Planning Drawing (HTR-ATK-ZZ-ZZ-GS-Z-0186) illustrates the locations of the open-cut construction and the eight shafts.
- 1.21. Land for access and surface works will be located at each shaft point and around the land required for open-cut construction. These areas will also facilitate construction activities including pipe and material storage. The land within Portsmouth Water's Bedhampton Pumping Station will accommodate the main welfare area.
- 1.22. Adjacent to the Bedhampton Pumping Station, the pipeline crosses beneath the railway at a depth of approximately 6m. Further north along the route, the pipeline crosses beneath Hermitage Stream at a depth of approximately 3m (fill pipeline) and 5.5m (outlet pipeline) between Shafts 3 and 4. Similarly, the pipeline crosses beneath Riders Lane Stream at multiple points along the route, at approximately 3m (fill pipeline) and 5m (outlet pipeline) deep.
- 1.23. Details of the location and appearance of the pipeline and associated structures is provided in the pipeline planning application drawings.
- 1.24. Traffic and construction management will be outlined in the Transport Assessment and the Construction Traffic Management Plan submitted with the planning application.
- 1.25. The layout of the proposals has been overlaid on to the TPPs to determine the impacts of the Scheme on the existing tree stock.

Scope of works

- 1.26. This report presents arboricultural information captured by Atkins' Associate Arboriculturist Tom Dale BSc (Hons), Cert Arb L6 (ABC), M.Arbor.A and Atkins' Principal Landscape and Arboricultural Consultant Adam Atkins, BA (Hons), CMLI, TechCert (ArborA).
- 1.27. The report supplements and includes data submitted as part of the previous AIA report produced by Atkins, document reference A9.14 Arboricultural Impact Assessment, document number HTR-ATK-ZZ-ZZ-RP-L-0001.
- 1.28. The scope of works includes: the survey of trees that could be impacted by the Scheme; the preparation of an AIA to include Arboricultural Method Statement information; and the preparation of TPP drawings which display in graphic form the trees surveyed and the impact of the works.
- 1.29. A tree constraints plan was supplied to the contractor/designers as a model file to enable them to adjust the layout of the proposals to facilitate the works and reduce the impacts on trees. The tree constraints plan model file has not been submitted as part of this assessment as the information contained is also included on the TPPs.

2. Methodology

General

- 2.1. This tree survey has been undertaken in accordance with *BS 5837:2012 Trees in Relation to Design, Demolition and Construction – Recommendations*. The Standard gives recommendations and guidance on the relationship between trees and the design, demolition and construction process, setting out the principles and procedures to be applied to achieve a harmonious and sustainable relationship between trees and structures.
- 2.2. *BS 5837:2012* does not set explicit parameters for measuring the sensitivity of an arboricultural resource; nor does it assess the magnitude of impact of a proposed development on trees (other than by providing a record of the number of trees that would need to be removed to facilitate the development). Rather, the British Standard provides parameters which enable the arboriculturist to assess the quality of all the trees and other arboricultural features that may be affected by the development that is proposed.
- 2.3. Whilst the BS categories are open to varied interpretation, the guidelines in the cascade chart of *BS 5837:2012* (see insert A.1 in Appendix A of this report) provide details on how to determine tree qualities and can be used to inform the design process to retain those trees of higher quality where possible.

Planning policy and definition of veteran trees

- 2.4. The definition of veteran trees for the purposes of this assessment follows the core standing advice and planning policy.
- 2.5. The ‘Standing Advice’¹ on ancient woodland, ancient trees and veteran trees provides guiding principles for the classification of ancient and veteran trees. These principles are also covered within the Forestry Commission and Natural England (NE) guidance.
- 2.6. The standing advice clearly defines veteran trees as:
“All ancient trees are veteran trees, but not all veteran trees are ancient. A veteran tree may not be very old, but it has decay features, such as branch death and hollowing. These features contribute to its biodiversity, cultural and heritage value”.
- 2.7. The definition provides a degree of ambiguity, but provides clear guiding principles, namely that veteran trees have:
 - *Decay features, such as branch death and hollowing; and*
 - *These features contribute to its biodiversity, cultural and heritage value.*
- 2.8. The definition of ancient trees supplements this by focusing the definition of veteran trees arguably (but not definitively) on:
 - *Great age;*
 - *Size;*
 - *Condition;*
 - *Biodiversity value as a result of significant wood decay and the habitat created from the ageing process; and*
 - *Cultural and heritage value.*Very few trees of any species become ancient.
- 2.9. As such this assessment has proceeded on the basis that the classification of veteran trees should take account of the specific features of trees (size and condition) alongside their biodiversity, cultural and heritage value.
- 2.10. The relevant planning policy is detailed within the National Planning Policy Framework (NPPF) 2023. The NPPF provides a joint definition of an ancient or veteran tree:

¹ <https://www.gov.uk/guidance/ancient-woodland-and-veteran-trees-protection-surveys-licences>

- 2.11. **Ancient or veteran tree:** ‘a tree which, because of its age, size and condition, is of exceptional biodiversity, cultural or heritage value. All ancient trees are veteran trees. Not all veteran trees are old enough to be ancient but are old relative to other trees of the same species. Very few trees of any species reach the ancient life-stage’.
- 2.12. This definition extends that within the standing advice to include additional criteria:
- Exceptional biodiversity, cultural or heritage value;
 - Old relative to other trees of the same species.
- 2.13. Therefore, in line with this policy veteran trees have been classified in accordance with:
- Size.
 - Condition (decay features, such as branch death and hollowing, plus associated species).
 - Exceptional biodiversity value as a result of significant wood decay and the habit created from the ageing process.
 - Exceptional cultural and heritage value.
 - Old relative to other trees of the same species.
- 2.14. Further guidance to assist in classifying trees as old for their species based on stem size criteria was obtained from Figure 1.3 ‘Chart of girth in relation to age and developmental classification of trees’ from the *Ancient and other veteran trees: further guidance on management* (Lonsdale, 2013). This lists tree species against ascending girth measurements to help define whether a tree is locally notable; veteran/notable; ancient or late ancient.
- 2.15. This chart is not definitive and further criteria as detailed previously is also used in the classification of the trees as veteran or locally notable.
- 2.16. Locally notable trees for the purposes of this assessment include those that can be defined as mature and standing out locally because of large size in comparison to other trees in locality or given the presence of veteran habitat features, but do not meet the criteria to be deemed a veteran tree in line with the approach adopted.
- 2.17. The Woodland Trust’s Ancient Tree Inventory was also accessed (March 2023) to identify if any trees with the Site extents have been registered on the Trust’s inventory as veterans or ancient specimens. This is a material consideration as part of this assessment. However, it does not imply the Arboriculturist agrees with their classification, as the approach may have differed to that applied by the Arboriculturist and author of this report.
- 2.18. The NPPF was updated in July 2018 to provide greater protection for veteran trees (and subsequently updated so the latest published version is December 2023). The pertinent section is paragraph 186 c), which states: ‘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 compensation strategy exists’.
- 2.19. Further planning policy in relation to trees and their impacts is covered within Local Planning Policy set by Havant Borough Council (HBC) detailed within their Local Plan. Specific policy references are detailed within the Biodiversity Chapter of the ES.

Statutory protection

- 2.20. Trees may be protected through a Tree Preservation Order (TPO) or through being located within a Conservation Area. The law on TPOs is in Part VIII of the Town and Country Planning Act 1990 as amended and in the Town and Country Planning (Tree Preservation) (England) Regulations 2012.
- 2.21. A TPO is made by a local authority in respect of a tree(s) considered to bring amenity value to the surrounding area. A TPO makes it an offence to cut down, uproot, lop, top, wilfully damage or wilfully destroy a protected tree without authorisation.
- 2.22. HBC was contacted to determine the presence of any TPOs or Conservation Areas within the Scheme boundary.

Spatial scope

- 2.23. The survey works focused on trees within the Scheme extents. Where trees were recorded adjacent to the Scheme boundary this relates to previous iterations of the proposals prior to the confirmation of the red line boundary.
- 2.24. This AIA is targeted at the impacts on the trees. It does not cover the subsequent impacts such tree removal would have on ecological or landscape receptors which are outlined in the Biodiversity (Chapter 9) and Landscape and Visual (Chapter 11) chapters of the ES. The TPPs (see Appendix C of this report) illustrate the trees that have been surveyed.

Survey

- 2.25. The approach to the survey involved a ground-level walked assessment by qualified and experienced arboriculturists.
- 2.26. The locations of individual trees and the start and end points of groups/hedgerows were, where possible, plotted using proprietary GIS data capture software on Trimble hand-held mobile mappers. These locations were verified using available aerial imagery and available topographical data showing tree locations.
- 2.27. The various arboricultural features were numbered sequentially from 001: individual trees recorded were prefixed with a 'T' (e.g. T001), groups of trees with a 'G', woodlands with a 'W' and hedges with an 'H'.
- 2.28. Where trees were previously recorded as part of the original ES AIA within the Staunton Country Park then these data entries included a 'CP' after the reference number.
- 2.29. No numbered tree tags were used for the survey, but where already fixed to trees these were noted within the survey schedule.

Data gathering

- 2.30. Data was collected in accordance with BS 5837:2012, as outlined in Appendix A of this report. The purpose of the tree categorisation method applied by the arboriculturist was to identify the quality and value (in a non-fiscal sense) of the existing tree stock, allowing informed decisions to be made concerning which trees should be removed or retained if development is to occur.
- 2.31. For a tree to qualify under any given category, it should fall within the scope of that category's definition as defined in Appendix A of this report (categories U, A, B, C) and, for trees in categories A to C, it should qualify under one or more of the three subcategories (1, 2, 3). Subcategories 1, 2 and 3 are intended to reflect arboricultural and landscape qualities, and cultural values, respectively.
- 2.32. Trees were recorded as individual specimens or as groups, woodlands, or hedgerows. Where trees were not recorded as an individual specimen, the tree survey data within the schedule is based on what is a reasonable average measurement of the trees/shrubs within the group extents or it's taken from one of the largest specimens within the group. The method of measuring diameters is defined in Appendix A of this report.
- 2.33. Trees were recorded as individual specimens, groups, hedgerows and woodlands. Where trees were recorded as groups, hedgerows or woodlands, measurements were taken from the largest tree within the group/hedgerow/woodland. The method of measuring diameters is defined in Appendix A of this report.
- 2.34. This level of survey meets the requirements of BS5837:2012, which states that 'trees growing as groups or woodland should be identified and assessed as such'. The standard defines the term group as 'trees that form cohesive arboricultural features either aerodynamically (e.g. trees that provide companion shelter), visually (e.g. avenues or screens) or culturally including for biodiversity (e.g. parkland or wood pasture)'.
- 2.35. Crown spreads of the surveyed trees were given as an average measurement where the tree's crowns were balanced. Where there was a notable difference in crown spread to a cardinal point, these were recorded. The average measurement was taken from the cardinal point relevant to the direction of the Scheme. This level of survey is deemed sufficient by the arboriculturist to establish

the extent of the crown spread in the direction of any future proposals. All crown spread measurements should be taken from the tree survey schedules (see Appendix B of this report).

- 2.36. Veteran trees are specifically noted in A3 category on the cascade chart. However, where the veteran habitat features significantly increase the risk of harm to adjacent people or property the estimated remaining life expectancy and safety issues were also considered in the assigning of tree categories.

Limitations to survey

- 2.37. Where access permitted, trees were identified and inspected from ground level only and were not climbed. No invasive examination techniques (such as increment boring, or internal decay detection) were carried out and as such no assessment of the internal condition of the wood of these trees can be given.
- 2.38. The tree survey undertaken is not intended to be a tree risk management survey targeting safety-related issues. However, where specific hazards have been identified these have been recorded and management recommendations provided. These are detailed within the tree survey schedules (see Appendix B of this AIA).
- 2.39. As some trees are veteran specimens, the features they contain are often defects that pose a safety risk, meaning any management recommendations would need to be commensurate with the risk of harm to adjacent people or property and be confirmed through consultation with NE. This work should be limited to those trees that would impact on the Scheme.
- 2.40. Where, as part of this assessment, a tree has been identified as a possible veteran but not as an ancient tree, then the level to which the habitat features provide suitable saproxylic habitat for invertebrates, mimicking ancient trees, informed its classification. These trees have not been subjected to further detailed assessment from an entomologist or additional specialists in determining the quality of its habitat features.
- 2.41. Validity, accuracy and findings of the tree locations will relate directly to the accuracy of the supplied topographical data, available aerial imagery and the GIS data capture software being used. As such the accuracy of the tree locations is potentially open to minor discrepancies and their locations may need verifying.
- 2.42. Where tree groups have been illustrated as an outline this covers the extents of the tree group. It does not always illustrate individual trees within the groups. Where individual trees were identified they were plotted separately.
- 2.43. The report does not comment on possible effects of trees on neighbouring properties, including in relation to subsidence or heave, or with regard to possible hazards presented by trees surveyed.
- 2.44. Trees are living organisms subject to changes outside human control. Trees and their environment alter with the seasons and it is advisable to inspect trees whilst in full leaf and when out of leaf. Following harsh or unexpected weather conditions, or heavy storms it is also prudent to inspect trees. Changes to ground water conditions will affect the root growth of a tree. Such changes are not always the result of human influence and other factors may be involved.

3. Existing site conditions

Existing land use

- 3.1. The pipeline corridor starts from the Portsmouth Water Bedhampton Pumping Station in the south. It then passes through the Leigh Park Estate under local roads and open spaces, then runs north along the Hermitage Stream before turning north-east and broadly following the Riders Lane Stream towards the reservoir site.
- 3.2. At the northern end of the corridor, the pipeline tunnels underneath the Great Copse Ancient Woodland before entering the reservoir site. It also intersects the Sir George Staunton Conservation Area, Leigh Park Registered Park and Garden (RPG) and species rich grassland within Staunton Country Park, Thicket Lawn Site of Importance for Nature Conservation (SINC) and High Lawn SINC.

Existing tree stock – pipeline corridor

- 3.3. The existing trees are a mixture of species and age classifications. The quality of the trees is varied with the approximate percentage of the total recorded trees being classified as Category A (high quality) is 12%, Category B (moderate quality) is 35%, Category C (low quality) is 51% and Category U (unclassified) is 2%.
- 3.4. The percentage of Category A trees is relatively high and these trees are generally mature Common oak specimens. They are growing as prominent street trees or located in areas that are accessible or visible to members of the public. As such they are of high landscape and arboricultural value. The Scheme has been designed to limit the impact on trees, notably the high-quality specimens. Currently no Category A trees have been identified for removal as part of the works.
- 3.5. The trees are generally growing in publicly accessible areas either as part of open green spaces or growing along watercourses with footpath access. The trees along the watercourses include more water-tolerant species such as alder, goat willow and poplar. Some of these trees are multi-stem specimens suggesting they have been felled to ground level and have regenerated, perhaps as part of maintenance operations for the watercourses.
- 3.6. The only area without public access is the Bedhampton Pumping Station. This area supports sporadic planted tree groups including a mixture of species including silver birch, oak and cherry plum. The age of the tree stock varies from young to mature specimens, in varying condition.
- 3.7. The pipeline corridor passes through Staunton Country Park as it heads south from the reservoir site. This area of the country park is largely grassland with intermittent standard oak trees and sporadic groups of mixed species trees, including poplar and goat willow. There are veteran trees recorded within this area. However, the pipeline corridor has been positioned to avoid these recorded trees.
- 3.8. The survey schedule provided in Appendix B provide all the information on the recorded trees and includes preliminary management recommendations. These recommendations being in relation to tree risk management operations.

Protected trees

- 3.9. There are trees protected by TPOs and Conservation Areas within the Scheme boundary. Such statutory protection makes it an offence to cut down, uproot, lop, top, wilfully damage or wilfully destroy a protected tree without authorisation. However, works approved as part of a planning application may include powers to undertake works to trees which are subject to a TPO or those set within a Conservation Area.
- 3.10. The interactive mapping provided by HBC was accessed, and the pertinent mapping captured in the figures below.
- 3.11. Figure 3-1 illustrates TPO number 1174. The tree is growing to the south of Ditcham Crescent on the east bank of Riders Lane Stream. This section of the pipeline is to be installed via micro-tunnelling, meaning the tree will not be impacted upon by the proposed Scheme and the tree is not included as part of this assessment.



Figure 3-1 – TPO reference number 1174 (green dot)

[Source: <https://www.havant.gov.uk>]

3.12. Figure 3-2 illustrates TPO number 1174 as taken from google streetview.



Figure 3-2 – TPO reference number 1174

[Source: google mapping]

- 3.13. Figure 3-3 illustrates TPO number 1812 group G1 and G2. The trees are growing set back from Meyrick Road. The existing hard surfaced lane will be utilised to access the Bedhampton section of the site meaning the trees within the group TPOs will not be impacted upon by the Scheme and are not included as part of this assessment.

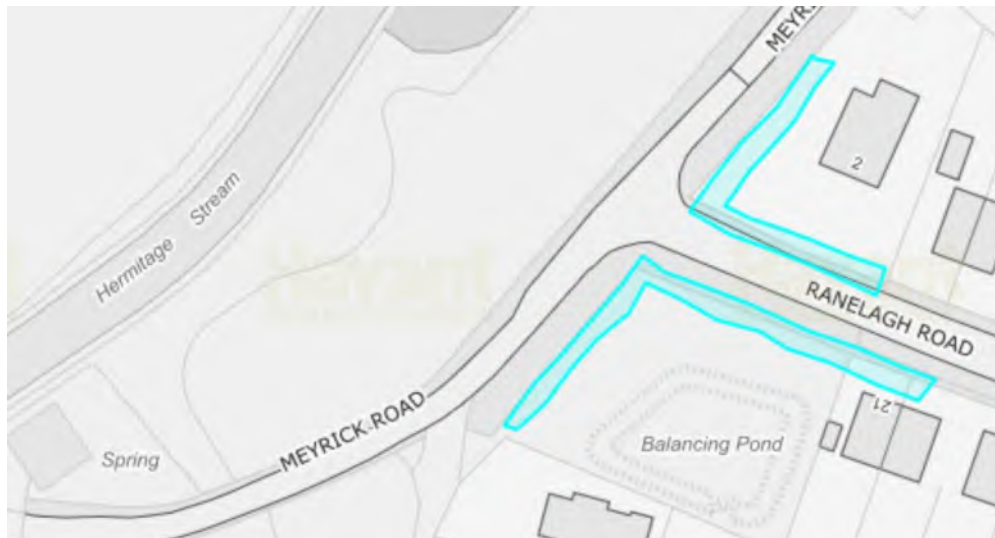


Figure 3-3 – TPO reference number 1812 – G1 (south teal polygon) & G2 (north teal polygon)
[Source: <https://www.havant.gov.uk>]

- 3.14. Figure 3-4 illustrates the extents of the Sir George Staunton Conservation Area, which includes many of the trees recorded for the northern section of the pipeline corridor.

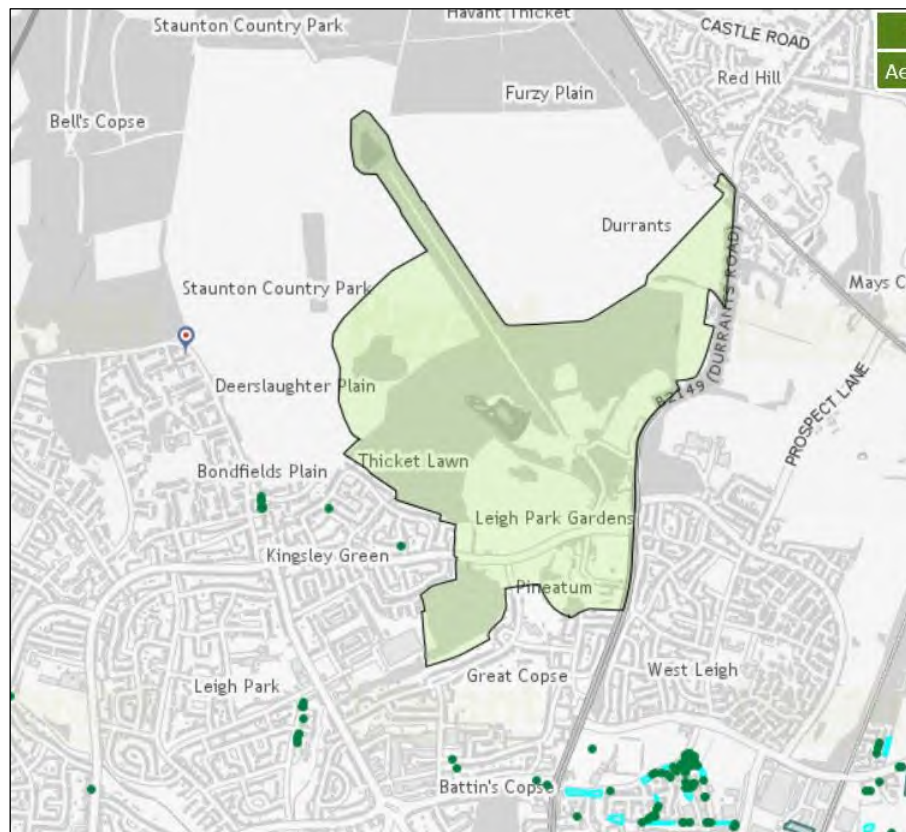


Figure 3-4 – Sir George Staunton Conservation Area
[Source: <https://www.havant.gov.uk>]

- 3.15. Figure 3-5 illustrates the extents of the Old Bedhampton Conservation Area, which includes trees recorded within the Bedhampton site, and where the Public Right of Way diversion is proposed.



Figure 3-5 – Old Bedhampton Area

[Source: <https://www.havant.gov.uk>]

- 3.16. The MAGIC mapping facility (April 2024) provided by DEFRA was reviewed to determine the presence of any areas registered as Ancient and Semi-Natural Woodland (Magic Map Application (defra.gov.uk)). This revealed the Great Copse Ancient & Semi-Natural Woodland partially within the Scheme boundary with its extents illustrated in Figure 3-5. Shaft site 7 has been located specifically to avoid the Ancient Woodland extents as illustrated in Figure 3-6.



Figure 3-6 – Great Copse Ancient & Semi-Natural Woodland extents (green dashed area)

[Source: Magic Map Application (defra.gov.uk)]

- 3.17. The MAGIC mapping also identifies areas of Deciduous Woodland recorded as part of the Priority Habitat Inventory. The following are within the Scheme boundary shown in green in Figure 3-7.



Figure 3-7 – Deciduous Woodland recorded as part of the Priority Habitat Inventory (green hatched areas) [Source: Magic Map Application (defra.gov.uk)]

Veteran trees

- 3.18. The Woodland Trust's Ancient Tree Inventory was accessed (April 2024) to identify if any trees with the Scheme boundary have been registered as veterans or ancient specimens. The Woodland Trust also provided a list of three trees that they held concern's over as part of their consultation response, see Table 3-1 below. The only tree within the Scheme boundary is an apple tree recorded as a veteran specimen growing on Dunsbury Way.

Table 3-1 – Ancient Tree Inventory (ATI)

ATI no.	Tree species	ATI Categorisation	Grid reference/location	Impact
198216	Oak	Veteran	SU7172308524 Great Copse	No direct impact. Tree approx. 250m northeast of shaft site
198218	Oak	Notable	SU7170308464 Great Copse	No direct impact. Tree approx. 150m northeast of shaft site
201615	Apple	Veteran	SU7130308186 Highway verge, Dunsbury Way	Reference T065 as part of survey. Construction exclusion zone to be defined by temporary protective barriers during works. No works proposed within soft surface RPA.
213052	Oak	Notable	SU7130308186 North of Purbrook Way	Reference T083 as part of survey. T083 has been classified as a veteran tree by AtkinsRéalis as part of this assessment. Bespoke mitigation measures detail in Table 4-2.

- 3.19. The ATI veteran apple tree is reference T065 as part of this tree survey. The tree is shown below in Figure 3-8 and shows the extensive existing hard surfacing around the tree which is likely to have highly modified its root zone.



Figure 3-8 – T065 Apple tree (ATI ref 201615)

[Source: google mapping]

- 3.20. Individual trees that have been classified as veteran specimens as part of this AIA are referenced as 'Vet' within the life stage classification column of the survey schedule. A total of 10no. veteran trees were identified as part of this assessment. All these trees are growing within or adjacent to the pipeline corridor. See Table 3-2 below for those trees recorded as veteran specimens.

Table 3-2 – Veteran Trees

Tree no.	Species	Location	Summary of value	Tree photographs
T075 (CP)	Common Oak	Staunton Country Park Easting:47148487 Northing:10897386	Size: Large stem girth in comparison to other trees in locality. Condition: Decay features present including developing heartwood decay. Dead branches and old storm damage recorded in crown with desiccated white rot present. Crown break at approximately 3m. Pronounced northern scaffold branch Biodiversity value: Decayed heartwood rot and white rot providing habitat for saproxylic invertebrates. Cultural and heritage value: Tree within Sir George Staunton Conservation Area. Age: Its diameter of 1300mm means it has a girth of 4.08m and means it is included within the 'veteran/notable' criterion of girth in relation to age as shown in Figure 1.3 of 'Ancient and Other Veteran Trees: Further Guidance on Management' (Lonsdale, 2013).	

Tree no.	Species	Location	Summary of value	Tree photographs
T077 (CP)	Common Oak	Staunton Country Park Easting:47160754 Northing:10885194	Size: Large stem girth in comparison to other trees in locality. Condition: Decay features present including developing heartwood decay. Dead branches and old storm damage recorded in crown with desiccated white rot present. Biodiversity value: Decayed heartwood rot and white rot providing habitat for saproxylic invertebrates. Cultural and heritage value: Tree within Sir George Staunton Conservation Area. Age: Its diameter of 1300mm means it has a girth of 4.08m and means it is included within the 'veteran/notable' criterion of girth in relation to age as shown in Figure 1.3 of 'Ancient and Other Veteran Trees: Further Guidance on Management' (Lonsdale, 2013).	

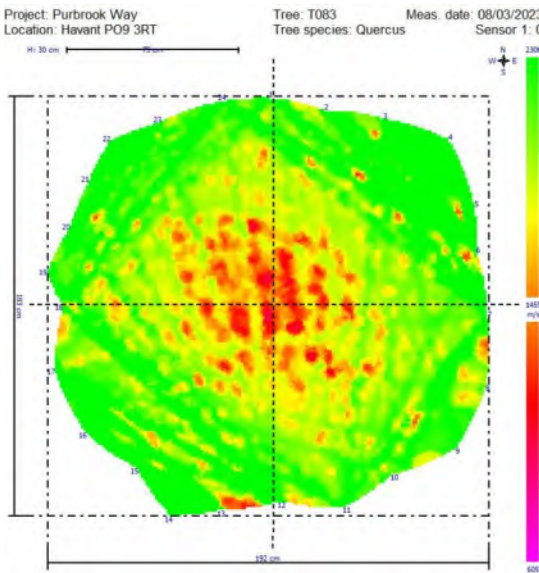
Tree no.	Species	Location	Summary of value	Tree photographs
T082 (CP)	Common Oak	Staunton Country Park Easting:47172114 Northing:10883285	Size: Large stem girth in comparison to other trees in locality. Condition: Decay features present including developing heartwood decay. Dead branches and old storm damage recorded in crown with desiccated white rot present. Vast crown, dominant to west with pronounced scaffold branch. Pronounced buttress roots. Biodiversity value: Decayed heartwood rot and white rot providing habitat for saproxylic invertebrates. Cultural and heritage value: Tree within Sir George Staunton Conservation Area. Age: It's diameter of 1400mm means it has a girth of 4.40m and means it is included within the 'veteran/notable' criterion of girth in relation to age as shown in Figure 1.3 of 'Ancient and Other Veteran Trees: Further Guidance on Management' (Lonsdale, 2013).	

Tree no.	Species	Location	Summary of value	Tree photographs
T083 (CP)	Common Oak	Staunton Country Park Easting:47171565 Northing:10879370	Size: Large stem girth in comparison to other trees in locality. Condition: Decay features present including basal cavity on south side of main stem revealing desiccated white rot and developing heartwood decay. Dead branches and old storm damage recorded in crown with desiccated white rot present. Crown break at approximately 4m into multi stems suggesting historic pollard. Biodiversity value: Decayed heartwood rot and white rot providing habitat for saproxylic invertebrates. Cultural and heritage value: Tree within Sir George Staunton Conservation Area. Age: Its diameter of 1250mm means it has a girth of 3.92m and means it is included within the 'locally notable' criterion of girth in relation to age as shown in Figure 1.3 of 'Ancient and Other Veteran Trees: Further Guidance on Management' (Lonsdale, 2013).	

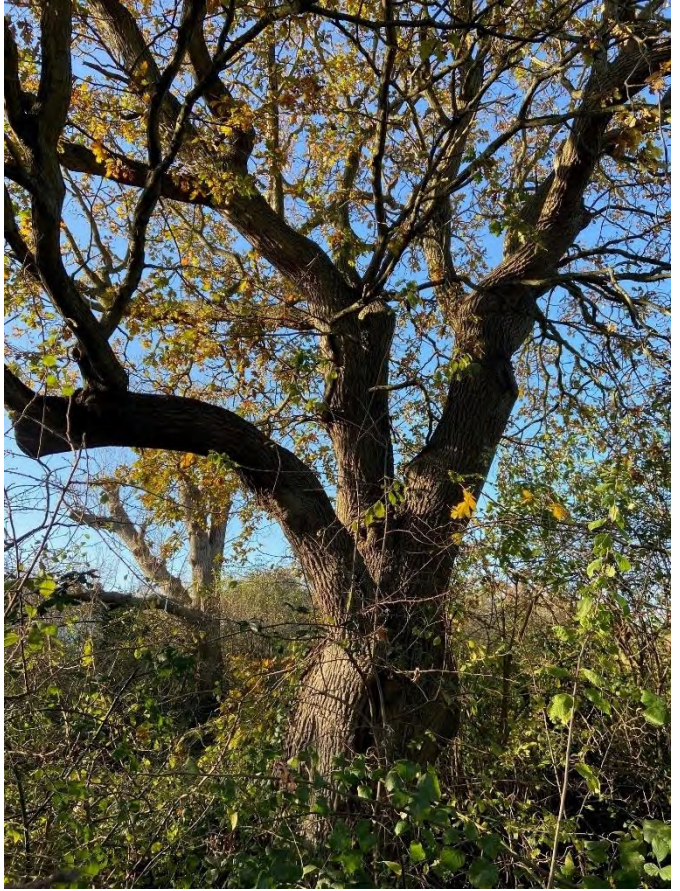
Tree no.	Species	Location	Summary of value	Tree photographs
T023	Common Oak	Staunton Country Park Easting: 47170911 Northing: 10888163	Size: Large stem girth in comparison to other trees in locality. Condition: Crown break at approximately 5m into multi stems. Suggesting potential former pollard. Goblet shaped crown. Dead branches and old storm damage recorded in crown with desiccated white rot present. Biodiversity value: Potential heartwood rot and white rot providing habitat for saproxylic invertebrates. Cultural and heritage value: Tree within Sir George Staunton Conservation Area. Age: Its diameter of 1230mm means it has a girth of 3.86m and means it is included within the 'locally notable' criterion of girth in relation to age as shown in Figure 1.3 of 'Ancient and Other Veteran Trees: Further Guidance on Management' (Lonsdale, 2013).	

Tree no.	Species	Location	Summary of value	Tree photographs
T027	Common Oak	Staunton Country Park Easting: 47185145 Northing: 10875061	Size: Large stem girth in comparison to other trees in locality. Condition: Decay features present including developing heartwood decay. Dead branches and old storm damage recorded in crown with desiccated white rot present. Pronounced buttress roots and basal flare. <i>Ganoderma</i> spp. Wood decay fungi brackets present in between buttress roots to South West, North East and West. Not significant at present. Historic brackets. Extensive reaction wood Biodiversity value: Decayed heartwood rot and white rot providing habitat for saproxylic invertebrates. Cultural and heritage value: Tree within Sir George Staunton Conservation Area. Age: Its diameter of 1330mm means it has a girth of 4.17m and means it is included within the 'veteran/notable' criterion of girth in relation to age as shown in Figure 1.3 of 'Ancient and Other Veteran Trees: Further Guidance on Management' (Lonsdale, 2013).	

Tree no.	Species	Location	Summary of value	Tree photographs
T036 T037	Sweet Chestnut Sweet Chestnut	Staunton Country Park Easting: 47196497 Northing: 10870251	Size: Large stem girths in comparison to other trees in locality. Condition: Dead branches and old storm damage recorded in crowns with desiccated white rot present. Large diameter dead wood present. Crowns still full, no significant retrenchment recorded. Pronounced basal swelling. Dense ivy encroachment on T036. Biodiversity value: Decayed white rot providing habitat for saproxylic invertebrates. Cultural and heritage value: Trees within Sir George Staunton Conservation Area. Age: Their diameters of 1670mm & 1680mm mean they have girths of 5.2m and that they are included within the 'veteran/notable' criterion of girth in relation to age as shown in Figure 1.3 of 'Ancient and Other Veteran Trees: Further Guidance on Management' (Lonsdale, 2013).	

Tree no.	Species	Location	Summary of value	Tree photographs
T083	Common Oak	Purbrook Way Easting: 47120760 Northing: 10780942	Size: Large stem girth in comparison to other trees in locality. Condition: Occasional moderate diameter deadwood in lower and middle crown. Not extensive. Arbotom sonic tomography testing revealed limited internal decay (red being decayed wood, green being sound) Project: Purbrook Way Location: Havant PO9 3RT Tree: T083 Tree species: Quercus Meas. date: 08/03/2023 Sensor 1: 0  Biodiversity value: Occasional dead wood with white rot providing limited habitat for saproxylic invertebrates. Cultural and heritage value:	

Tree no.	Species	Location	Summary of value	Tree photographs
			Tree is not subject to a TPO or set within a Conservation Area. Old relatively to other trees in the locality. Age: Its diameter of 1330mm means it has a girth of 4.17m and means it is included within the 'veteran/notable' criterion of girth in relation to age as shown in Figure 1.3 of 'Ancient and Other Veteran Trees: Further Guidance on Management' (Lonsdale, 2013).	

Tree no.	Species	Location	Summary of value	Tree photographs
T128	Common Oak	West of Stockheath lane, on bank of Hermitage Stream Easting: 47121115 Northing: 10725990	Size: Large stem girth in comparison to other trees in locality. Condition: Decay features present including developing heartwood decay. Dead branches and old storm damage recorded in crown with desiccated white rot present. Pronounced basal swelling. Biodiversity value: Decayed heartwood rot and white rot providing habitat for saproxylic invertebrates. Cultural and heritage value: Tree is not subject to a TPO or set within a Conservation Area. Old relatively to other trees in the locality. Age: Its diameter of 1300mm means it has a girth of 4.08m and means it is included within the 'veteran/notable' criterion of girth in relation to age as shown in Figure 1.3 of 'Ancient and Other Veteran Trees: Further Guidance on Management' (Lonsdale, 2013).	

Tree no.	Species	Location	Summary of value	Tree photographs
T189	Common Beech	East of Hermitage Stream in Bedhampton Water Treatment works Easting: 47042762 Northing: 10626212	Size: Large stem girth in comparison to other trees in locality. Condition: Decay features present including developing heartwood decay. Dead branches and old storm damage recorded in crown with desiccated white rot present. Three stems from 1.5m. Biodiversity value: Decayed heartwood rot and white rot providing habitat for saproxylic invertebrates. Cultural and heritage value: Tree is not subject to a TPO or set within a Conservation Area. Old relatively to other trees in the locality. Age: Its diameter of 1580mm means it has a girth of 4.96m and means it is included within the 'veteran/notable' criterion of girth in relation to age as shown in Figure 1.3 of 'Ancient and Other Veteran Trees: Further Guidance on Management' (Lonsdale, 2013).	

4. Arboricultural impacts

General

- 4.1. This report determines the impact of the Scheme on the recorded tree stock. It provides details on the recorded trees including their condition and in some cases suitability for retention.
- 4.2. The report is supplemented by the TPPs (Appendix C of this report) that illustrate the Scheme, the Scheme boundary, the recorded trees and trees that would require removal or part removal to facilitate the Scheme.
- 4.3. The TPPs are drawing numbers HTR-ATK-PZ-BR-DR-L-0001 to HTR-ATK-PZ-BR-DR-L-0013.
- 4.4. The drawings cover the outline of the Scheme, compound areas and the working corridor as defined by the red line boundary. The assessment of tree loss has included the involvement of the contractor to advise on working areas and where these have been limited to retain trees.
- 4.5. Section 5 of this report contains the Arboricultural Method Statement (AMS). Ward and Burke Construction Ltd (the appointed Principal Contractor for the Scheme, as defined under the Construction (Design and Management) Regulations 2015 (CDM 2015)) will include the AMS details within the Construction Environmental Management Plan (CEMP) and update this information during the construction phase of the Scheme.
- 4.6. The tree survey schedules within Appendix B of this AIA cover all the trees recorded as part of this assessment in line with the BS5837:2012 guidance. A column has been included to indicate the impact of the works.
- 4.7. Entries in the impact column include removal (highlighted as red); part removal (abbreviated as PRG and highlighted as orange); retained (highlighted as green); coppiced (highlighted as blue); and translocated (highlighted as purple). Where the trees fall outside the Scheme boundary, the default entry is retained.
- 4.8. In some cases, trees have been identified for coppicing instead of complete removal. The trees/shrubs will be cut to ground level and stumps left in situ to regenerate. The trees/shrubs identified for coppicing are referenced in the survey schedule and on the TPPs. Trees have also been identified for translocation where deemed appropriate by the arboriculturist. The method of translocation is discussed further in section 5 of this report.

Root protection areas

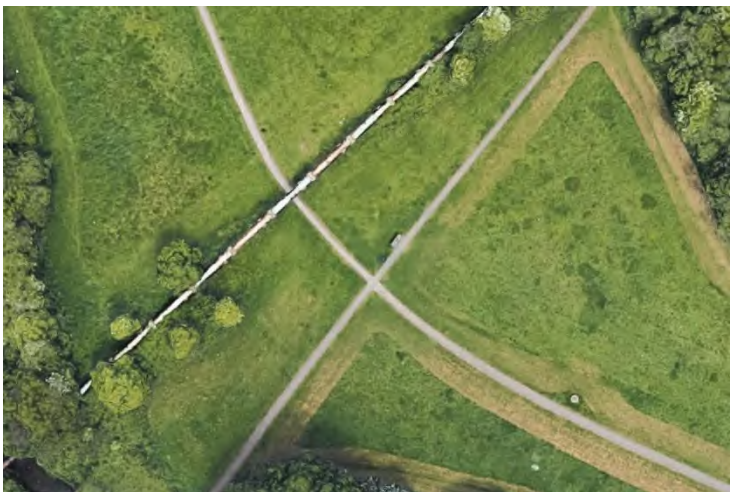
- 4.9. The root protection area (RPA), as defined in the BS5837:2012, is the minimum area around a tree deemed to contain sufficient roots and rooting volume to maintain the tree's viability, and where the protection of the roots and soil structure is treated as a priority. This area should be protected from disturbance "in order to avoid unacceptable damage to the tree as a result of severance or asphyxiation of the root system."
- 4.10. The recommended minimum area (m²) to avoid potentially harmful disturbance has been calculated and entered into the tree schedules (see Appendix B of this AIA) for all trees. The RPA for each individual tree has been illustrated on the TPPs as a circle centred on the tree's stem, while the RPAs of the tree groups and woodlands have been illustrated as an offset from the canopy extents, unless trees have specifically been recorded within the groups.
- 4.11. The calculation of the RPA does not consider existing site conditions that could affect the morphology of the tree roots, and 'modifications to the shape of the RPA' (para 4.6.2; BS5837:2012) can be undertaken through arboricultural assessment. However, as part of this assessment no modifications have been undertaken. Where existing ditches or highway infrastructure are located the spread of the tree roots is likely to be highly modified.
- 4.12. The veteran tree T083 has been subjected to a root mapping exercise using impulse technology, the resulting mapped root area has been used to define mitigation measures around this tree and to inform on its retention.

Scheme sites

- 4.13. The shaft sites are shown in detail on the TPPs and on drawing number HTR-ATK-ZZ-ZZ-GS-Z-0186. These are also covered in Table 4.1 below:

Table 4-1 – Shaft sites

Shaft number	Location	Site/Size	Site photo / google aerial or street view image
Shaft 1	Bedhampton E470679.9 N106471.5	Reception site 8m ID/9.4 OD	
Shaft 2	Recreation ground E470718.4 N106883.6	Launch site 11m ID/13m OD	
Shaft 3	Recreation ground – Hooks lane E470857.8 N107170.9	Reception site 5m ID/6m OD	

Shaft number	Location	Site/Size	Site photo / google aerial or street view image
Shaft 4	Leigh Park E471121.1 N107335.8	Launch site 11m ID/13m OD	
Emergency discharge chamber	Leigh Park E471006.6 N107537.9	Reception site 11m ID/13m OD	

Shaft number	Location	Site/Size	Site photo / google aerial or street view image
Shaft 5	Purbrook Way E471203.8 N107791.8	Launch site 11m ID/13m OD	
Shaft 6	Dunsbury Way E471278.1 N108161.1	Reception site 5m ID/6m OD	

Shaft number	Location	Site/Size	Site photo / google aerial or street view image
Shaft 7	High Lawn Way E471597.5 N108298.2	Launch site 11m ID/13m OD	
Shaft 8	Middle Park Way E471804.2 N108722.5	Reception 5m ID/6m OD	

- 4.14. The shaft sites have been positioned to avoid trees where possible. Access to the sites is illustrated on the TPPs and again have been positioned where possible to avoid trees.
- 4.15. The access off Middle Park Way is currently proposed as a ramped temporary road to shaft 8. This avoids having to impact a greater area of grassland from the country park and is subject to approval as part of this application. The ramped access would require the removal of trees, but these are limited and landscape reinstatement is proposed as part of the Scheme.

Arboricultural impacts – veteran trees and Ancient Woodland

- 4.16. We have worked with the Contractor to adapt the Scheme where necessary to ensure the retention of all recorded veteran trees.

- 4.17. Table 4-2 lists the veteran trees within the Scheme boundary and the impacts of the works. The suggested mitigation measures refer to construction exclusion zones and bespoke mitigation measures to protect the trees.
- 4.18. The construction exclusion zones may be defined as all the soft surfaces within the RPAs of trees that are to be retained outside of the works areas and the areas behind the tree protection fencing or site hoarding. These zones prohibit site operations without consultation with an arboriculturist include storage of plant, equipment or materials, vehicular or plant access, washing down of vehicles or machinery, handling, discharge or spillage of any substances, including cement washings, and actions likely to cause localised water-logging. Also, no mechanical digging, scraping or excavation, nor earthworks or changes in the finished ground levels other than those agreed by an arboriculturist.

Table 4-2 – Veteran trees impacts/mitigation

Tree ID	Tree species	Potential impact	Suggested mitigation
T075 (CP)	Common Oak	No direct impact. Tree outside of pipeline red line.	Construction exclusion zone shall be defined by rigid site hoarding. No further mitigation measures required.
T077 (CP)	Common Oak	No direct impact. Tree outside of pipeline red line.	Construction exclusion zone shall be defined by rigid site hoarding. No further mitigation measures required.
T082 (CP)	Common Oak	No direct impact. Tree outside of pipeline red line.	Construction exclusion zone shall be defined by rigid site hoarding. No further mitigation measures required.
T083 (CP)	Common Oak	No direct impact. Tree outside of pipeline red line.	Construction exclusion zone shall be defined by rigid site hoarding. No further mitigation measures required.
T023	Common Oak	Potential construction impact for pipeline corridor.	RPA and Crown extents will require protection measures, including the provision of barriers to define a construction exclusion zone between tree and works. The provision of rigid site hoarding shall provide this barrier.
T027	Common Oak	Potential construction impact for access to pipeline corridor.	Construction exclusion zone shall be defined by rigid site hoarding. No further mitigation measures required.
T036 T037	Sweet Chestnut Sweet Chestnut	Potential construction impact for access to pipeline corridor.	The preferred site access is currently directly off Middle Park Way adjacent to the shaft site. Therefore, no direct impact on these trees.
T083	Common Oak	Potential construction impact for pipeline corridor.	The shaft excavation would occupy less than 5% of the trees RPA and be positioned approx. 9m from the base of the tree. The root mapping extents are shown on the TPP as a yellow outline. This reveals that some root loss would be required, but this would be limited and far enough from the stem to be avoiding larger structural roots. Given the strong vitality of the tree and the large extent of rooting area from the tree

Tree ID	Tree species	Potential impact	Suggested mitigation
			these works should not impact on its longevity. The following mitigation measures would be required to install the shaft site; the top 1m of soils for the shaft site would be removed by hand under arboricultural supervision and any revealed roots pruned to the extents of the shaft or relocated if suitably pliable. The remaining rooting area would be protected via ground protection measures and temporary fencing where the ground protection ceases. On completion of the works ground improvement measures around the tree would be undertaken to mitigate for any stresses from the works, this is to include decompaction operations and the use of a biochar product to improve soil porosity.
T128	Common Oak	No direct impact. Tree outside of pipeline red line.	Construction exclusion zone shall be defined by rigid site hoarding. No further mitigation measures required.
T065	Apple (ATI ref 201615)	No direct impact.	Construction exclusion zone shall be defined by temporary protective barriers during works. No works proposed within soft surface RPA.
T189	Beech	Public right of way diversion within RPA.	Construction exclusion zone shall be defined by temporary protective barriers during works. Ground protection matting shall be installed to permit access to this area in order to construct the Public right of way diversion. Proposals for the new Public right of way to be to be no-dig construction approach. On completion of the works ground improvement measures around the tree would be undertaken to mitigate for any stresses from the works, this is to include decompaction operations and the use of a biochar product to improve soil porosity

- 4.19. No veteran trees will be removed to facilitate the scheme. Mitigation measures have been identified for those within the redline pipeline corridor and these measures shall be confirmed prior to construction. This aligns with local and national planning policy in the protection of veteran trees.
- 4.20. The pipeline is to be installed via micro-tunnelling where it passes beneath the Great Copse Ancient & Semi-Natural Woodland. This means the trees within the Ancient Woodland will not be impacted upon by the Scheme. Shaft site 7 is located outside the Ancient Woodland extents and the works in this location shall be contained by site hoarding, preventing any direct impact to the ancient woodland adjacent.

Arboricultural impacts

4.21. Table 4-3 below reflects the current total of tree removals to facilitate the pipeline works.

Table 4-3 – Arboricultural impacts

Tree ID	BS Category Reference			
	Category A	Category B	Category C	Category U
GROUP (G)	n/a	1101m ²	2628m ²	n/a
TREE (T)	n/a	24 25	39	1
HEDGEROW (H)	n/a	n/a	6	n/a

- 4.22. These trees are currently either located within the footprint of the pipeline corridor or within areas required to facilitate the installation of the pipeline and accommodate plant movement and other construction activity. Most of the tree loss is moderate to low quality specimens. No BS Category A trees are proposed for removal to facilitate the Scheme. The tree loss is represented on the TPPs and is minimal in scale compared with the size of the Scheme.
- 4.23. Where trees are partly within the footprint of the works the Arboriculturists have used the percentage of RPA encroachment to determine whether a tree(s) could be retained, also based on existing site conditions that could have inhibited root development.
- 4.24. Where over approximately 20% of their RPAs are severed by the works the trees have been identified for removal. The 20% figure being referenced within BS5837:2012 for what is deemed potentially acceptable in terms of RPA infringement. But this is also dependant on existing site conditions, which have also been considered by the Arboriculturist.
- 4.25. The loss of trees is unavoidable and largely limited to the loss of trees being primarily moderate to low quality specimens as defined by their BS Categories. The impacts of the tree loss on ecological or landscape receptors are outlined in specialist documentation provided by these professional disciplines submitted as part of the ES.
- 4.26. ~~Fourteen~~ ^{Nineteen}² trees have been identified for translocation to facilitate the Scheme. These are young to semi-mature trees that are deemed appropriate for translocation by the arboriculturist. A further tree (T071) has been recommended for coppicing.
- 4.27. The use of micro-tunnelling is proposed for much of the pipeline, building it section-by-section via eight access shafts. Micro-tunnelling is a trenchless solution recognised within BS5837:2012 as an option to install underground utility apparatus in the RPAs of trees, as it can be installed at sufficient depths to pass beneath tree roots. This approach has enabled the retention of more trees than conventional open-cut trench solutions.
- 4.28. A tree's root system is surprisingly shallow, predominantly limited to the top 600mm of soil and is dominated by long, relatively small, lateral roots spreading out close to the soil surface (Biddle, 1998). It is uncommon for trees to have roots deeper than approximately 2m. This is because root growth is opportunistic, occurring where the soil environment can sustain it, which is why roots proliferate wherever they encounter favourable conditions. For this reason, they concentrate close to the soil surface where water, oxygen and nutrients are generally more readily available. Consequently, root numbers and size sharply decline at depth, including taproots that generally taper until they reach a depth of 0.5-1m, where they often divide into several smaller roots (Dobson, 1995). The deepest roots are usually found directly below, or near to, the trunk of the tree as a tap root, oblique lateral or sinker roots at average depths of typically 1-2m (Dobson, 1995). Observations of uprooted trees, especially those after the Great Storm 1987, have provided extensive data on the shape of the roots within the root plate. Survey results from the Task Force Trees after the 1987 storm showed that only 4% of the cases had root plates that exceeded 2.0m (Cutler et al, 1990).

² 7no. trees have been included in the assessment, planted by Hampshire County Council at two locations within the Site. This has resulted in 5 more translocations (no additional removals).

- 4.29. Where sections are installed via an open-cut trench the route has also been adapted where possible to retain trees. Where the route passes through or adjacent to trees then the Arboriculturists have used the percentage of RPA encroachment to determine whether a tree(s) could be retained.
- 4.30. The upgrading of the culverts has been overlaid onto the TPPs and informed the tree removals required to facilitate these works. The ability to retain trees as coppice stools should be explored as part of the culvert improvements where the tree species is able to regenerate from cut stumps, this is relevant for alders and willow specimens. Those trees that can be retained through coppicing (felling to ground level and retaining the stump) shall be confirmed prior to the construction stages of the Scheme.
- 4.31. The Public Right of Way diversion within Bedhampton requires the removal of trees to facilitate its construction and the new route. The surfacing will need to accord with a no-dig construction approach using a cellular confinement system to contain the sub-base material, with the surface course being a semi-permeable material to enable water and gaseous exchange to continue within the RPAs.

Arboricultural impacts – TPO trees and Conservation Area

- 4.32. There are TPO trees within the Scheme boundary. However, these will not be impacted upon by the Scheme due to micro-tunnelling being used at these locations.
- 4.33. The Scheme will impact trees that are within the Sir George Staunton Conservation Area and an extensive landscape reinstatement scheme is proposed to mitigate tree losses. The tree removals are illustrated on the TPPs, and notably do not include the mature prominent oak trees in the country park setting. Those trees that are not directly within the earthworks have been identified for retention where possible via mitigation measures. The younger oak specimens impacted upon in the Country Park have been identified on the TPPs for translocation where possible. The method of translocation could accord with the details in section 5 of this report, but the method of translocation will need to be confirmed with the contractor in agreement with the supervising Arboriculturist.
- 4.34. The Scheme will impact trees that are within the Old Bedhampton Conservation Area. These are located directly in the footprint of the proposals for the Public Right of Way diversion. As such there are no feasible mitigation measures to retain the trees. The removals include T191, 8no. trees from G192 and 180m² from G219. These are a mixture of low and moderate quality trees which are in areas not readily visible from wider views.

Preliminary management recommendations

- 4.35. The tree survey schedules (see Appendix B) show management recommendations for those trees which at the time of the survey were identified as requiring management intervention. These works are in response to hazards recorded during the tree survey.
- 4.36. The works are recommendations and tree owners and managers are advised to seek further guidance should a tree on their land require management outside of the Scheme.

5. Arboricultural Method Statement

General

- 5.1. The purpose of this Arboricultural Method Statement (AMS) section is to describe the tree protection measures required during the implementation of the Scheme in line with guidance from the British Standard BS5837:2012 'Trees in Relation to Design, Demolition and Construction – Recommendations'.
- 5.2. Ward & Burke Ltd, the appointed Principal Contractor, are to include the AMS details into their CEMP, which will form a live document and be updated during the construction phase of the Scheme. Any updates to the information below are to be agreed with the supervising Arboriculturist.
- 5.3. This section describes the tree protection measures required during the construction stages. It sets out the following information:
- Requirements and information for pre-commencement briefings
 - The roles and responsibilities associated with the delivery of the protection measures, control and communication
 - Mitigation measures to be recorded and implemented
 - Review and monitoring mechanisms.
- 5.4. The Principal Contractor is to appoint an experienced Arboriculturist with a minimum of a level 4 qualification in arboriculture to provide an onsite supervisory role to ensure the measures identified within this report and captured within the OEMP/REAC (Appendix A2.1, Environment Statement, Volume 4) and live CEMP document are implemented during the construction works.

Pre-commencement operations and site briefings

- 5.5. The Principal Contractor is to consult with their appointed supervising Arboriculturist to review the trees impacted upon by the Scheme throughout the construction phase of the works to manage the impacts on trees. The impact column in the survey schedules in Appendix B and the red hatched areas and red crosses as illustrated on the TPPs are to be updated accordingly, where required.
- 5.6. Where trees previously identified for retention unavoidably need to be removed during construction phases, this information shall form part of the consultation process with the relevant stakeholders. The appointed Principal Contractor would need to ensure that such changes do not give rise to any materially new or materially different environmental effects in comparison with those reported in this AIA.

Work package plans and task briefing sheets

- 5.7. The requirements for tree protection measures shall be included within Work Package Plans (WPPs) and Task Briefing Sheets (TBSs) produced by the appointed Principal Contractor as part of the planning of construction activities. All pre-commencement briefings shall make sure all members of staff working or visiting the area of site being worked upon are aware of the individual responsibilities regarding trees and the tree protection measures required to be in place to continue construction.
- 5.8. In the approval of WPPs and TBSs the reviewer shall make sure any protection of trees has been considered within the area and seek confirmation with the Arboriculturist if further clarification is required.
- 5.9. The construction manager or suitable delegate shall attend pre-commencement site briefings, which will raise awareness with the relevant parties of the trees within the working extents and confirm the requirements for tree-related information to be included within induction material and daily briefings to members of staff working or visiting the Scheme site.
- 5.10. The briefings shall also confirm the following:
- The location of tree protective barriers
 - Tree works to facilitate that phase of the Scheme
 - Site specific mitigation measures

- Where/when arboricultural supervision will be required.

Contact details

- 5.11. Overseeing management of the Scheme will be directed by Portsmouth Water, the Applicant. They may delegate some site supervision roles and procure specialist consultants to supervise, monitor or check the appointed Principal Contractor's procedures for sensitive activities where required.
- 5.12. The appointed Principal Contractor shall confirm key roles and site contacts within the CEMP. The contacts list should include an Arboriculturist to support the construction phase of the Scheme.

Site supervision

- 5.13. The supervisory role shall be performed by a suitably qualified Arboriculturist. The frequency of these visits should align with key milestones identified in Table 5-1 below and shall be undertaken as required during the progression of the Scheme to enable an auditable succession of monitoring events for a review of the protection measures implemented for the trees.

Table 5-1 – Programme of site supervision

Programme	Arboriculturist or delegate	Supervision
Pre-commencement site meeting	Arboriculturist	a) Confirm location and specification of tree protective barriers b) Confirm tree works to be undertaken c) Confirm requirements for tree protection information to be included in induction details for the site d) Confirm requirements for reporting any tree related incidents e) Confirm ongoing arboricultural monitoring and contact details.
Setting out of protective barriers	Arboriculturist	a) Review location and specification of tree protective barriers b) Confirm any additional tree protection measure requirements c) Submit site monitoring pro forma to the PW Project Manager.
During operation as minimum every 8 weeks.	Arboriculturist	a) Review location and specification of tree protective barriers b) Assess condition of retained trees, specifically for any construction related damage c) Confirm any additional tree protection measure requirements d) Submit site monitoring pro forma to the PW Project Manager.
Post-construction	Arboriculturist	a) Inspect all retained trees to make sure they have not been damaged during the construction operations b) To instruct any remedial works that may be required should a tree defect be identified as a result of the construction operations.

- 5.14. On completion of each site visit a report or site note should be completed by the arboricultural specialist and shared with the Havant Borough Council Tree Officer as part of the quarterly

reporting identified in the Dual Pipeline CEMP (ref Pipeline B4 in the Appendix A REAC table) for agreement and sign off.

- 5.15. Where emergency matters arise regarding trees, e.g. unexpected access required within construction exclusion zones or damage to retained trees, then an Arboriculturist is to co-ordinate a visit to the site in person or delegate their powers to a suitably qualified person.
- 5.16. Any variations or incidents related to trees shall be reported in writing to the Applicant, or the Project Management Consultant appointed by the Applicant. Details of the variation(s) or incident(s) shall incorporate photographic evidence and site note(s) as appropriate. Suitable remedial measures, including potentially the provision of new planting where deemed appropriate.

Tree Protection Plans (TPPs)

- 5.17. The TPPs (Appendix D) include indicative locations of protection fencing and ground protection matting likely to be required during the construction stage. Confirmation on the positioning would need to be confirmed by the appointed Principal Contractor as part of the final AMS.
- 5.18. The protected areas once installed shall not be moved or altered without approval by the Arboriculturist and, where necessary following consultation with the local planning authority.

Construction Exclusion Zone (CEZ)

- 5.19. The CEZs can be defined as all the soft surfaces within the RPAs of retained trees outside of the works areas and the areas behind the tree protection fencing or site hoarding.
- 5.20. Site operations not permitted in the CEZs without consultation with an Arboriculturist include storage of plant, equipment or materials, vehicular or plant access, washing down of vehicles or machinery, handling, discharge or spillage of any substances, including cement washings, and actions likely to cause localised waterlogging. No mechanical digging, scraping or excavation shall be permitted in the CEZs, nor earthworks or changes in the finished ground levels other than those agreed by an Arboriculturist.

Hand excavations within RPAs

- 5.21. Hand excavations within the RPAs of trees shall be specified as a last resort and following a review of the works in the location to make certain there are no other design solutions to avoid the RPA of retained trees.
- 5.22. Where hand excavations are specified, this would broadly adhere to the following:
 - a) The area to receive excavations is to be clearly marked out on site and agreed with the Arboriculturist.
 - b) Hand tools are to be used, with all spoil to be positioned outside of the RPA of the tree.
 - c) Small plant maybe permitted in consultation with the Arboriculturist, or the use of a vacuum excavator positioned outside of the RPA of the trees to be retained.
 - d) The use of an air-spade rig to loosen the sub-base material can be instructed by supervising Arboriculturist if required to loosen clay based material or similar.
 - e) Once excavated if tree roots are located these are to be moved if sufficiently pliable or pruned only as a last resort on the advice of the Arboriculturist.
 - f) Tree roots to be retained where feasible through packing around with sharp sand.

Root pruning

- 5.23. Where tree roots have to, as a last resort, be severed, the pruning points would need to be agreed with the supervising Arboriculturist and pruning undertaken using a sharp pair of secateurs or a hand saw, or if pliable moved out of the construction profile and re-covered within topsoil.

In situ concrete

- 5.24. It should be noted that due to the highly alkaline and toxic leachate produced during the curing of wet concrete, concrete should not be poured within trees' RPAs unless an impermeable liner has

been installed to contain the concrete (for example, where new fence posts or kerbs are to be installed).

Tree protective barriers

- 5.25. The locations of any protective fencing would need to be agreed prior to construction. The fencing should be erected before the commencement of works and kept in place throughout the duration of the works.
- 5.26. The protective barriers could comprise 2m tall welded mesh panels on rubber or concrete feet. The panels are to be joined together using a minimum of two anti-tamper couplers, installed so they can only be removed from inside the fence. The distance between the fence couplers is to be at least 1m and is to be uniform throughout the fence; the panels are to be supported by inner side stabiliser struts attached to a base plate secured on a block tray. See Figure 5-1 below.

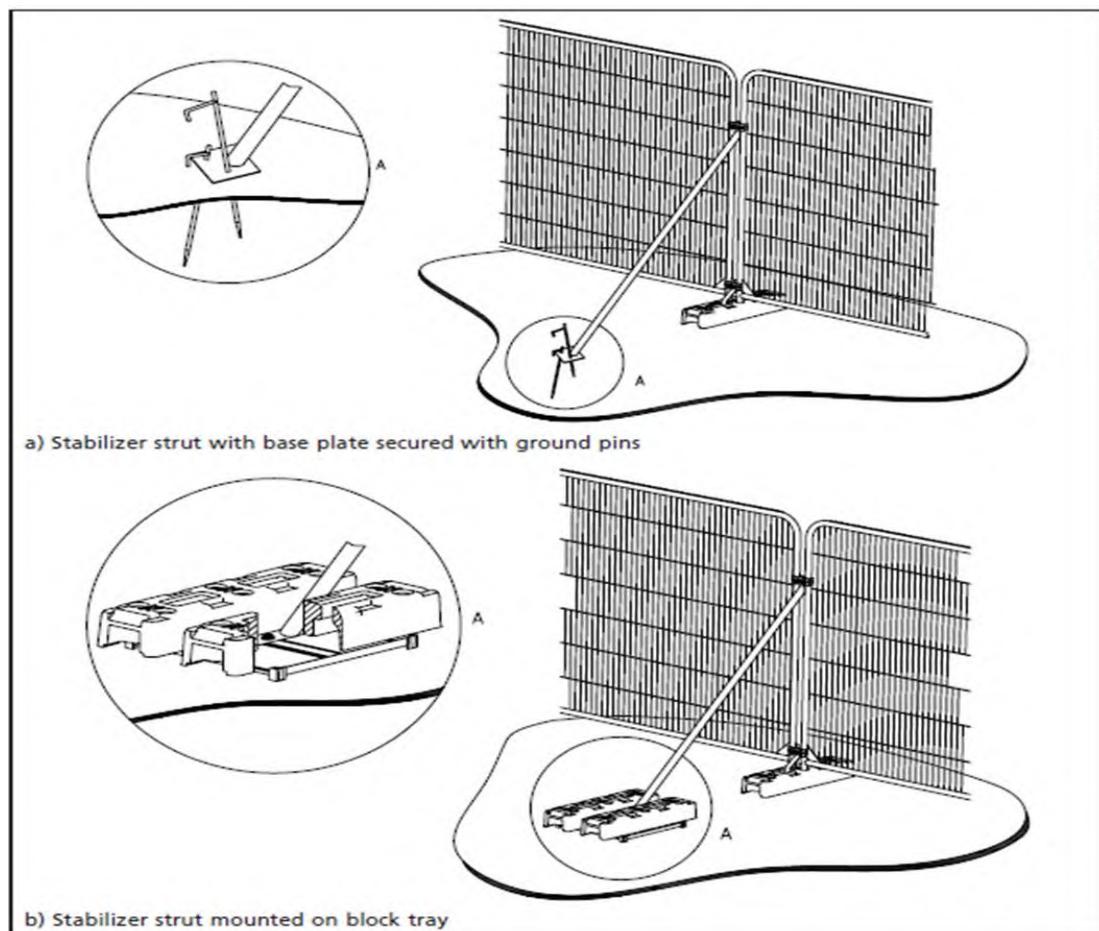


Figure 5-1 - Tree protection fencing

- 5.27. The protected areas shall be seen as sacrosanct and once installed shall not be moved or altered without approval by an Arboriculturist.
- 5.28. Where site hoarding is proposed this will provide the necessary barriers for retained trees in some locations. The site hoarding is to comprise plywood panel boards fixed to wooden posts or Heras-type fencing subject to site risk assessments. The footings for the supporting posts are to be excavated by hand within RPAs and under arboricultural supervision, unless agreed otherwise with the supervising Arboriculturist.

Ground protection matting

- 5.29. The locations for ground protection matting have been illustrated on the TPPs, any further ground protection areas would need to be agreed prior to commencement of construction in coordination with a contractor.
- 5.30. Where ground protection matting is specified to protect tree roots and to minimise ground compaction within RPAs, notably in the root zone area of the veteran tree T083, this shall be of a sufficient specification to withstand the loading of the plant without compacting the underlying soils.

Compound areas

- 5.31. The locations of site accommodation, temporary buildings and areas used for storage of materials are within the shaft sites which have been illustrated on the TPPs. These have been positioned outside of RPAs where possible, or temporary ground protection measures specified to permit access/compound without compacting soils in the RPAs of retained trees.

Tree translocation

- 5.32. Trees identified for potential translocation are shown on the TPPs, these are within Staunton Country Park and the recreation ground. The final trees for translocation should be agreed prior to any tree felling. The approach to tree translocation shall be confirmed with the contractor, but should broadly follow the below method:
- Mark out a 2m square from the base of the stem with white marker paint.
 - Using a trenching bucket excavate the sides of the square to 1m in depth – noting the presence of any tree roots. Arboricultural supervision required.
 - Using a 2m wide ditching bucket grade out from one side of the tree. Then readjust the ditching bucket to gradually scoop underneath the tree, doing this in stages either side of the tree's stem. Until the rootball is loose, then perform a lifting operation using straps and coupling equipment of sufficient size to accommodate likely load.
 - Move tree to agreed location. Ensuring location has sufficient planting pit excavated to accommodate the rootball.
 - Place the rootball of the transplant into the pit and set the level of the tree flush with the ground level.
 - Firm in the backfill around the tree using the grading bucket to push down onto the rootball.

Tree works

- 5.33. All tree works are to be undertaken in line with current recommendations in accordance with BS3998:2010 Tree Work – Recommendations and comply with the current Arboriculture and Forestry Advisory Group (AFAG) or applicable Forestry Industry Safety Accord (FISA) advice published by the Health and Safety Executive (HSE) or FISA.
- 5.34. Tree works are to be planned to ensure protection of people, property and wildlife. Mitigation commitments in regard to protected species, including bats and nesting birds are included in the REAC. If the works are to be undertaken during the bird nesting season, then advice is to be sought from the ECoW prior to undertaking tree works.
- 5.35. The trees to be removed or worked upon for facilitation, such as pruning, shall be clearly marked by the supervising Arboriculturist prior to any tree works commencing on site. These works are to be agreed with the supervising Arboriculturist, and ECoW where required. The method of removal shall be informed by the site and ecological constraints.
- 5.36. The tree works contractor shall provide access routes and loading bay locations for approval by the main contractor. These shall take into account the retention of trees and following existing access tracks or hard surfaces to try and reduce tree removals. The tree works contractor will have to submit a risk assessment and method statement for review by the Appointed Principal Contractor or Arboriculturist prior to commencing works on Site.

Tree works schedule

- 5.37. All current trees and areas of trees for removal are illustrated on the TPPs and detailed within the survey schedule. These are to be reviewed as part of the construction phase of the Scheme and inform updates to the CEMP that is submitted with this planning application.
- 5.38. The method of removal shall be informed by the site constraints.
- 5.39. The requirements for facilitation pruning operations are to be confirmed prior to construction and covered within the pre-commencement site meetings for each phase of the works.
- 5.40. The ability to retain further trees shall be kept under review as part of construction planning.

Appendices



Appendix A. Key & British Standard 5837:2012 Survey Table

A.1. Survey key

Tree No: Sequential reference number given to the tree or group of trees as shown on the tree survey drawings.

Species: This is the common name given to the tree. The botanical name is sometimes given.

Height (Ht.): tree height from the base of the tree to its full stem height, measured in metres (m). Measurements are taken to the nearest half metre.

Stem diameter (mm): measured in accordance with Figure A1 below. Measurements are rounded to the nearest 10mm.

Branch spread (m): measurement of crown spread to the four cardinal points; if the crown is balanced a single measurement is given. Crown spread plotted on the tree survey drawings. Measurements are taken to the nearest half metre.

1st significant branch and direction of growth (m): measurement of the height of the first significant branch above ground level, given in metres and direction of growth e. g. 2. 4-N

Canopy height (m): height of the canopy above ground level. Measurements are taken to the nearest half metre.

Life stage: The following abbreviations are used:

Y = Young trees <1/5 life expectancy.

SM = Semi-Mature trees 1/5 – 2/5 life expectancy.

EM = Early Mature trees 2/5 – 3/5 life expectancy.

M = Mature trees 3/5 – 4/5 life expectancy

OM= Over-Mature trees >4/5 life expectancy

Vitality: Good, fair, poor or dead

Good – a tree with little or no obvious physiological defects; leaf density and colour is typical for the species, bud, flower and fruit production are good and there are no signs of dieback at any point throughout the crown.

Fair – a tree with moderate physiological defects; leaf density is less than typical for the species, leaf cover is chlorotic, bud, flower or fruit production are deficient, there are signs of minor dieback within the crown, there is a moderate degree of deadwood within the crown.

Poor – a tree with major or multiple physiological defects; evidence of extensive crown thinning, bud, flower or fruit production is poor or missing, there are signs of advanced dieback throughout the crown, there is extensive or major deadwood throughout the crown.

Dead – a tree that has died due to either old age, drought, disease, pest infestation, physical damage to the main stem or rooting system, or a combination of these factors.

General observations, particularly of structural and/or physiological condition: e. g. observations of any decay and physical defect.

Preliminary management recommendations: any identified preliminary management to rectify defects recorded in general observations. These may include the need for further detailed inspection, or works to address immediate hazard to life or property.

Estimated remaining contribution, in years:

<10

10+

20+

40+

Category grading: As per BS 5837:2012 chart in accordance with Figure A2 below.

A – Illustrated as light green (RGB code 000-255-000)

B – Illustrated as mid blue (RGB code 000-000-255)

C – Illustrated as grey (RGB code 091-091-091)

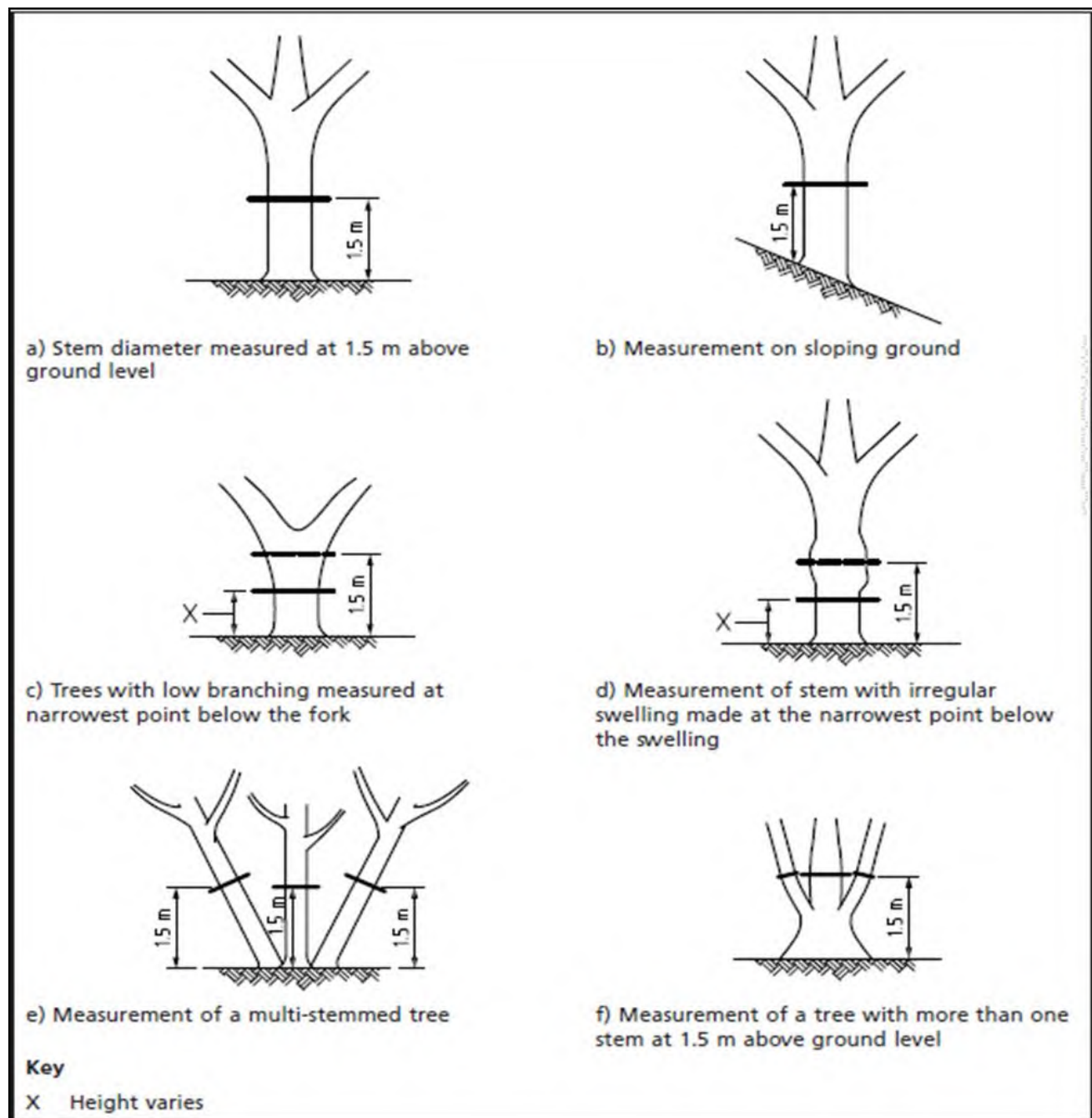
U – Illustrated as dark red (RGB code 127-000-000)

Root Protection Area (m²): plotted around each of the category A, B and C trees on relevant drawings, illustrating the minimum area around a tree deemed to contain sufficient roots and rooting volume to maintain the tree's viability. The protection of the roots and soil structure is treated as of paramount importance.

Impact – Retain (green hatch), Part remove (orange hatch) or Remove (red hatch) or translocate (purple hatch) or coppice (blue hatch)

A.2. Measuring table

Measurement of tree stems dependant on tree form.



A.3. BS 5837:2012 cascade chart

Cascade chart for tree quality assessment from BS 5837:2012

Table 1 Cascade chart for tree quality assessment

Category and definition	Criteria (including subcategories where appropriate)			Identification on plan
Trees unsuitable for retention (see Note)				
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 (e.g. 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 <i>NOTE Category U trees can have existing or potential conservation value which it might be desirable to preserve; see 4.5.7.</i>			See Table 2
	1 Mainly arboricultural qualities	2 Mainly landscape qualities	3 Mainly cultural values, including conservation	
Trees to be considered for retention				
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)	See Table 2
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 remediable 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 value	See Table 2
Category C Trees of low quality with an estimated remaining life expectancy of at least 10 years, or young trees with a stem diameter below 150 mm	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 only temporary/transient landscape benefits	Trees with no material conservation or other cultural value	See Table 2

Appendix B. Tree Survey Schedule

Tree ID	Species	Height (m)	Stem Dia (mm)	Branch sp'd N (m)	Branch sp'd E (m)	Branch sp'd S (m)	Branch sp'd W (m)	1st significant branch ht (m)	Canopy height (m)	Life Stage	Vitality	General observations	Preliminary management recommendations	Est'd Remaining Contribution (Yrs)	Cat Grading	Remove/Part Remove/Retain	Quantities for removal	RPA Radius (m)
T069 (CP)	Common Oak	18	1050	9	3	8	9.0	4-SW	3	M	Good	Crown suppression to east. Storm damage recorded in crown. Frayed wounds remaining. Occasional small to moderate diameter dead wood in lower and middle crown. Basal cavity to north west. Developing heartwood decay visible.	No works presently required	40+	A1/2	Retain		12.6
T070 (CP)	Common Oak	24	1100	10	11	11	8.0	4-E	3	M	Good	Prominent tree given large size. Habitat hole in main stem to north at 1.2m. Revealing developing heartwood decay. Further cavities in old branch wound to south at 4&6m. Storm damage recorded in crown, frayed branch wounds remaining. Including desiccated white rot.	No works presently required.	40+	A1/2	Retain		13.2
G071 (CP)	Blackthorn, oak	10	200	3	3	3	3.0	N/A	0	Y to SM	Fair to good	Blackthorn scrub dominates with intermittent standard young oak trees. Mutually suppressed crowns. Scrub cut back in places for new fence line.	No works presently required	20+	B2	PRG	136m2	2.4
G071A (CP)	Common Oak	10	280	4	4	4	4.0	N/A	1	Y	Good	Part of G071.	No works presently required	20+	B2	Retain		3.4
G071B (CP)	Common Oak	10	170	3	3	3	3.0	N/A	1	Y	Good	Part of G071.	No works presently required	20+	B2	Retain		2.0
G071C (CP)	Common Oak	10	220	3	3	3	3.0	N/A	1	Y	Good	Part of G071.	No works presently required	20+	B2	Retain		2.6
G071D (CP)	Common Oak	10	200	3	3	3	3.0	N/A	1	Y	Good	Part of G071.	No works presently required	20+	B2	Retain		2.4
G071E (CP)	Common Oak	10	180	3	3	3	3.0	N/A	1	Y	Good	Part of G071.	No works presently required	20+	B2	Retain		2.2
G071F (CP)	Common Oak	10	140	2.5	2.5	2.5	2.5	N/A	1	Y	Good	Part of G071.	No works presently required	20+	B2	Retain		1.7
T072 (CP)	Common Oak	18	740	6	2	6	6.0	3-W	3	M	Fair	Storm damage recorded in crown. Old frayed wounds, and pruning wounds present. Loss of apical dominance. Desiccated white rot present at wounds. Crown suppression to east.	No works presently required	20+	B2	Retain		8.9
T073 (CP)	Common Oak	22	1100	6	9	11	6.0	5-S	4	M	Fair to good	Basal cavity to north. Section of fore damage. Developing heartwood decay, and stem hollowing. Evidence of storm damage recorded within crown. Frayed wounds. Occasional small to moderate diameter dead wood throughout crown. Fistulina hepatic at basal cavity.	No works presently required	40+	A1/2	Retain		13.2
T074 (CP)	Common Oak	20	1000	8	6	8	5.0	6-E	5	M	Good	Growing on east bank of brook. Curved main stem. Occasional small to moderate diameter dead wood within middle crown. Occluding wounds on main stem.	No works presently required	40+	A2	Retain		12.0
T075 (CP)	Common Oak	19	1300	14	5	8	12.0	4-N	2	Vet	Good	Large stem circumference for species in locality. Desiccated white rot present on old wound to east side of main stem. Storm damage recorded within crown, frayed wounds remaining and desiccated white rot present. Potential for developing heartwood decay. Crown break at approximately 3m. Pronounced northern scaffold branch.	No works presently required	40+	A1/2/3	Retain		15.6
G076 (CP)	Poplar, oak, blackthorn, hawthorn, elm	12	200	3	3	3	3.0	N/A	0	Y to Sm	Good	Informal group. Predominantly self sown. Dead trees in places. Dense group. Bases not accessible.	No works presently required	10+	C2	Retain		2.4
T077 (CP)	Common Oak	20	1300	11	9	8	9.0	4-NE	3	Vet	Fair to good	Large stem circumference. Storm damage recorded in lower and middle crown. Large diameter frayed wounds remaining. Upper crown still full, limited sign of retrenchment due to advanced age. Developing heartwood decay in old branch wounds.	No works presently required	40+	A1/2/3	Retain		15.6

Tree ID	Species	Height (m)	Stem Dia (mm)	Branch sp'd N (m)	Branch sp'd E (m)	Branch sp'd S (m)	Branch sp'd W (m)	1st significant branch ht (m)	Canopy height (m)	Life Stage	Vitality	General observations	Preliminary management recommendations	Est'd Remaining Contribution (Yrs)	Cat Grading	Remove/Part Remove/Retain	Quantities for removal	RPA Radius (m)
T078 (CP)	Common Oak	18	1050	7	8	9	8.0	3-E	3	M	Good	Area of saturated ground in root zone to north. Cavity on main stem at 1m to west. Revealing desiccated white rot. Saprophytic fungi present. Large diameter dead wood in lower crown to west. Desiccated in appearance.	No works presently required	40+	A1/2	Retain		12.6
T079 (CP)	Common Oak	19	1080	6	11	10	5.0	3-E	2	M	Good	Co-dominant stems from approximately 7m, union appears sound. Potential historic storm damage within upper crown. Acute angles on some branches. Crown dominant to east and south. Slight lean on main stem. Frayed wounds in upper crown.	No works presently required	40+	A1/2	Retain		13.0
T080 (CP)	Common Oak	16	900	6	7	7	7.0	4-S	3	M	Fair to poor	Crown in retrenchment. Extensive dieback and large diameter dead wood throughout crown. Desiccated white rot visible at large diameter wound on main stem at 1m. Developing heartwood decay. Live growth predominantly epicormic in habit. Basal cavity to south. Black exudates on main stem to east.	Reduce dead wood to stubs.	40+	C3	Retain		10.8
G081A (CP)	Common Oak	8	150	3	3	3	3.0	N/A	1.5	Y	Good	Intermittent young oak growing within predominantly hawthorn and blackthorn scrub. Potential self sown stock from veteran oak.	No works presently required	20+	C2	Retain		1.8
G081B (CP)	Common Oak	8	150	3	3	3	3.0	N/A	1.5	Y	Good	Part of G081.	No works presently required	20+	C2	Retain		1.8
G081C (CP)	Common Oak	8	150	3	3	3	3.0	N/A	1.5	Y	Good	Part of G081.	No works presently required	20+	C2	Retain		1.8
G081D (CP)	Common Oak	8	210	4	4	4	4.0	N/A	1.5	Y	Good	Part of G081.	No works presently required	20+	C2	Retain		2.5
G081E (CP)	Common Oak	8	200	3	3	3	3.0	N/A	1.5	Y	Good	Part of G081.	No works presently required	20+	C2	Retain		2.4
G081F (CP)	Common Oak	8	200	4	4	4	4.0	N/A	1.5	Y	Good	Part of G081.	No works presently required	20+	C2	Retain		2.4
G081G (CP)	Hawthorn	4	150	3.5	3.5	3.5	3.5	N/A	1.5	Y	Good	Part of G081.	No works presently required	20+	C2	Retain		1.8
G081H (CP)	Common Oak	6	200;110	4	4	4	4.0	N/A	1.5	Y	Good	Part of G081.	No works presently required	20+	C2	Retain		2.7
G081I (CP)	Common Oak	6	150	3	3	3	3.0	N/A	1.5	Y	Good	Part of G081.	No works presently required	20+	C2	Retain		1.8
G081J (CP)	Common Oak	6	180	0	2	5	5.0	N/A	1.5	Y	Good	Part of G081.	No works presently required	20+	C2	Retain		2.2
G081K (CP)	Common Oak	6	200	4	4	4	4.0	N/A	1.5	Y	Good	Part of G081.	No works presently required	20+	C2	Retain		2.4
G081L (CP)	Common Oak	6	330	5	5	5	1.5	N/A	1.5	Y	Good	Part of G081.	No works presently required	20+	C2	Retain		4.0
G081M (CP)	Common Oak	6	330	5	3	5	5.0	N/A	1.5	Y	Good	Part of G081.	No works presently required	20+	C2	Retain		4.0
T082 (CP)	Common Oak	5	1400	12	12	12	16.0	3-W	3	Vet	Good	Large stem circumference for species in locality. Vast crown, dominant to west with pronounced scaffold branch. Evidence of storm damage recorded in lower and middle crown. Sub lateral branches now assuming dominance. Pronounced buttress roots. Likely to be developing heartwood decay, cavity in old branch wound in main stem. Occasional small to large diameter dead wood in lower and middle crown.	No works presently required	40+	A1/2/3	Retain		16.8

Tree ID	Species	Height (m)	Stem Dia (mm)	Branch sp'd N (m)	Branch sp'd E (m)	Branch sp'd S (m)	Branch sp'd W (m)	1st significant branch ht (m)	Canopy height (m)	Life Stage	Vitality	General observations	Preliminary management recommendations	Est'd Remaining Contribution (Yrs)	Cat Grading	Remove/Part Remove/Retain	Quantities for removal	RPA Radius (m)
T083 (CP)	Common Oak	19	1250	10	10	9	7.0	6-E	3	Vet	Good	Large stem circumference. Basal cavity on south side of main stem revealing desiccated white rot and developing heartwood decay. Crown break at approximately 4m into multi stems suggesting historic pollard. Evidence of storm damage recorded within crown. Large diameter frayed wounds with developing heartwood decay.	No works presently required	40+	A1/2/3	Retain		15.0
T084 (CP)	Common Oak	12	530	6	4	6	6.0	3-NW	3	SM	Good	Brook approximately 1.8m north. Crown break at 1.8m into multi stems, suggesting past pollard.	No works presently required	20+	B2	Retain		6.4
T085 (CP)	Goat Willow	10	350	6	5	7	6.0	0-E	0	EM	Fair	Previously co-dominant stems from approximately 1m, east stem collapsed. Large diameter wound remaining.	No works presently required	10+	C2	Retain		4.2
T086 (CP)	Oak	20	1120	15	12	12	12	2.5	1.5	M	Good	Lifebelt' swelling on south side of stem; regulation quantities of storm damage, branch tears, deadwood; pockets of decay associated with branch failure points.	Remove larger deadwood only if adjacent to proposed works	40+	A2	Retain		13.4
G086 (CP)	Oak	9	360	5.5	5.5	5.5	5.5	1.5	1.5	SM-EM	Good	Row of trees on verge between pavement and park boundary fence; lower branches cut back on pavement side	No works required at time of survey	40+	B2	Remove	x2no.	4.3
G087 (CP)	A group	9	200	2.5	2.5	2.5	2.5	N/A	0	SM to EM	Fair to poor	Growing on sloped bank. Dense ivy encroachment on stems.	No works presently required	10+	C2	PRG	111m2	2.4
G087A (CP)	Common Oak	14	370	6	7	5	6.0	2-E	1.8	Y to SM	Fair to good	Intermittent oak trees growing on sloped bank. Mutually suppressed crowns. Occasional small diameter dead wood in lower crowns.	No works presently required.	20+	B2	Retain		4.4
G087B (CP)	Common Oak	12	320	3	5	6	6.0	2	1	Y to SM	Fair to good	Part of G087.	No works presently required.	20+	B2	Retain		3.8
G087C (CP)	Common Oak	12	230	4	5	5	3.0	2	1	Y to SM	Fair to good	Part of G087.	No works presently required.	20+	B2	Retain		2.8
G087D (CP)	Common Oak	14	380	6	6	6	6.0	2	1	Y to SM	Fair to good	Part of G087.	No works presently required.	20+	B2	Retain		4.6
H088 (CP)	A Hedgerow	3.5	100	1	1	1	1	0	0	EM	Good	Managed hawthorn hedge at pavement side, maintained at 2m height; occasional young ash, elder; ivy	No works required at time of survey	10+	C2	Remove	6m	1.2
G089(CP)	Hawthorn	4.5	200	2.5	2.5	2.5	2.5	N/A	0	SM to EM	Fair to poor	Group of predominantly hawthorn. Growing on sloped bank. Dense ivy encroachment on stems. Extensive dieback in east tree.	No works presently required	10+	C2	PRG	58m2	2.4
G089E (CP)	Hawthorn	4.5	200	2.5	2.5	2.5	2.5	N/A	0	SM to EM	Fair	Part of G089	No works presently required	10+	C2	Retain		2.4
T091 (CP)	Goat Willow	6	300 + 300 + 300 + 300	10	10	10	10	0	0	M	Fair	Single specimen with limbs sprawling in characteristic starfish formation; some limbs collapsed, or with shear cracks, or failure at bark-included basal union.	Coppicing of collapsed and shear crack stems will be required if proposed works pass through crown	20+	B2	Retain		7.2
G001	Poplar, Hawthorn, Goat willow	7	220	3.5	3.5	3.5	3.5	1	0.5	SM	Good to fair	Thicket of thorn and goat willow surrounding large poplar recorded separately, with a handful of semi-mature oaks and other mixed broadleaf species; 1no 300mm diameter aspen leaning to south near southern edge of group; dimensions shown are indicative	No works required at time of survey	20+	C2	Retain		2.6
T002	Hybrid Black Poplar	22	1030	10	12	10	10.0	2.5-W	3	M	Good	Stem lean to east correcting in crown; multiple extending limbs in straggling crown; occasional branch tears; frequent deadwood branches and stubs to 150mm diameter	Remove larger deadwood if adjacent to proposed works	20+	B2	Retain		12.4
G003-A	Common Oak	7	280	4	4	4	4.0	1.5	1	SM	Good	Semi-mature open-grown oaks 'dotted' around parkland; this tree: outrider from G001	No works required at time of survey	20+	B2	Remove		3.4

Tree ID	Species	Height (m)	Stem Dia (mm)	Branch sp'd N (m)	Branch sp'd E (m)	Branch sp'd S (m)	Branch sp'd W (m)	1st significant branch ht (m)	Canopy height (m)	Life Stage	Vitality	General observations	Preliminary management recommendations	Est'd Remaining Contribution (Yrs)	Cat Grading	Remove/Part Remove/Retain	Quantities for removal	RPA Radius (m)
G003-B	Common Oak	5	260	3	3	3	3.0	1.5	1.5	SM	Good	See G003-A	No works required at time of survey	20+	B2	Remove		3.1
G003-C	Common Oak	5	150	2.5	2.5	2.5	2.5	1.5	1.5	SM	Good	See G003-A	No works required at time of survey	20+	C2	Remove		1.8
G003-D	Common Oak	6	260	4	4	4	4.0	1.5	1	SM	Good	See G003-A	No works required at time of survey	20+	B2	Retain		3.1
G003-E	Common Oak	6	170;150	3.5	3.5	3.5	3.5	1	1	SM	Good	Twinstem outrider from G019	No works required at time of survey	20+	B2	Translocation		2.7
G003-F	Common Oak	4	160	3.5	3.5	3.5	3.5	1.5	1.5	SM	Good	See G003-A	No works required at time of survey	20+	B2	Translocation		1.9
G003-G	Common Oak	6	240	3.5	3.5	3.5	3.5	1	1.5	SM	Good	See G003-A	No works required at time of survey	20+	B2	Remove		2.9
G003-H	Common Oak	7	240	4	5	4	4.0	1.5	1	SM	Good	See G003-A	No works required at time of survey	40+	B2	Retain		2.9
G003-I	Common Oak	7	310	5	5	5	5.0	1.5	1.5	SM	Good	See G003-A	No works required at time of survey	40+	B2	Retain		3.7
G003-J	Common Oak	7	150;180	2	2	2	2.0	1.5	1.5	SM	Good	Co-dominant stems from approximately 300mm. Included bark union.	No works required at time of survey	20+	B2	Retain		2.8
G003-K	Common Oak	7	150	2.5	2.5	2.5	2.5	1.5	1.5	SM	Good	See G003-A	No works required at time of survey	20+	C2	Retain		1.8
G003-L	Common Oak	7	180	2.5	2.5	2.5	2.5	1.5	1.5	SM	Good	Dense scrub around base.	No works required at time of survey	20+	C2	Retain		2.2
G003-M	Common Oak	7	240	3	3	3	3.0	1.5	1.5	SM	Good	See G003-A	No works required at time of survey	20+	B2	Retain		2.9
G003-N	Common Oak	7	200	3	3	3	3.0	1.5	1.5	SM	Good	See G003-A	No works required at time of survey	20+	C2	Retain		2.4
G003-O	Common Oak	7	200;200	4	3	4	4.0	1.5	1.5	SM	Good	See G003-A	No works required at time of survey	20+	C2	Remove		3.4
G003-P	Common Oak	7	200	2	2	2	2.0	1.5	1.5	SM	Good	See G003-A	No works required at time of survey	20+	C2	Remove		2.4
G003-Q	Common Oak	7	180	3	3	3	3.0	1.5	1.5	SM	Good	See G003-A	No works required at time of survey	20+	C2	Remove		2.2
G003	Common Oak									Y-SM	Good	Part of G003 group.	No works required at time of survey	20+	C3	Remove	x8no.	
T004	Common Oak	18	1100	6	9	9	9.0	4-W	2	M	Good	Prominent tree given size and scale. Broad crown. Crown break at 4m. Bark scuffed on buttress root to south east.	No works presently required	40+	A2	Retain		13.2
T005	Common Oak	17	1020	9	9	9	8.0	6-W	1.5	M	Good	Prominent tree given size and scale. Basal cavity to east and south. Potential heartwood decay. Frayed storm damaged branch in crown to north east. Old branch wound in middle crown to south. Dessicated white rot visible.	No works presently required	40+	A2	Retain		12.2
T006	Common Oak	18	1100	9	7	7	12.0	3-W	1.5	M	Fair	Prominent tree given size and scale. Pronounced buttress roots. Crown dominant to west. Suppressed to east. Occasional small to moderate diameter dead wood in middle crown. Scrub cleared around base.	No works presently required	40+	A2	Retain		13.2
T007	Red Horse Chestnut	8	400	4	4	3	3.0	2-W	1.5	SM	Fair	Crown suppressed. Unoccluded wounds on main stem. Soft rot visible to south. Old branch wounds in crown. Decay pockets.	No works presently required	10+	C2	Retain		4.8
T008	Common Oak	16	700	3	6	9	5.0	4-S	5	EM	Fair	Crown suppressed to north. Dead ivy on main stem. Slight lean on main stem.	No works presently required	20+	B2	Retain		8.4
T009	Common Oak	12	720	7	7	7	7.0	3-SW	1.5	EM	Fair to good	Loss of apical stem. Secondary Brahe's assuming dominance. Exposed desiccated white rot visible at failure point. Hungup dead branch to north. Old wound at base to north east. Woodpecker hole in mainstem to east.	No works presently required	20+	B3	Retain		8.6

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T010	Common Oak	14	930	10	6.5	8	4.0	3-S	3	M	Fair to good	Area of pronounced reaction wood on main stem above basal flare. Pockets of dessicated white rot visible. Historic wounds. Moderate diameter deadwood in lower crown to south. Further occasional dead branches in middle crown.	No works presently required	40+	A2	Retain		11.2
T011	Common Oak	16	830	6	7	7	7.0	4-SW	3	M	Fair to good	Crown break at 4m. Goblet shaped crown. Occasional small to moderate diameter dead wood in lower and middle crown.	No works presently required	40+	A2	Retain		10.0
T012	Common Oak	10	800	4	4	3	1.0	N/A	0	OM	Dead	Standing dead tree. Extensive dessicated white rot present. Saprophytic habitat value.	No works presently required	10+	C3	Remove		9.6
G013-A	Hybrid Black Poplar	24	1180	8	8	8	8.0	8	8	M-OM	Poor	6no large trees growing close together: 3no poplars dying slowly, 2no small-leaved elms, of which one has good vitality; 1no dying ash; largest poplar hollow-stemmed, large basal cavity opening to west; abundant very large deadwood - live growth mostly in upper crowns	Large-scale reduction works will be required if trees are to be retained within close proximity to new development	10+	C3	Retain		14.2
G013-B	Hybrid Black Poplar	24	1000	7	7	7	7.0	2	2	M-OM	Poor	See G013-A	See G013-A	10+	C3	Retain		12.0
G013-C	Hybrid Black Poplar	24	1000	7	7	7	7.0	2	2	M-OM	Poor	See G013-A	See G013-A	10+	C3	Retain		12.0
G013-D	Elm	12	470	5	5	5	5.0	2	2	M	Fair	See G013-A	See G013-A	10+	C2	Retain		5.6
G013-E	Elm	12	460	5	5	5	5.0	2	2	M	Fair	See G013-A	See G013-A	10+	C2	Retain		5.5
G013-F	Ash	14	470	5	5	5	5.0	2	2	M-OM	Poor	See G013-A	See G013-A	10+	C3	Retain		5.6
G014	A Group	5	150	2	2	2	2.0	2	2	Y	Fair	Young elm with some birch and infrequent oak, goat willow, being managed as safety buffer around G013; many trees coppiced, with coppice cuttings piled around edge of group; some low-vitality specimens among elm	No works required at time of survey	10+	C2	Retain		1.8
T015	Common Oak	15	640	7.5	7	7	7.0	5-W	4	EM	Fair	Growing within centre of young oak group. Broad crown. Light ivy encroachment on main stem. Occasional small to moderate diameter dead wood in middle crown.	No works presently required	40+	B2	Retain		7.7
T016	Common Oak	16	420	6	1	3	7.0	2-W	2	EM	Fair	Crown suppressed to south and east. Growing with centre of young oak group. Occasional small diameter dead wood in lower crown.	No works presently required	20+	B2	Retain		5.0
G017	Common Oak	5	200	3	3	3	3.0	N/A	0	Y	Good	Group of trees, assume planted. Densely clustered on outer edge of circular layout.	No works presently required	20+	B2	Retain		2.4
G018	Mixed broadleaf vegetation	7	150	2	2	2	2.0	1.5	1.5	Y-SM	Fair to poor	Mixed broadleaf group of elm, thorn, goat willow with extensive coppicing and larger trees recorded individually; coppice cuttings piled around edge of group, which includes dead elm; dimensions shown are indicative B for individuals, C for wider group, which has 7H, 150 diameter, 2-2-2-2-1.5-1.5-YSM fair to poor	No works presently required	10+	C2	Retain		1.8
G018-A	Oak	9	350	7	7	3	1.0	1.5	1.5	EM	Good	See G018	No works presently required	20+	B2	Retain		4.2
G018-B	Field Maple	8	370	5	5	3	4.0	1.5	1.5	EM	Good	See G018	No works presently required	20+	B2	Retain		4.4
G018-C	Oak	9	370	6	5	4	6.0	2	1.5	EM	Good	See G018	No works presently required	20+	B2	Retain		4.4
G018-D	Oak	9	300	6	3	2	7.0	2	1.5	EM	Good	See G018	No works presently required	20+	B2	Retain		3.6
G018-E	Aspen	16	350	6	4	3	5.5	2	2	EM	Good	Bark-included union at principal fork	No works presently required	20+	C2	Retain		4.2
G018-F	Oak	13	590	8	8	9	6.0	2	2	EM-M	Good	See G018	No works presently required	40+	B2	Retain		7.1
G019	Group	7	180	2	2	2	2.0	1.5	1.5	SM	Good	Unmanaged cluster of trees surrounding large aspen G019-A; semi-mature oak and goat willow, suckering thorn; ivy on ground and climbing trees; dimensions shown are indicative	No works presently required	10+	C2	PRG	376m2	2.2

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G019-A	Aspen	24	500;450;400;300	12	12	12	12.0	2	1.5	M	Good	Multistem, mutual suppression of crowns of principal limbs; minimal deadwood or storm damage	No works presently required	20+	B2	Retain		10.1
G020A	Goat Willow	4	150;150;150;150;150	4	4	4	4.0	N/A	0	M	Fair	Multi stem trees from ground level. Suggesting last coppice. Occasional dead stem.	No works presently required	10+	C2	Retain		4.0
G020B	Goat Willow	5	150;150;150;150;150	5	5	5	5.0	N/A	1	M	Fair	Multi stem trees from ground level. Suggesting last coppice. Occasional dead stem.	No works presently required	10+	C2	Retain		4.0
T021	Common Oak	18	1100	8	10	8	6.0	3-SW	3	M	Good	Growing south side of culvert. Pronounced buttress roots and basal flare. Crown break at 4m. Broad goblet shaped crown. Surface roots growing along culvert edge. Dense ivy in middle crown.	No works presently required	40+	A2	Retain		13.2
T022	Common Oak	18	1100	8	10	7	6.0	4-S	4	M	Fair to good	Growing within linear group to north of culvert. Occasional large diameter dead wood in middle and upper crown. Pronounced scaffold branch to east. Curved and kinked branches. Decay pockets at old branch wounds.	No works presently required	40+	A2	Retain		13.2
T023	Common Oak	20	1230	10	10	9	9.0	5-E	2	VET	Good	Veteran. Large stem size. Crown break at approximately 5m into multi stems. Suggesting potential former pollard. Goblet shaped crown. Occasional large diameter dead wood in lower crown. Occasional frayed wound in upper crown from past storm damage. Occluded wounds. Hanging broken branch to north.	No works presently required	40+	A3	Retain		14.8
G024	Oak	7	280	4	4	4	4.0	1.5	1.5	SM	Good	Three trees in triangular formation with mutual crown suppression; dimensions shown average	No works required at time of survey	20+	B	Retain		3.4
G025	Goat willow, poplar, oak, blackthorn, alder, hawthorn	16	400	6	6	6	6.0	N/A	0	Y to M	Good	Linear group of trees and shrubs. Culvert through centre. No active management. Collapsed stems in places. Mutual crown suppression. Occasional cleared areas.	No works presently required	20+	B2	PRG	854m2	4.8
G025A	Goat Willow	6	400;300;100	6	4	4	6.0	N/A	0	OM	Fair	Part of larger linear group. Growing adjacent to culvert. Multi stems from ground level. Collapsed stems. Leans. Decay cavities.	Coppice.	20+	C3	Remove		6.1
G025B	Goat Willow	6	150;350;300;100;150	3	3	7	7.0	N/A	0	OM	Fair	Part of larger linear group. Growing adjacent to culvert. Multi stems from ground level. Collapsed stems. Leans. Decay cavities.	Coppice.	20+	C3	Remove		6.2
G025C	Goat Willow	6	100;100;150;180	1	0	4	4.0	N/A	0	OM	Fair	Part of larger linear group. Growing adjacent to culvert. Multi stems from ground level. Collapsed stems. Leans. Decay cavities. Root heave. Lean to west.	Coppice.	20+	C3	Retain		3.3
G025D	Goat Willow	6	400;200	3.8	6	5	3.0	N/A	0	EM	Poor	Growing in culvert bank. Partially Collapsed to south. Multi stems from approximately 1m.	Coppice.	20+	C3	Retain		5.4
G025E	Common Oak	10	300;100	0	6	6	2.0	1.5-SE	1.8	SM	Fair	Crown suppressed. Growing on south edge of group. Basal stem established.	No works presently required	10+	C2	Retain		3.8
G026F	Common Oak	16	720	9	9	7	9.0	4-N	2	M	Good	Growing on edge of group. Crown break at approximately 4m. Light ivy encroachment on main stem.	No works presently required	20+	B2	Retain		8.6
G026	Mixed broadleaf vegetation	12	450	9	9	9	9.0	0.5	0	SM-M	Good	Dimensions shown are indicative; mixed broadleaf vegetation, unmanaged, along small watercourse; multi-stemmed crack willow, often with sprawling, supine or semi-collapsed stems, frequent shear cracks; established decay at basal wounds; also frequent goat willow, hawthorn; locally abundant ivy, bramble; dog rose; larger trees recorded individually	Remove larger deadwood if adjacent to proposed works	20+	C2	Retain		5.4
G026-A	Oak	15	700	11	9	11	10.0	2-E	2	M	Fair	Near top of bank; frequent sub-80mm diameter deadwood / hanging branch and occasionally larger in slightly sparse crown	Remove larger deadwood if adjacent to proposed works	40+	B2	Retain		8.4

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G026-B	Oak	15	700	10	8	11	8.0	0.5-W	1	M	Fair	Slightly sparse crown growing mostly to south; ivy-clad	No works presently required	20+	B2	Retain		8.4
G026-C	Ash	16	320;280;260	5	5	5	5.0	4	4	EM	Fair	Low-vitality tree with frequent small diameter deadwood at mid-bank level; ivy-clad	Remove larger deadwood if adjacent to proposed works	10+	C2	Retain		6.0
G026-D	Hornbeam	14	450	7	7	7	5.0	1.5	1.5	M	Good	On lower bank, good form, crown slightly suppressed to west	No works presently required	20+	B2	Retain		5.4
G026-E	Oak	16	580	10	9	11	9.0	2	2	M	Good	Near foot of bank, vitality slightly superior to most of companions along stream	No works presently required	40+	B2	Retain		7.0
T027	Common Oak	20	1335	9	9	9	9.0	4-S	2	Vet	Good	Veteran tree. Large stem size. Prominent tree. Pronounced buttress roots and basal flare. Ganoderma wood decay fungi brackets present in between buttress roots to south west, north east and west. Not significant at present. Historic brackets. Extensive reaction wood. Decay pockets at old branch wounds.	No works presently required	40+	A3	Retain		16.0
T028	Hawthorn	3	80;80;80;80;80	2.5	2.5	2.5	2.5	N/A	0	EM	Fair	Multi stems from ground level.	No works presently required	10+	C2	Retain		2.1
G029	A Group	8	250	3.5	3.5	3.5	3.5	0.5	0.5	SM-EM	Good	Mostly small multistems in wet ground at side of stream; includes 1no larger windthrown tree now growing as harp tree	No works presently required	10+	C2	Retain		3.0
T030	Oak	13	400;360	7	7	7	6.0	1.5	1	M	Good	Co-dominant first fork at 1m; rounded crown	No works presently required	40+	B2	Retain		6.5
G031-A	Oak	12	680	9	9	9	9.0	2	2	M	Good	With G031-B, two trees 500mm apart forming one rounded crown; B strongly suppressed by dominant A	No works presently required	40+	B2	Retain		8.2
G031-B	Oak	8	240	5	5	5	5.0	2	2	EM	Good	See G0331-A	No works presently required	20+	B2	Retain		2.9
T032	Common Oak	10	330;300	6	6	5	6.0	2-N	2	SM	Good	Growing on raised bank. Existing gated hard surface access 2m west. Co-dominant stems from 300mm. Tight union, compression fork with slight bark inclusion. Fused stems, natural bracing in middle crown.	No works presently required	10+	C2	Retain		5.4
G033	Common oak, sweet chestnut, sycamore, hawthorn	12	400	7	7	7	7.0	N/A	1.5	Y to M	Good	Linear group. Growing on highway verge. Sloped bank towards road. Crowns extend into site. Single and multi stems recorded.	No works presently required	20+	B2	Retain		4.8
T034	Sycamore	18	860	6	6	12	9.0	3-S	2	M	Fair	Crown suppressed to north. Occasional small diameter dead wood in middle crown. Low crown height to south. 3m.	No works presently required	20+	B2	Retain		10.3
T035	Ash	16	500	4	9	4	4.0	6-E	2	EM	Good	Crown suppressed to west. Inontus hispidus wood decay fungi bracket present on main stem at approximately 4m to east. Dense bramble around base.	No works presently required	20+	B2	Retain		6.0
T036	Sweet Chestnut	16	1670	10	6	9.5	11.0	2	1.5	Vet	Good	Dense ivy to near top of tree limits assessment; occasional storm damage - large branch tears; large deadwood branches and stubs; limited exposed desiccated heartwood at base - decay in area around small cavity opening to north; no obvious crown retrenchment	Remove larger deadwood only if adjacent to proposed works	40+	A1/3	Retain		20.0
T037	Sweet Chestnut	20	1680	3	8	9	7.0	5-E	1.5	Vet	Fair	Veteran. Large stem circumference. Pronounced basal swelling. Burrs. Historic wounds on buttress roots from past mammal grazing damage. Occasional storm damage. No obvious crown retrenchment.	No works presently required	40+	A3	Retain		20.2
T038	Oak	14	700 #	7	7	7	7.0	1	2	M	Good	Diameter estimated at 600mm; tree located within secure Environment Agency compound - no access to base; occluding around concrete retaining wall on east side; frequent epicormic growth	No works presently required	20+	B2	Retain		8.4

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T039	Ash	10	380	4	4	4	4.0	N/A	1	SM	Good	Balanced crown. Growing on sloped bank. Co-dominant stems from approximately 2m. Union appears sound. No obvious signs of ash dieback.	No works presently required	20+	B2	Retain		4.6
T040	Ash	10	260	4	4	4	3.0	N/A	2	SM	Good	Growing to south of culvert head wall. Kinked main stem.	No works presently required	10+	C2	Remove		3.1
T041	Hawthorn	3.5	200	3	3	3	3.0		2	SM	Good	Dense ivy encroachment on main stem.	No works presently required	10+	C2	Remove		2.4
T042	Common Oak	14	500	7	7	7	7.0	2-W	0.5	M	Fair	Growing on bank of culvert. Crown break at approximately 1.5m. Dense branches and stems.	No works presently required	20+	B2	Retain		6.0
T043	Common Oak		820	6	6	9	6.0	4-W	3	M	Good	Growing on edge of culvert. Head wall restricting root development. Crown break at approximately 4m. Occasional decay pocket at old branch wound. Occasional small to moderate diameter dead wood in lower and middle crown.	No works presently required	40+	A2	Retain		9.8
T044	Common Oak	8	300	1.5	3	5.5	2.0	1.5-S	1.5	Y	Fair	Growing slightly raised from adjacent hard surface footpath. Dense ivy encroachment on main stem and into crown. Crown suppressed to north.	No works presently required	10+	C2	Retain		3.6
T045	Hawthorn	4	250	2.5	2.5	2.5	2.5	N/A	1	SM	Fair	Growing on sloped bank of culvert. Dense ivy encroachment on stems. Hanging broken branches.	No works presently required	10+	C2	Retain		3.0
T046	Hazel	4	80;80;80	3	0	0	3.0	N/A	1	SM	Fair	Multi stem growing on bank of culvert. Stems felled to east. Formerly coppiced.	No works presently required	10+	C2	Retain		1.7
T047	Ash	12	350	5	4	3	5.0	2-W	1.5	SM	Good	Growing approximately 1m offset from boundary fence. Base not accessible. Minor crown suppression to east.	No works presently required	20+	B2	Retain		4.2
H048	Cherry Laurel	2	80	0.5	0.5	0.5	0.5	N/A	0	SM	Good	Third party managed boundary hedgerow. Retaining wall along west extents. Potential root barrier to growth towards pavement.	No works presently required	10+	C2	Retain		1.0
G049	Ash, prunus sp.	6	150	3	3	3	3.0	N/A	0	Y	Fair	Informal self sown group. Approx. 6no. Ash stems. 2no. Prunus. Dense bramble vegetation around stems. Leans and kinked stems.	No works presently required	10+	C2	PRG	146m2	1.8
T050	Crack Willow	2	1000	0.5	0.5	0.5	0.5	N/A	0	OM	Poor	Collapsed tree. Stems cut back. Regeneration at pruning points.	No works presently required	<10	U	Remove		12.0
G051	Ash	16	300	2	3	2	0.5	N/A	4	SM	Fair	Base not accessible. Position and stem diameter estimated. Co-dominant stems from approximately 4m. Other self sown small trees.	No works presently required	10+	C2	Remove		3.6
T052	Ash	8.5	270	4.5	5	4.5	0.5	3-E	2	EM	Good	Stem lean and all crown growth to east, away from larger neighbour	No works presently required	10+	C2	Remove		3.2
T053	Ash	14	480	5	5	6	6.5	2	2	M	Good	Upright form; secondary and/or closely adjacent stems to north and east; ivy-clad stem; small diameter deadwood in lower crown	Remove larger deadwood if adjacent to proposed works	20+	B2	Remove		5.8
T054	Ash	13.5	470 #	7	8	7	3.0	2	2	M	Good	At corner of garden; established decay where limb removed at crown break; gaps in crown where branches removed above garden (professionally) and to north-east (non-professional); crown growth to west suppressed by neighbours; diameter estimated	No works presently required	20+	B2	Retain		5.6
T055	Field Maple	16	300;200	4	6	6	6.0	2-S	1.5	M	Fair	Growing on culvert edge. Co-dominant stems from approximately 300mm. Union not visible. Dense ivy encroachment on stems. Occasional moderate diameter dead wood in middle crown.	No works presently required	20+	C2	Retain		4.2
G056A	Hazel	6	150;150;150;100	1	1	6	1.0	N/A	0	M	Fair	Growing directly on waters edge. Crown suppression to north. Crown over extended to south. Multi stem form.	Potential coppice.	10+	C2	Retain		3.3
G056B	Hazel	6	150;100;100	1	1	6	1.0	N/A	0	M	Fair	Growing directly on waters edge. Crown suppression to north. Crown over extended to south. Multi stem form.	No works presently required	10+	C2	Retain		2.5

Tree ID	Species	Height (m)	Stem Dia (mm)	Branch sp'd N (m)	Branch sp'd E (m)	Branch sp'd S (m)	Branch sp'd W (m)	1st significant branch ht (m)	Canopy height (m)	Life Stage	Vitality	General observations	Preliminary management recommendations	Est'd Remaining Contribution (Yrs)	Cat Grading	Remove/Part Remove/Retain	Quantities for removal	RPA Radius (m)
G056C	Hawthorn	7	150;150;100	3	2	4	2.0	N/A	2	M	Fair	Growing directly on water edge. Base not accessible. Main stem trifurcates at approximately 1.5m. Dense ivy encroachment on stems and into crown.	No works presently required	10+	C2	Retain		2.5
G056D	Hazel	6	200;200;80	0	3	6	3.0	N/A	0	M	Fair	Growing directly on waters edge. Crown suppression to north. Crown over extended to south. Multi stem form.	No works presently required	10+	C2	Retain		3.5
G056E	Hawthorn	6	100;150	2	2	4	2.0	N/A	2	M	Fair	Co-dominant stems from approximately 400mm. Union appears sound. Dense ivy encroachment on stems and into crown.	No works presently required	10+	C2	Retain		2.2
G056F	Hazel	6	80;80;100	2	2	6	2.0	N/A	0	M	Fair	Growing directly on waters edge. Crown suppression to north. Crown over extended to south. Multi stem form.	No works presently required	10+	C2	Retain		1.8
G056G	Hawthorn	6	300	2	2	2	2.0	N/A	1	M	Fair	Growing directly on water edge. Dense ivy encroachment on main stem and into crown. Collapsed branch to south.	No works presently required	10+	C2	Retain		3.6
T057	Ash	10	320;280;250;250	5	5	5	5.0	2	2	EM	Good	On earth bank at corner of hardstanding area; pollarded tree previously cut back to ground level, resulting in multi-stemmed form; decay pockets associated with pollard cuts	No works presently required	10+	C2	Retain		6.6
G058	A Group	2	100	1	1	1	1.0	0	0	EM	Fair	Line of vegetation along garden boundary, above small retaining wall; ash saplings topped at 1800mm, ivy, infrequent hawthorn and holly; 'light touch' management	No works presently required	10+	C2	Retain		1.2
T059	Crack Willow	8	400;400;200;300;300	6	4	4	4.0	N/A	0	OM	Fair	Growing on culvert bank. Crown topped at approximately 6m. Good regeneration. Basal decay visible to south west. Crown reduction likely to be as part of managing risk of collapse.	Maintain as pollard. Cyclical reduction of regenerated growth.	10+	C2	Retain		8.8
T060	Common Oak	16	1000	8	8	10	10.0	3-W	4	M	Good	Growing on bank face of earth mound to south of culvert path. Lateral roots visible in bank face. Occasional small to moderate diameter dead wood in middle crown. Dead bask stem to west. Crown lifted to south.	Remove or reduce dead wood overhanging culvert path.	40+	B2	Retain		12.0
T061	Common Alder	15	240;240;240;240;240;240;240;240;240;240	6	6	6	6.0	4	2	M	Good	Large multistem above stream; infrequent mutual occlusion of stems	No works presently required	20+	B2	Remove		9.1
G062-A	Field Maple	7	300	4	3	3	2.5	1.5	1.5	EM	Fair	Pair on top of earth bank, 4m apart; eastern tree crown growth constrained by neighbours, western tree crown extending to west; non-professional crown-lifting of eastern tree	No works presently required	10+	C2	Retain		3.6
G062-B	Field Maple	9	300	5	3.5	4.5	5.0	2	2	EM	Good	See G062-A	No works presently required	20+	B2	Retain		3.6
G063A	Elder	3.5	100	2	2	2	2.0	N/A	0	Y to SM	Fair	Self sown elder on north bank of culvert. Mutual suppression.	No works presently required	10+	C2	Retain		1.2
G063B	Elder	3.5	100	2	2	2	2.0	N/A	0	Y to SM	Fair	Self sown elder on north bank of culvert. Mutual suppression.	No works presently required	10+	C2	Retain		1.2
G063C	Elder	3.5	100	2	2	2	2.0	N/A	0	Y to SM	Fair	Self sown elder on north bank of culvert. Mutual suppression.	No works presently required	10+	C2	Retain		1.2
G063D	Elder	3.5	100	2	2	2	2.0	N/A	0	Y to SM	Fair	Self sown elder on north bank of culvert. Mutual suppression.	No works presently required	10+	C2	Retain		1.2
T064	Hawthorn	6	150;150;150	3.5	3.5	3.5	3.5		1	M	Fair	Growing on north side of culvert. Three stems. Base not accessible.	No works presently required	10+	C2	Retain		3.1
T065	Apple	4	400	4	4	4	4.0	2-W	2	M	Fair	Growing to east of pavement. Manhole cover directly north. Crown reduce and lifted in places. Service trench in pavement. Likely to be highly modified root zone.	No works presently required	10+	C2	Retain		4.8
T067	Field Maple	4	400	4	3	2.5	4.0	1	1	M	Dead	Tree apparently dead; ivy-clad trunk terminating at 3m	Fell to ground level	<10	U	Retain		4.8

Tree ID	Species	Height (m)	Stem Dia (mm)	Branch sp'd N (m)	Branch sp'd E (m)	Branch sp'd S (m)	Branch sp'd W (m)	1st significant branch ht (m)	Canopy height (m)	Life Stage	Vitality	General observations	Preliminary management recommendations	Est'd Remaining Contribution (Yrs)	Cat Grading	Remove/Part Remove/Retain	Quantities for removal	RPA Radius (m)
G067	Hawthorn	4.5	200	2	2	2	2.0	1	1	EM	Good	Pair of thorns, eastern tree suppressed by neighbour; bramble encroachment	No works presently required	10+	C2	Retain		2.4
T068	Swedish Whitebeam	3.5	100	1.5	1.5	1.5	1.5	N/A	1.75	Y	Good	Suckering at base. Spoil piled around base.	No works presently required	10+	C2	Retain		1.2
T069	Swedish Whitebeam	7	580	3.5	3.5	4	3.5	2-S	2	M	Good	Growing within grassed verge. Pavement and road adjacent to tree. Likely to be highly modified root zone. Crown break at 2m.	No works presently required	20+	B2	Remove		7.0
T070	Ash	15	400	5.5	6	6	6.0	2	1	EM	Good	On bank above streamside path; pockets of decay where lower branches cut back from house to south; frequent co-dominant forks; small diameter deadwood	No works presently required	20+	C2	Retain		4.8
T071	Common Alder	16	420;420	8	7	7	1.0	3-E	2.5	M	Good	Multistem suppressed to west by dominant neighbour, although west stem broadly vertical for all its length; east stem turns abruptly to north at 9m	No works presently required	20+	B2	Coppice		7.1
T072	Common Alder	16	500	8	8	8	8.0	3	3	M	Good	Above stream, unusually spreading specimen, stem vertical; sub-100mm diameter in lower south-west crown; occasional pockets of decay associated with branch failures	Remove larger deadwood if adjacent to proposed works	40+	A2	Retain		6.0
T073	Ash	10	300;280;80	3	3	4	3.0	N/A	5	EM	Fair	Growing on south bank of culvert. Base not accessible. Extensive dieback and dead wood in east crown extents.	Remove dead wood.	10+	C2	Remove		5.0
T074	Common Oak	7	200;200	3	2	2	6.0	N/A	1	Y	Fair	Growing on north bank of culvert. Base not accessible. Co-dominant stems from ground level. Mutual crown suppression. Dense scrub vegetation around base.	No works presently required	10+	C2	Retain		3.4
G075	Blackthorn	3	80	2	2	2	2.0	N/A	0	Y	Fair	Dense scrub. Self sown. Bramble established.	No works presently required	10+	C2	PRG	12m2	1.0
T075	Ash	15	350	6	4	3	3.0	N/A	4	SM	Good	Growing on west bank of culvert. Base not accessible. Measurements estimated. Dense ivy encroachment on main stem and into crown. Co-dominant stems from approximately 3m. Union not visible.	No works presently required	10+	C2	Retain		4.2
T076	Field Maple	16	280;280	6	3	2	3.5	2.5	3	EM	Good	No access to base; tall as result of competition for light - crown growth all to north; lower stems ivy-clad	No works presently required	10+	C2	Retain		4.8
T077	Ash	16	350;350;350	8	7	8	9.0	2	2	M	Good	No access to base, view obscured by ivy; limbs rising from stout bole, supporting large, spreading crown; occasional sub-75mm diameter deadwood	Remove larger deadwood if adjacent to proposed works	20+	B2	Retain		7.3
T078	Common Oak	18	950	6	8	5	6.0	6-SE	4	M	Good	Growing on east bank of culvert. Selective branch reduction visible. Pruning wounds. Sections of exposed desiccated wood. Habitat holes. Abrupt angles on some branches. Dense bramble to east.	No works presently required	40+	A2	Retain		11.4
G079	Ash, goat willow	8	250	5	5	5	5.0	N/A	0	SM	Fair to good	Self sown, informal group. Drawn stems. Mutual crown suppression. Single and multi stem forms.	No works presently required	10+	C2	Retain		3.0
T080	Common Oak	8.5	180;180	2	6	2	4.0	2-E	1.5	Y	Fair	Mutual crown suppression. Dense bramble established. Occasional small diameter dead wood in middle crown.	No works presently required	10+	C2	Retain		3.1
T081	Ash	10	190;200	3	6	3	3.0	3-NE	3	SM	Fair	Co-dominant stems from ground level. Mutual crown suppression. Occasional small diameter dead wood in middle crown.	No works presently required	20+	B2	Remove		3.3
T082	Ash	12	200;200;370	4	6	6	4.0	2-NE	2	EM	Good	Three stems from approximately 200mm. Unions appear sound. Crossing and rubbing branches in crown to south. Superficial bark damage to north stem. Occasional branch cut back. Stub remaining.	No works presently required	20+	B2	Remove		5.6

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T083	Common Oak	18	1330	9	8	9	11.5	2-W	0.5	Vet	Good	Veteran. Large stem size. Occasional moderate diameter dead wood in lower and middle crown. Desiccated in appearance. Dense epicormic growths within crown on branches. Low crown height to south. Crown lifted and reduced over third party to east.	No works presently required	40+	A3	Retain		16.0
T084	Common Oak	5.5	300	4.5	5	4.5	3.0	1.5-E	1	Y	Fair	Growing adjacent to culvert. Loss of apical stem from 2.5m. Multi stem from this point. Dense ivy encroachment on main stem and into crown. Hanging broken branch. Dead wood in crown to west.	No works presently required	10+	C2	Remove		3.6
T085	Ash	9	250;250	4	6	5	4.0	3-NE	2	SM	Good	Growing directly adjacent to concrete head wall for culvert. Root barrier to growth. Twin stemmed from ground level. Mutual crown suppression.	No works presently required	10+	C2	Remove		4.2
G086	Ash, oak, blackthorn	6	200	3	3	3	3.0	N/A	0	Y to SM	Fair	Informal self sown group. Individual stems not plotted. Approximately 1no. Oak, 1no. Ash. Rest scrub. Dense ivy ground vegetation.	No works presently required	10+	C2	PRG	295m2	2.4
G087-E	Oak	7	318	1	3	6	4.0	2	2	SM-EM	Good	Planted trees at regular intervals on verge between pavement and fence; mutual crown suppression where larger trees dominant to north - growth mainly to south; variably ivy-clad; crown-lifting above pavement	No works presently required	20+	B2	Retain		3.8
G087-F	Oak	7	290	2	4	6	2.0	2	2	SM-EM	Good	See G087-E	No works presently required	20+	B2	Retain		3.5
G087-G	Oak	9	390	4	5	6	5.0	1.5-E	1	SM-EM	Good	Lower stem lean to south	No works presently required	20+	B2	Retain		4.7
G087-H	Oak	9	360	0	1	6	6.0	2	2	SM-EM	Good	Stem lean to south	No works presently required	20+	B2	Retain		4.3
G087-I	Oak	9	400	4	2	5	4.0	2-W	2	SM-EM	Good	See G087-E	No works presently required	20+	B2	Retain		4.8
G087-J	Oak	7	220	0	2	5	2.5	3	2	SM-EM	Fair	Heavily suppressed	No works presently required	20+	C2	Retain		2.6
G087-K	Oak	7	330	4.5	4.5	6	4.5	1-W	1.5	SM-EM	Good	Brambles entwined in lower tree	No works presently required	20+	B2	Retain		4.0
G087-L	Oak	7	280;260	3	5	5	5.0	1	1.5	SM-EM	Good	Brambles entwined in lower tree	No works presently required	20+	B2	Retain		4.6
T087	Oak	18	780	7.5	11	7.5	7.0	2	1	M	Good	Slightly dominant of pair, high branch extending above neighbour to south; minimal storm damage, deadwood	No works presently required	40+	A2	Retain		9.4
T088	Oak	16	720	3	11	9	8.0	2	1.5	M	Good	Slightly subordinate of pair, growth mostly to south and east; established decay at trench wound on upper side of first limb to east; also associated with historic branch failures; woodpecker hole at branch failure wound, 3m west side; occasional sub-100mm diameter deadwood stubs and branches	Remove larger deadwood only if adjacent to proposed works	40+	A2	Retain		8.6
T089	Common Oak	15	750	6	9	8.5	6.0	3-SW	2	M	Fair	Potential modified root zone due to pavement to north, west and gas main. Loss of vitality. Slight crown thinning. Small diameter dead wood in upper crown. Decay pockets at old branch wounds. Desiccated in appearance. Habitat holes.	No works presently required	40+	B2	Remove		9.0
T090	Oak	7	300 at 1200mm	5.2	4	4	8.5	1	1.5	EM	Good	On stream bank, vertical growth suppressed by neighbours, limbs extending over stream to north and west; lower tree cloaked in ivy	No works presently required	20+	C2	Remove		3.6
T091	Oak	7	320	4.5	5	4.5	5.0	1	1.5	EM	Good	At top of stream bank; necessarily compact, beneath large oak and among riparian competition; ivy-clad	No works presently required	20+	B2	Remove		3.8

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G092	Goat Willow	4	250;250;250;250	5	7	5	7.0	1	1	EM	Good	Approximately seven stems, eastern stem ivy-clad and overhanging fence and footpath; possibly two or three trees, stems twisting with mutual occlusion; some occlusion also around concrete culvert wall; no collapsed stems	No works presently required	10+	C2	PRG	108m2	6.7
T093	Field Maple	10	400;200;200	4	6	6	4.0	2-SE	2	M	Good	Potential three stems from same root system. Tree growing on east bank of culvert. Stems in contact with metal fence. Dense ivy encroachment on stems and into crown. Base not accessible. Crown infringing on overhead utility cable.	Sever and remove ivy. Consider removal of basal stems to allow main stem to continue to grow.	20+	B2	Retain		5.9
T094	Field Maple	6	250	0	4	5	2.0	N/A	1.8	SM	Fair	Crown suppression by adjacent tree. Dense ivy encroachment on main stem. Branch enveloped adjacent boundary fence.	No works presently required	10+	C2	Retain		3.0
T095A	Goat Willow	9	400	5	6	5	6.0	N/A	1	EM	Fair	Growing on culvert bank. No access to base. Dense ivy encroachment on main stem. Die back and dead wood in middle crown. Decay cavities at old wounds.	No works presently	10+	C2	Retain		4.8
T095B	Crack Willow	20	600;500	10	7	12	13.0	1	0	M-OM	Fair	To west of footpath; extensive 100mm diameter deadwood in upper crown; frequent deadwood branches and stubs; collapsed dead stem to north; propped recumbent stem to south-west; historic decay where limb removed at footpath side to east	Recommended to pollard tree on safety grounds due to poor crown vitality; remove dead stem to north if adjacent to proposed works; remove larger deadwood	10+	C2	Retain		9.4
T096	Hazel	4	80;80;80;80;80	2.5	2.5	2.5	2.5	N/A	0	EM	Fair	Multi stem. Growing top of culvert bank. Moderate ivy encroachment.	No works presently required	10+	C2	Retain		2.1
T097	Alder	12	250;250	3	1	3	5.0	2-SW	3	SM	Fair	Growing directly on waters edge. Concrete culvert bank. Root barrier. Co-dominant stems from approximately 300mm. Union appears sound. Drawn stems. Mutual crown suppression.	No works presently required	10+	C2	Retain		4.2
T098	Alder	7	200	2	0	1	3.0	4-W	4	SM	Fair	Growing directly on culvert edge. Concrete lined culvert, root barrier to west. Drawn stem. Crown suppression	No works presently required	10+	C2	Retain		2.4
T099	Common Oak	18	900	6	7	6	7.0	6-N	5	M	Fair to good	Growing directly on edge of culvert. Measurements estimated. Concrete lined adjacent to tree, potential root barrier. Co-dominant stems from approximately 4m. Union appears sound. Decay entry points at old branch wounds. Habitat holes. Slight crown thinning. Small to moderate diameter dead wood in middle and upper crown. Historic occluded wounds on main stem. Abrupt angles on some Branches	No works presently required	40+	A2	Retain		10.8
T100	Ash		150;150;150;100	2	5	4	2.0	N/A	2	SM	Good	Multi stem. Growing directly east of oak. Mutual crown suppression. Drawn stems. Abrupt angles on some stems.	No works presently required	10+	C2	Retain		3.3
T101	Ash	16	240;240;240;240;240;240	2	6	8	4.0	3	3	M	Poor	Multistem on bank near footbridge; vitality notably poor; frequent diamond-shaped stem lesions, cracks, bacterial cankerous deformities; brown curling leaves in sparse crown; mutual occlusion of stems; frequent small diameter deadwood, hanging branch	Recommended to coppice due to poor physiological condition and prominent location	10+	C2	Retain		7.1
T102	Common Alder	17	300;300;280;250;240;240	9	9	6	8.0	4	2	M	Good	At foot of bank, large bole; crown growth suppressed to south; infrequent small diameter deadwood	No works presently required	20+	B2	Retain		7.5
G103	Hawthorn, elder, blackthorn	6	250	3	3	3	3.0	N/A	0	SM to EM	Fair	Informal self sown group. Dense pockets of bramble. Collapsed stems in places. Multi stems.	No works presently required	10+	C2	PRG	864m2	3.0

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T104	Crack Willow	10	300;300;300;300;400	4	5	8	7.0	1-SW	1	OM	Fair	Growing on north bank of culvert. Multi stem from ground level, suggesting past felling and regeneration. South stem partially collapsed. Over extended to south. Mutual suppression. Kinked stems. Moderate ivy encroachment on stems.	Consider pollard at approximately 6m	10+	C3	Retain		8.7
T105	Crack Willow	21	600;350	12	12	9	12.0	2	1	M	Poor	Extensive large deadwood in upper crown; collapsed recumbent dead stem to east; dead stem to south; deadwood branch suspended above crown break; frequent branch tears and stubs	Recommended to pollard on safety grounds due to poor physiological condition; remove dead limb to south; remove all larger deadwood	10+	C2	Remove		8.3
G106A	Common Oak	3	100	2	2	2	2.0	N/A	0.5	Y	Good	Growing on south side of culvert.	No works presently required	10+	C2	Retain		1.2
G106B	Common Oak	3	100	2	2	2	2.0	N/A	0.5	Y	Good	Growing on south side of culvert.	No works presently required	10+	C2	Retain		1.2
G106C	Common Oak	3	100	2	2	2	2.0	N/A	0.5	Y	Good	Growing on south side of culvert.	No works presently required	10+	C2	Retain		1.2
T107	Crack Willow	14	400;300	3	6	6	6.0	N/A	0	M	Dead	Standing dead tree. Saprophytic habitat value. No access to base.	Reduce south stem to 5m in height.	<10	U	Retain		6.0
T108	Crack Willow	22	800;350;300	11	8	17	12.0	2-NE	1.5	M	Fair	Reasonable vitality and sprinkling of sub-75mm diameter deadwood in large straggling crown; branch tears and stubs; limb extending low to south-west	Remove larger deadwood if adjacent to proposed works Are other willows tall enough?	10+	C2	Retain		11.1
G109A	Ash	12	370	6	6	3	3.0	2-N	0.5	SM	Good	Three stems from approximately 2m. Unions appear sound. Light ivy encroachment on main stem. Crown suppression to west. Slight lean on main stem.	No works presently required	20+	B2	Retain		4.4
G109B	Ash	13	350	5	2	5	6.0	2NW	2	SM	Good	Crown suppression to east. Co-dominant stems from approximately 1.8m. Union appears sound. Dense ivy encroachment on main stem.	No works presently required	20+	B2	Retain		4.2
T110	Crack Willow	18	800	10	9	9	7.0	1-N	2	M	Fair	Growing adjacent to culvert. Broad crown. Basal strut to south west. Small diameter dead wood in middle crown. Sloped bank to north. Crown break at approximately 1.8m.	No works presently required	20+	B2	Retain		9.6
G111	Willow/poplar group	20	300;300;300	9	9	9	9.0	2	1	EM-M	Good / fair	Large group of multi-stemmed crack willow, stems at all angles, and grey poplar, stems vertical; many stems ivy-clad; few collapsed stems and general vitality good; dense bramble with laurel at base, also young hawthorn, dogwood; some lower branches previously removed; dimensions shown are indicative	No works presently required	20+	B2	Retain		6.2
G112	A Group	6	240	3.5	3.5	3.5	3.5	0	0	EM	Fair	Dense bramble scrub incorporating remnants of hawthorn hedge along old fence line; stand of mostly dead elm at north end of group; young crack willow; 1no ash recorded individually	Remove dead elm if adjacent to proposed works	10+	C2	Retain		2.9
G112-A	Ash	9	250	4	3.5	3.5	4.0	2	1.5	SM	Good	Young specimen adjacent to lighting column	No works presently required	10+	C2	Retain		3.0
T113	Common Oak	12	800	3	5	4	4.0	2-S	2	M	Fair	Tree topped and reduced. Good regeneration. Unoccluded pruning wounds. Dense epicormic growths.	No works presently required	40+	B3	Retain		9.6
T114	Common Oak	17	1000	8	10	9	8.0	3-SE	1	M	Good	Crown suppression to south west. Broad crown. Occasional abrupt angle on some branches from past reductions. Occasional small to moderate diameter dead wood in middle crown.	No works presently required	40+	A2	Retain		12.0
G115-A	Hawthorn	5	150;150;150;150	5	4	5	4.0	1	1.5	M	Good	Unmanaged group on both sides of overground pipeline; dogwood and hazel scrub with bramble; trees all compact, recorded individually	No works presently required	10+	C2	Retain		3.6
G115-B	Hawthorn	6	150	2	2	2	2.0	2	2	EM	Good	See G115-A	No works presently required	10+	C2	Retain		1.8
G115-C	Hazel	5	250	4	4	4	4.0	1	1	EM	Good	See G115-A; this tree a multistem - diameter indicative	No works presently required	10+	C2	Retain		3.0

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G115-D	Hawthorn	6	250	3	3	3	3.0	1.5	1.5	EM	Good	See G115-A	No works presently required	10+	C2	Retain		3.0
G115-E	Hawthorn	6	250	3	3	3	3.0	1.5	1.5	EM	Good	See G115-A	No works presently required	10+	C2	Retain		3.0
T116	Oak	8	400	6	7	7	4.0	2-W	1	EM	Good	No access to base, amid hawthorn and bramble scrub; compact form		20+	B2	Retain		4.8
G117	Hawthorn	4	150;100;80	2.5	2.5	2.5	2.5	N/A	0	EM	Fair	Part of intermittent group to south of above ground pipeline. Multi stem form. Dogwood around base.	No works presently required	10+	C2	Retain		2.4
G117B	Goat Willow	4	80;80;100	2.5	2.5	2.5	2.5	N/A	0	SM	Fair	Growing immediately adjacent to above ground pipeline. Previously cut and regenerated.	No works presently required	10+	C2	Retain		1.8
G117C	Hawthorn	3	80;80;80	2	2	2	2.0	N/A	0	SM	Fair	Multi stem from ground level suggesting past felling and regeneration.	No works presently required	10+	C2	Retain		1.7
T118	Common Ash	7.5	150;200;100	3	3	3	3.0	N/A	1.8	SM	Fair	Three stems from ground level. Mutual crown suppression.	No works presently required	10+	C2	Retain		2.2
G119	Hawthorn, hazel, goat willow, alder, crack willow.	6	200	3	3	3	3.0	N/A	0	SM to EM	Fair to good	Informal group growing on boundary of green space. Screen function. Occasional collapsed stem.	No works presently required	20+	B2	Retain		2.4
G119A	Crack Willow	8	100;100;100;100	4	4	4	4.0	N/A	1	SM	Fair	Multi stem form, suggesting past felling and regeneration. Drawn stems leans.	No works presently required	10+	C2	Retain		2.4
G119B	Crack Willow	9	100;100;100;100	4	4	4	4.0	N/A	2	SM	Fair	Leans on stems. Bases not accessible. Potential collapsed stems.	Coppice or pollard	10+	C2	Retain		2.4
G119C	Crack Willow	10	100;100;100;100	4	4	4	4.0	N/A	3	SM	Fair	Collapsed stems to west.	Coppice collapsed stems.	10+	C2	Retain		2.4
G119D	Common Oak	12	300	4.5	4.5	4.5	4.5	4-NW	3	SM	Good	Part of larger group. 4no. Oaks present in corner of G119. Mutual crown suppression.	No works presently required	20+	B2	Retain		3.6
G119E	Common Oak	12	300	4.5	4.5	4.5	4.5	N/A	3	SM	Good	Part of larger group. 4no. Oaks present in corner of G119. Mutual crown suppression.	No works presently required	20+	B2	Retain		3.6
G120-A	Oak	11	280;280	8	5	3	7.0	2.5-NW	2	EM	Good	Trees on north edge of small group, mostly oak; mutual crown suppression; directly behind wire mesh fencing; ivy widespread throughout group; this tree: a twinstem, north stem occluding around concrete fence post	No works presently required	20+	B2	Retain		4.8
G120-B	Oak	11	300;200	6.5	5	5	2.0	2.5	2	EM	Good	See G120-A; this tree: crown growth heavily suppressed	No works presently required	20+	B2	Retain		4.3
G120-C	Hawthorn	5	250	6	4	0.5	2.0	2	2	EM	Good	See G120-A	No works presently required	10+	C2	Retain		3.0
G120-D	Oak	11	450	8	1.5	9	6.0	2-W	1.5	EM	Good	See G120-A; this tree 2m behind wire mesh fence; minor deadwood branches, stubs	No works presently required	20+	B2	Retain		5.4
H121	Common Hawthorn	6	250	2.5	2.5	2.5	2.5	N/A	0	EM	Good	Field boundary hedgerow. Historically managed at different heights. Multi stem forms at cut points. Partial recent management to top of hedgerow. Remainder lapsed. Dense and screen function.	No works presently required	20+	B2	Retain		3.0
G122	Hawthorn	6	250	4	4	4	4.0	0.5	1	EM	Good	Long row of hawthorns planted as hedge but not recently managed; mostly ivy-clad, minimal deadwood; more intermittent towards west end; trees either side of wire mesh fence line; dimensions shown are indicative	No works presently required	20+	B2	Retain		3.0
T123	Hybrid Black Poplar	26	1200	9	9	9	9.0	3-W	1	M	Good	Dbh @ 400mm. Three stems. Compression forks and included bark at unions. Central stem co-dominant from approximately 3m. Pronounced reaction wood below union. Potential cavity at union. Evidence of storm damage in crown. Frayed wounds.	Install cable bracing system in mid crown to provide structural support for potential weakened unions.	20+	B2	Retain		14.4

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T124	Field Maple	16	450;600;350	8	8	8	8.0	3-NW	1	M	Good	Potential three trees. Three stems from ground level. Mutual suppression. Slight leans. Occasional decay cavity at old branch wound. Occasional small diameter dead wood in middle crown. Frayed wounds from old storm damage.	No works presently required	20+	B2	Retain		9.9
T125	Elder	3	150;150;150;80	2	2	2	2.0	N/A	1	EM	Fair	Multi stem from ground level. Suggesting past felling and regeneration. Elongated wound on west stem. At base. Desiccated white rot present. Crown in contact with adjacent tree.	No works presently required	10+	C2	Retain		3.3
T126	Hawthorn	3	200	0	0	4	4.0	2-W	1	EM	Fair	Crown suppression by adjacent tree. Curved main stem.	No works presently required	10+	C2	Retain		2.4
T127	Oak		350	4.5	3	5	6.5	2-S	1.5	EM	Good	Hard behind wire mesh fencing; lower crown growth mostly to south, upper crown growth mostly to north above kink in ivy-clad stem		20+	B	Retain		4.2
T128	Oak	18	1300 #	9	10.5	10	9.0	1.5	2	VET	Fair	VETERAN: No access to base - diameter estimated; Several established decay cavities and columns associated with historic limb tears - woodpecker activity; stout bole - no apertures observed, but likelihood of hollowness; limb to east terminates abruptly; minor deadwood only	No works required at time of survey	40+	A3	Retain		15.6
T129	Common Oak	18	1060	7	7	7	8.0	4-W	1.5	M	Good	Crown break at approximately 5m. Unions appear sound. Occasional moderate diameter dead wood in middle crown. Decay cavities at old branch wounds. Habitat holes. Abrupt angles on some branches. Potential former reduction points.	No works presently required	40+	A2	Retain		12.7
T130	Common Oak	18	1100	7	5	10	12.0	4-E	3	M	Fair	Growing 3m west of hard surfaced path. Basal wound to north. Desiccated white rot visible. Pronounced basal flare, reaction wood. Slight lean on main stem from 2m. Crown dominant to south and west. Abrupt angles and regenerated branches in upper crown from past crown reduction. Decay cavities at old branch wounds.	No works presently required	40+	A2	Retain		13.2
G131A	Common Ash	16	350	4	6	9	4.0	4-S	2	SM	Fair	Mutual crown suppression. Slight lean to south. Correcting in middle crown. Occasional small to moderate diameter dead wood in middle crown. Over extended branches to south.	Consider reducing south crown by approximately 4m in lateral spread	20+	B2	Retain		4.2
G131B	Ash	16	350	0	13	9	1.0	4-SE	2	SM	Good	Crown suppression. Tree leans to south east. Over extended crown to south east. Basal stem felled to west.	Consider reducing south east crown by approximately 4m in lateral spread.	10+	C2	Retain		4.2
G131C	Hawthorn	6	80;80;80;80;80	2	2	3	3.0	N/A	2	M	Fair	Crown suppression. Dense ivy on west stem. Multi stems. Suggesting last pruning and regeneration.	No works presently required	10+	C2	Retain		2.1
G132	Linear group	to 15	to 300	4	4	4	4.0	1.5	1.5	EM	Good to fair	Linear group at top of stream bank, ash with oak predominant; hawthorn continuing southward from G122 but dominated by taller trees; also holly, ivy widespread; ash upright and mostly displaying good vitality, oaks more compact, twisting beneath ashes; 1no low-vitality ash, upright near south-west end of group, has extensive vertical bark lesions and bacterial cankerous deformities; occasional sub-50mm diameter deadwood throughout group	Remove larger deadwood if adjacent to proposed works	20+	B2	Retain		3.6
T133	Oak	18	1000	10	6	10	12.0	4	1.5	M	Good	Standing forward of linear group, stem ivy-clad; occasional storm damage - handful of branch tears with associated decay; sprinkling of sub-75mm diameter deadwood; small basal cavity opening to east	No works presently required	40+	A2	Retain		12.0

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G134	Oak and ash	to 16	to 300	7	7	7	7.0	1.5	1	EM	Good to fair	Tight cluster of c.5 stems of oak, ash and hawthorn, including one dead (or nearly dead) ash upright at centre of group; ashes dominant, oaks mostly growing outwards; stem and eastern branch of oak leaning to north extensively decayed; vitality of second ash fair	Remove dead ash if adjacent to proposed works; remove deadwood branch of northern oak only if adjacent to proposed works	10+	C2	Retain		3.6
T135	Hawthorn	4.5	100;100;80;200	4	4	3	3.0	1.5-E	1	M	Fair	Growing behind iron railing fence. Multi stems. Dense ivy encroachment on central stems. Existing hard surface path to east.	No works presently required	10+	C2	Retain		3.1
T136	Ash	14	440	6	5	3	7.0	3-W	2	SM	Good	Growing on top of earth mound. Crown break at approximately 3m.	No works presently required	20+	B2	Retain		5.3
T137	Common Oak	18	950	7.5	7	6	7.0	4-NW	4	M	Fair	Growing 3m from road. Pronounced basal reaction wood to west. Ganoderma spp. Wood decay fungal bracket present. Isolated to north west. Main stem trifurcates at approximately 3m. Unions obscured by ivy. Kinked stems. Decay cavities at old wounds. Occasional moderate diameter dead wood in middle crown.	Further investigation	40+	A3	Retain		11.4
T138	Common Oak	17	770	5	5	7	10.0	4-W	2	M	Fair	5m from T137. 1m from road edge. Crown break at approximately 3m. Kinked branches. Crown previously lifted. Occluded wounds. Pronounced buttress roots. Growing on sloped bank.	No works presently required	40+	A2	Retain		9.2
T139	Oak	11	840	4	5.5	6	5.0	4	4	M-OM	Fair	Extensive upper crown storm damage - live crown mostly re-growth following self-pollarding; frequent pockets of established decay associated with branch failures; lighting column adjacent to north-east; decomposed fruiting body of <i>Fistulina hepatica</i> at base to west	No works required at time of survey	20+	C3	Retain		10.1
T140	Common Oak	17	620	11	11	9	9.0	5-W	3	M	Good	Growing 500mm to east of hard surface access road. No obvious direct damage recorded from surface root activity. Historic basal wound to west. Dessicated in appearance. Crown break at approximately 5m. Broad crown. Occasional small to moderate diameter dead wood in middle crown.	No works presently required	40+	A2	Retain		7.4
T141	Common Oak	20	1200	6	8	8	5.0	3-W	3	M	Good	Locally notable. Large stem size. Pronounced basal flare. Existing concrete access road to east. No obvious direct damage recorded from surface root activity. Crown break at approximately 5m. Unions appear sound. Occasional unoccluded pruning wound in upper crown. Crown lifted to south. Ground compaction in root zone to south for field access.	No works presently required	40+	A3	Retain		14.4
G142A	Hawthorn	3	100;150	3	1.5	1.5	1.0	N/A	2	EM	Fair	Crown suppression. Unoccluded pruning wounds. Co-dominant stems from 300mm.	No works presently required	10+	C2	Retain		2.2
G142B	Hawthorn	4	100;100;150;150	3.5	3	2	2.0	2-S	0	M	Good	Multi stem form. Suggesting past felling and regeneration. Existing concrete access road to east. Unoccluded pruning wounds.	No works presently required	10+	C2	Retain		3.1
G142C	Hawthorn	4	150;150;100	3	3	1	2.0	N/A	0	M	Fair	Three stems from ground level. East and south fused. Cut stem to south.	No works presently required	10+	C2	Retain		3.1
G142E	Hazel	4	60	1	1	1	1.0	N/A	1	Y	Fair	Part of group.	No works presently required	10+	C2	Retain		0.7
G143D	Hazel	2	80;80;80;80;80	1	1	1	1.0	N/A	0	M	Fair	Recently coppiced. Good regeneration.	No works presently required	10+	C2	Retain		2.1
T143	Norway Maple	10	560	6.5	6.5	6.5	6.5	2	2	M	Good	Mower scuff wounds to exposed buttress roots; also a girdling root to east; occasional small diameter deadwood	No works presently required	20+	B2	Retain		6.7

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G144	Field maple	10 ave.	320 ave.	5	5	7.5	5.0	2	2	M-OM	Good to fair	8no maples and 1no oak, typical spacing 1.5m, on narrow verge between footpath and road; vitality mixed - limited live growth on second tree from east, frequent sub-50mm diameter deadwood, stubs and hanging branch elsewhere; exposed desiccated heartwood on western stem; pronounced mutual crown suppression; taller crowns rather leggy; branches cut back above green to south; most stems ivy-clad; basal fuzz includes some hawthorn	As minimum, remove larger deadwood if adjacent to proposed works; removal of ivy recommended to enable fuller assessment;	20+	C2	Retain		3.8
G144A	Field Maple	8	300	3	5	2	1.0	N/A	0	EM	Fair to poor	Dieback in upper crown. Crown thinning. Dense epicormic growths on main stem. Lean to east.	Remove dead wood.	10+	C2	Retain		3.6
G144B	Common Oak	12	400	2	5	7			0	SM	Fair	Crown suppression. Slight lean to south. Over extended crown to south. Epicormic growths. Slight crown thinning.	No works presently required	20+	C2	Retain		4.8
G144C	Field Maple	14	400;400	8	7	6	2.0		0	M	Fair	Dense ivy encroachment on main stem and into crown. Co-dominant stems from approx 500mm. Stems estimated given ivy growth. Dense epicormic growths. Leans on stems due to suppression. Slight crown thinning.	No works presently required	20+	C2	Retain		6.8
G144D	Field Maple	16	400	4	2	4	3.0		0	EM	Fair	Drawn stem. Mutual crown suppression. Dense ivy encroachment on main stem.	No works presently required	10+	C2	Retain		4.8
G144E	Field Maple	12	350	0	1	5	1.0		0	EM	Fair	Dense ivy encroachment on main stem. Drawn and lean stem from middle crown.	No works presently required	10+	C2	Retain		4.2
G144F	Field Maple	14	380	5	3	1	2.0		0	EM	Fair	Dense ivy encroachment on main stem and into crown. Drawn stem. Mutual crown suppression.	No works presently	10+	C2	Retain		4.6
G144G	Field Maple	10	350	2	4	4	2.0		0	EM	Fair	Dense ivy encroachment on main stem and into crown. Drawn stem. Leaning from middle crown.	No works presently required	10+	C2	Retain		4.2
G144H	Field Maple	6	300	1	4	7	1.5		0	EM	Fair	Drawn stem, leaning from middle crown. Elongated exposed desiccated white rot on main stem to south. Decay pocket at old branch wound. Dense ivy encroachment on main stem.	No works presently required	10+	C2	Retain		3.6
T145	Oak	18	1160	11	13	11	10.5	5	4	M	Good	Storm damage includes large limb tears, historic and recent; frequent branch end failures with re-growth; pockets of established decay associated with these wounds; large diameter deadwood mostly on limb extending to east	Consider reduction of long limb with deadwood extending to east	40+	A3	Retain		13.9
G146A	Lime	4	80	1.5	1.5	1.5	1.5	N/A	2	Y	Good	Planted group. Crown previously lifted.	No works presently required	10+	C2	Translocation		1.0
G146B	Lime	4	80	1.5	1.5	1.5	1.5	N/A	2	Y	Good	Planted group. Crown previously lifted. Basal wound.	No works presently required	10+	C2			1.0
G146C	Lime	4	80	1.5	1.5	1.5	1.5	N/A	2	Y	Good	Planted group. Crown previously lifted.	No works presently required	10+	C2			1.0
G146D	Lime	4	80	1.5	1.5	1.5	1.5	N/A	2	Y	Good	Planted group. Crown previously lifted.	No works presently required	10+	C2			1.0
G146E	Lime	4	80	1.5	1.5	1.5	1.5	N/A	2	Y	Good	Planted group. Crown previously lifted.	No works presently required	10+	C2			1.0
G146F	Lime	4	80	1.5	1.5	1.5	1.5	N/A	2	Y	Good	Planted group. Crown previously lifted. Basal wound.	No works presently required	10+	C2			1.0
G146G	Lime	4	80	1.5	1.5	1.5	1.5	N/A	2	Y	Good	Planted group. Crown previously lifted.	No works presently required	10+	C2			1.0
G146H	Lime	4	80	1.5	1.5	1.5	1.5	N/A	2	Y	Good	Planted group. Crown previously lifted.	No works presently required	10+	C2			1.0
G146I	Lime	4	80	1.5	1.5	1.5	1.5	N/A	2	Y	Good	Planted group. Crown previously lifted.	No works presently required	10+	C2	Translocation		1.0
G146J	Lime	4	80	1.5	1.5	1.5	1.5	N/A	2	Y	Good	Planted group. Crown previously lifted.	No works presently required	10+	C2	Retain		1.0
T147	Norway Maple	10	480	5	7	7	5.0	2.5-SW	3	EM	Good	Crown previously lifted. Crown break at approximately 3m. Unions appear sound.	No works presently required	20+	B2	Retain		5.8

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T148	Norway Maple	10	340	3.5	5	3.5	3.5	3-E	3	SM	Good	Crown previously lifted. Unoccluded wounds present. Occasional small diameter dead wood in middle crown.	No works presently required	20+	B2	Retain		4.1
G149A	Lime	7	220	3.5	3.5	3.5	3.5	2-S	1.5	Y to SM	Good	Part of planted group. Balanced crown.	No works presently required	20+	B2	Retain		2.6
G149B	Lime	7	220	3.5	3.5	3.5	3.5	2-S	1.5	Y to SM	Good	Part of planted group. Balanced crown.	No works presently required	20+	B2	Retain		2.6
G149C	Lime	7	220	3.5	3.5	3.5	3.5	2-S	1.5	Y to SM	Good	Part of planted group. Balanced crown.	No works presently required	20+	B2	Retain		2.6
G149D	Lime	7	220	3.5	3.5	3.5	3.5	2-S	1.5	Y to SM	Good	Part of planted group. Balanced crown.	No works presently required	20+	B2	Retain		2.6
G149E	Lime	7	220	3.5	3.5	3.5	3.5	2-S	1.5	Y to SM	Good	Part of planted group. Balanced crown.	No works presently required	20+	B2	Retain		2.6
G149F	Lime	7	220	3.5	3.5	3.5	3.5	2-S	1.5	Y to SM	Good	Part of planted group. Balanced crown.	No works presently required	20+	B2	Translocation		2.6
G149G	Lime	7	220	3.5	3.5	3.5	3.5	2-S	1.5	Y to SM	Good	Part of planted group. Balanced crown.	No works presently required	20+	B2	Retain		2.6
G149H	Lime	7	220	3.5	3.5	3.5	3.5	2-S	1.5	Y to SM	Good	Part of planted group. Balanced crown.	No works presently required	20+	B2	Retain		2.6
G149i	Lime	7	220	3.5	3.5	3.5	3.5	2-S	1.5	Y to SM	Good	Part of planted group. Balanced crown.	No works presently required	20+	B2	Retain		2.6
G149J	Lime	7	220	3.5	3.5	3.5	3.5	2-S	1.5	Y to SM	Good	Part of planted group. Balanced crown.	No works presently required	20+	B2	Retain		2.6
G149K	Lime	7	220	3.5	3.5	3.5	3.5	2-S	1.5	Y to SM	Good	Part of planted group. Balanced crown.	No works presently required	20+	B2	Retain		2.6
G149L	Lime	7	220	3.5	3.5	3.5	3.5	2-S	1.5	Y to SM	Good	Part of planted group. Balanced crown.	No works presently required	20+	B2	Retain		2.6
G149M	Lime	7	220	3.5	3.5	3.5	3.5	2-S	1.5	Y to SM	Good	Part of planted group. Balanced crown.	No works presently required	20+	B2	Translocation		2.6
G149N	Lime	7	220	3.5	3.5	3.5	3.5	2-S	1.5	Y to SM	Good	Part of planted group. Balanced crown.	No works presently required	20+	B2	Retain		2.6
T150	Common Oak	18	920	8	10	9	8.0	4-S	2	M	Fair to good	Slight crown thinning. Historic wound on main stem at approximately 2m to south. Pronounced reaction wood present. Crown break at approximately 7m, into three stems. Unions appear sound. Occasional small to moderate diameter dead wood in middle crown. Existing concrete access road to north.	No works presently required	40+	A2	Retain		11.0
G151A	Wild Cherry	10	320	5	5	5	5.0	N/A	2	EM	Good	Planted linear group. Crowns lifted. Balanced crowns.	No works presently required	20+	B2	Retain		3.8
G151B	Wild Cherry	10	320	5	5	5	5.0	N/A	2	EM	Good	Planted linear group. Crowns lifted. Balanced crowns.	No works presently required	20+	B2	Retain		3.8
G151C	Wild Cherry	10	320	5	5	5	5.0	N/A	2	EM	Good	Planted linear group. Crowns lifted. Balanced crowns.	No works presently required	20+	B2	Retain		3.8
G151D	Wild Cherry	10	320	5	5	5	5.0	N/A	2	EM	Good	Planted linear group. Crowns lifted. Balanced crowns.	No works presently required	20+	B2	Retain		3.8
G151E	Wild Cherry	10	320	5	5	5	5.0	N/A	2	EM	Good	Planted linear group. Crowns lifted. Balanced crowns.	No works presently required	20+	B2	Retain		3.8
G151F	Wild Cherry	10	320	5	5	5	5.0	N/A	2	EM	Good	Planted linear group. Crowns lifted. Balanced crowns.	No works presently required	20+	B2	Retain		3.8
G151G	Wild Cherry	10	320	5	5	5	5.0	N/A	2	EM	Good	Planted linear group. Crowns lifted. Balanced crowns.	No works presently required	20+	B2	Retain		3.8
G152	Linear group	7	250	4	4	4	4.0	0.5	0.5	EM	Fair	Unmanaged linear group at edge of playing field, watery ditch at base, ground to east notably soft; hawthorn predominant, with elder, blackthorn; occasional self-set specimens of ash, cherry plum; widespread bramble; three or four windthrown thorns; dimensions shown are indicative	No works presently required	10+	C2	Retain		3.0

Tree ID	Species	Height (m)	Stem Dia (mm)	Branch sp'd N (m)	Branch sp'd E (m)	Branch sp'd S (m)	Branch sp'd W (m)	1st significant branch ht (m)	Canopy height (m)	Life Stage	Vitality	General observations	Preliminary management recommendations	Est'd Remaining Contribution (Yrs)	Cat Grading	Remove/Part Remove/Retain	Quantities for removal	RPA Radius (m)
G152-A	Field Maple	10	260;200	6	10	4	2.0	2	2	EM	Good	Twinstem on west bank of watery ditch; all growth to east, away from dominant oak to west	No works presently required	20+	C2	Retain		3.9
T153	Common Oak	14	1000	5	9	9	4.0	2-SE	1.8	M	Fair	Historic Ganoderma spp. Wood decay fungal bracket at base to north east. Exposed desiccated wood above bracket. Main stem trifurcates at approximately 3m. Large diameter wound in north stem. Large cavity visible. Potential hollow main stem. Further decay cavities on north stem. Stem also topped, section of large diameter dead wood remaining. Low crown height to south.	No works presently required	40+	A3	Retain		12.0
G154	Norway Maple	to 14	to 450	5	5	5	5.0	2	3	EM	Good	Trio of crown-lifted trees in mown grass area - mower scuff wounds to exposed buttress roots	No works presently required	20+	B2	Retain		5.4
T155	London Plane	18	680	8	8.5	8	7.0	3-S	2	M	Good	Balanced crown. Crown lifted. Unoccluded wounds in crown.	No works presently required	40+	A2	Retain		8.2
T156	Common Oak	18	1210	6	7	7	7.0	2-SE	2	M	Good	Prominent tree given size and scale. Locally notable. Crown historically reduced. Abrupt angles on branches and regeneration. Large diameter unoccluded pruning wounds. Decay cavities at old branch wounds. Habitat holes. Pronounced basal flare and buttress roots. Fistulina hepatica at base to south. Potential Ganoderma spp bracket to south east and north east. Sound wood around brackets.	No works presently required	40+	A3	Retain		14.5
T157	Oak	13	900	5	6.5	7	5.0	4	5	OM	Fair	Reduced crown with 2-3m re-growth; pockets of established decay associated with historic limb failures on upper stem - fruiting bodies of <i>Inonotus dryadeus</i> to east and west; historic decay at tear wound on limb to north-east	No works required at time of survey	40+	B3	Retain		10.8
G158	Leyland Cypress		400	4	4	4	4.0	N/A	0	EM	Fair	Planted screen. Crowns topped. Side to west unmanaged.	No works presently required	10+	C2	Retain		4.8
G159-A	Sycamore	10	420	5	2	7	5.0	2-S	3	EM	Good	End tree in row on property boundary; crown growth mostly to south, away from dominant neighbour; stem ivy-clad; basal growth	No works required at time of survey	20+	C2	Retain		5.0
G159-B	Ash	12	440	8	7	10	7.0	2.5-S	3	M	Good	Occasional medium-sized deadwood branches and stubs; also suspended branch to west	Remove larger deadwood and suspended branch if adjacent to proposed works	20+	B2	Retain		5.3
G159-C	Sycamore	10	570 at 1000mm	9	9	9	9.0	1.5	2	M	Good	Diameter at 1000 Dominant tree in row; occasional sub-50mm diameter deadwood; pocket of established decay where limb historically lost at crown break	Remove larger deadwood if adjacent to proposed works	20+	B2	Retain		6.8
G159-D	Sycamore	12	380;350	5	7	7.5	6.5	2-E	2.5	EM	Good	Upright form, 3no principal stems rising vertically from low crown break; minor deadwood	No works required at time of survey	20+	C2	Retain		6.2
G159-E	Ash	13	440	6	3	3	3.0	4-NW	4	EM	Good	Upright form - tallest tree in line; occasional sub-75mm diameter deadwood in high crown; minor pockets of decay and also good occlusion at lower stem branch failure wounds	Remove deadwood if adjacent to proposed works	10+	C2	Retain		5.3
G159-F	Sycamore	18	840	7	7	7	6.0	4-N	4	M	Good	End of group. Existing hard surface access road to north. Co-dominant stems from approximately 3m. Union appears sound. Hungup dead branch in crown. Light ivy encroachment on main stem.	Remove hung up dead branch.	20+	B2	Retain		10.1
T160	Common Oak	6	250;300;250	5	5	5	5.0	N/A	0	SM	Fair	Growing through existing chain link fence. Multi stems. Suggesting past felling and regeneration.	No works presently required	10+	C2	Retain		5.6
G161	Field Maple	10	300	5	5	5	5.0	N/A	0	SM to EM	Good	Informal group.	No works presently required	10+	C2	Retain		3.6

Tree ID	Species	Height (m)	Stem Dia (mm)	Branch sp'd N (m)	Branch sp'd E (m)	Branch sp'd S (m)	Branch sp'd W (m)	1st significant branch ht (m)	Canopy height (m)	Life Stage	Vitality	General observations	Preliminary management recommendations	Est'd Remaining Contribution (Yrs)	Cat Grading	Remove/Part Remove/Retain	Quantities for removal	RPA Radius (m)
T162	Common Oak	8	350	6	6	6	6.0	2-S	1.5	SM	Good	Growing railway side of fence. Existing hard surface to south of tree. No obvious direct damage recorded from surface root activity. Root zone highly modified. Railway infrastructure to north. Low crown height. Goblet shaped crown.	No works presently required	10+	C2	Retain		4.2
G163	Ash, walnut, bay	5	250	4	4	4	4.0	N/A		Y to SM	Fair	Informal group. Growing on railway land. Bases not accessible or visible. Dense ivy on chain link fence. Existing hard surface site side of trees. No obvious direct damage recorded from surface root activity.	No works presently required	10+	C2	Retain		3.0
G164	Common Oak	12	300	4	4	4	4.0	N/A	1.5	SM	Good	Group of four planted trees. Redundant tree stakes present. Bases inaccessible. Mutual crown suppression. Approx 10m from chain link site fence.	No works presently required	20+	B2	Retain		3.6
G165	Hawthorn, blackthorn, elder	3.5	100	2	2	2	2.0	N/A	0	SM	Fair	Lapsed hedgerow at east extents. Standing water to south form part of east extents.	No works presently required	10+	C2	PRG	235m2	1.2
T166	Cherry Plum	6	420	5	5	5	2.0	2-E	0.5	M	Good	Cherry plum. 1.5m from existing access road. Manhole to north east of base. Potential modified root zone. Multi stems from approx 1.6m. crown previously lifted. Dense crown. Suppression to west.	No works presently required	10+	C2	Retain		5.0
T167	Cherry Plum	5.5	380	3	2	3.5	3.5	2.5-W	1	EM	Fair	Crown suppression to east. 3m from existing concrete slabbed path. Multi stems from approx 1.6m. Unions appear sound. Crown previously lifted. Saprophytic fungi at old pruning wounds to north.	No works presently required	10+	C2	Retain		4.6
G168A	Silver Birch	14	480	5	5	5	3.0	3-NE	1	M	Good	Part of informal planted group.	No works presently required	20+	B2	Retain as Monolith		5.8
G168B	Silver Birch	17	550	6	6	6	4.0	4-NE	0.5	M	Good	Slight lean to east. Correcting in upper crown. Decay entry point at hold branch wounds.	No works presently required	20+	B2	Retain		6.6
G168C	Silver Birch	6	400	4	3	2	6.0	N/A	2	EM	Fair	Dieback in upper crown. Hanging broken branches to north.	Remove hanging broken branches. Remove dead wood.	10+	C2	Retain		4.8
G168D	Silver Birch	10	400	2	3	6.5	5.0	0.5-S	0.5	EM	Good	Co-dominant stems from approx 1.5m. Union appears sound. Mutual crown suppression.	No works presently required	20+	B2	Retain		4.8
T169	Ash	16	600	0	8	8	8.0	N/A	0	M	Fair	Growing on railway land. Crown cut back to north. Remaining crown extending into site. Extensive pruning wounds. Limited long term useful remaining life expectancy	No works presently required	10+	C2	Retain		7.2
G170A	Norway Maple	17	730	6	6	6	6.0	2.5-N	2	M	Fair to good	Part of informal planted group. Crown break at approx 3m. Multi stems. Unions not visible. Moderate diameter deadwood in middle crown. Girdling roots at base. Mammal burrowing around base.	Remove dead wood	20+	B2	Retain		8.8
G170B	Norway Maple	14	430	5	5	5	5.0	3-E	2	EM	Fair	Dieback and dead wood in middle crown. Girdling root to east. Elongated seam of decayed wood to north.	Remove dead wood	10+	C2	Retain		5.2
G170C	Norway Maple			0.5	0.5	0.5	0.5	N/A		EM	Dead	Standing dead tree.	Monolith at approx 2.5m	<10	U	Retain		3.6
G170D	Norway Maple	8	320	4	4	4	4.0	N/A	1.8	SM	Good	Co-dominant stems from approx 2m. Union appears sound. Historic mammal damage recorded at base of tree.	No works presently required	10+	C2	Retain		3.8
G171	Elder	4	150	3	3	3	3.0	N/A	0	SM to EM	Fair	Informal group. Collapsed stems in places.	No works presently required	10+	C2	PRG	38m2	1.8
T172	Cherry Plum	6	400	4	4	4	4.0	N/A	1.5	M	Fair	Existing access road 2.5m north. Multi stems from approx 2m. Crown previously lifted. Cherry plum	No works presently required	10+	C2	Remove		4.8
G173	Cherry Plum	4	280	3.5	3.5	3.5	3.5	N/A	0	SM	Fair	Informal group of cherry plum. Failed stems. Crowns lifted in places.	No works presently required	10+	C2	Remove		3.4

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G174A	Silver Birch	16	600	4.5	4.5	4.5	7.0	2-W	3	M	Good	Part of informal planted group. Main stem trifurcates at approx 2m. Union appears sound. Existing hard surface access road 2m west. Concrete surface.	No works presently required	20+	B2	Retain		7.2
G174B	Silver Birch	12	400	4	3	5	6.0	N/A	1	EM	Fair	Co-dominant stems from approx 1m. Fused stems.	No works presently required	20+	B2	Retain		4.8
G174C	Silver Birch	14	500	3	5	5	3.0	N/A	3	M	Fair	Dieback and moderate diameter deadwood in upper crown.	No works presently required	10+	C2	Retain		6.0
G174D	Silver Birch	16	350	5.5	5.5	5.5	5.5	N/A		EM	Good	Balanced crown.	No works presently required	20+	B2	Retain		4.2
G175	Sycamore	17	600	6	6	6	6.0	N/A	0	M	Fair	Group of three trees. Growing adjacent to works site entrance. Existing access road present. No obvious direct damage recorded from surface root activity. Dense ivy on stems. Mutual suppression.	No works presently required	20+	B2	Retain		7.2
T176	Hawthorn	5	200;150;200	3.5	3.5	3.5	3.5	N/A	0	EM	Fair	Growing on steep slopes back. Multi stems. Light ivy encroachment on stems.	No works presently required	10+	C2	Remove		4.4
T177	Hazel	3.5	150	3.5	3	2	2.5	N/A	0	SM	Fair	Growing on steep slopes bank. 1.2m from head wall.	No works presently required	10+	C2	Remove		1.8
T178	Hazel	3	60;60;60;60	1.5	1.5	1.5	1.5	N/A		SM	Fair	Multi stem regeneration from old stump.	No works presently required	10+	C2	Remove		1.4
T179	Ash	18	800	8	8	4	8.0	6-E	5	M	Good	Growing directly on river bank. Co-dominant stems from approx 1.8m. fused basal stem at union. Mutual crown suppression	No works presently required	20+	B2	Remove		9.6
T180	Ash	10	250;250;250	4	4	4	4.5	3-S	1.5	EM	Good	Growing on steep slopes bank. Three stems from ground level. Lean on north stem. Mutual crown suppression. Light ivy encroachment on central stem.	No works presently required	10+	C2	Remove		5.2
T181	Hazel	4	100;60;60;60	2	2	2	2.0	N/A	0	EM	Fair	Multi stems from ground level. Suggesting past coppice.	No works presently required	10+	C2	Remove		1.9
T182	Yew	5	550	4	6	3	2.0	2	2	M	Fair	Lean to east; crown-lifted; minor crown dieback; occasional sub-80mm diameter deadwood; ground to west recently disturbed and with many holes	No works required at time of survey	20+	B2	Remove		6.6
T183	Mulberry	11	650	5.5	5.5	4.5	5.5	2	1.5	OM	Good	Crown-lifted, lower branches cut back from concrete surfacing to south and footpath to north; stem burred, with extensive decay associated with historical removal/failure of low limbs; compact and dense crown showing good vitality	No works required at time of survey	10+	B3	Remove		7.8
T184	Scots Pine	16	650	5	2	6	4.0	5.5	4	M	Poor	Slight lean to north; top of crown dead, adjacent to building; remainder of live crown all to south; previously ivy-clad, recently severed; also substantial elder at base to west, now dead, within half-circle of granite setts	Live crown to south has fair vitality and counterbalances stem lean; but recommended to remove if adjacent to proposed works; as minimum, 'top' to remove dead upper crown	10+	C2	Remove		7.8
T185	Yew	10	850	7	4.5	5	6.0	2	2	M	Good	Good form; deadwood patches to 80mm diameter	No works required at time of survey	20+	B2	Remove		10.2
G186-A	Ash	12	300;300	6.5	6.5	6.5	6.5	1.5	0.5	EM-M	Good	Pair of low-breaking twin stems / multistems growing hard by site boundary fence, forming crown as of one tree; frequent epicormic growth, but overall appearance of good vitality; dimensions shown are indicative, with mature elder to west included within group	No works required at time of survey	10+	C2	Retain		5.1
G186-B	Ash	12	300;300	6.5	6.5	6.5	6.5	1.5	0.5	EM	Good	See G504-A	See G504-A	10+	C2	Retain		5.1
T187	Ash	10	300	5.5	5.5	5.5	5.5	2.5	3	EM	Good	Growing within dense bramble at site boundary - no view of stem; good form	No works required at time of survey	10+	C2	Retain		3.6
T188	Ash	9	300	7	5	2.5	5.0	2	1	EM	Good	Pronounced lean to north, away from former companion stems to south - apparently re-growth from large stool now mostly gone	No works required at time of survey	10+	C2	Retain		3.6

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T189	Beech	18	1580	11.5	12	9	11.0	2.5-SW	4	OM	Fair	Tagged 0040; three large stems rising above crown break at 1.5m; exposed heartwood decay 0-1200mm to west, possibly associated with old limb tear; frequent large branch tears throughout crown; pockets of established decay associated with crown-lifting and branch failure wounds; decay on upper stems descending from failure points; frequent dieback and associated deadwood mostly sub-50mm diameter; infrequent larger deadwood and hanging branches within crown interior; central stems ivy-clad to upper crown	Remove hanging branches and larger deadwood if adjacent to proposed works	40+	B3	Retain		19.0
T190	Scots Pine	20	530	7	7	5	7.0	10	10	M	Fair	Tagged 0041; in dense bramble by boundary fence - lower stem ivy-clad; companion tree 4m to south, beyond boundary fence; live crown high, modest; handful of large deadwood branches below - assortment of tears and cracks here; handful of woodpecker holes on upper half of stem	No works required at time of survey	20+	B3	Retain		6.4
T191	Scots Pine	20	530 #	5	7	7	7.0	10	10	M	Fair	Beyond boundary fence - no access to base; companion tree to T508, and very similar	No works required at time of survey	20+	B3	Retain		6.4
G192	A Group	16	500	6.5	6.5	6.5	6.5	2	2	M	Good / Poor	Small copse between watercourses, behind site boundary fence - no access; includes mature sycamore, beech, pine; 1no large standing dead ash; branches overhanging site; occasional large diameter deadwood; ivy mostly light; dimensions shown are indicative	No works required at time of survey	20+	B2	Retain		6.0
G193	A Group	16	300;300;300	7	7	7	7.0	2	1.5	EM-M	Good / Fair	Trees growing close behind site boundary fence on narrow strip, widening to east, between fence and river; trees intermittent, larger to west; multi-stemmed sycamore and ash; occasional interaction with fencing - trees growing through wire mesh or occluding around posts; light ivy; group peters out at east end, with 4no standing dead semi-mature elms; dimensions shown are indicative	Removal of dead elms recommended if adjacent to proposed works	20+	B2	Retain		6.2
G194	A Group	7	350	4.5	4.5	4.5	4.5	N/A	0.5	SM	Good	Planted group of ahs, field maple. Elongated cavity on main stem of north tree. Mutual crown suppression.	No works presently required	10+	C2	Retain		4.2
T195	Norway Maple	18	500	5	6.5	10	4.0	N/A	5	M	Poor	Extensive dieback in upper and middle crown. Growing immediately adjacent to existing hard surface access. Heavy ivy encroachment on main stem.	Fell on the grounds of safety and sound arboricultural management.	<10	U	Retain		6.0
G196	A Group	20	1000	9	9	9	9.0	N/A	0	M	Good	Sporadic weeping willow, Turkey oak and hawthorn. Linear group. Knee rail to south. Mutual crown suppression. Broad Crowns.	No works presently required	20+	B2	Retain		12.0
G197A	Sycamore	14	300;250;250;80	5.5	5.5	5.5	5.5	N/A	0.5	EM	Fair	Multi stem form at ground level. Suggesting past felling and regeneration. Wire enveloped by stems to west. Fused and crossing/rubbing branches.	No works presently required	10+	C2	Retain		5.6
G198B	Sycamore	14	400	5.5	5.5	5.5	5.5	N/A	1	SM	Fair	Co-dominant stems from 0.5m. east stem multi stems from approx 1m. Crown growing through overhead utilities.	No works presently required	10+	C2	Retain		4.8
G198C	Sycamore	14	300	3.5	3.5	3.5	3.5	N/A	0.5	SM	Fair	Basal stems. Dense ivy encroachment on main stem.	No works presently required	10+	C2	Retain		3.6
G199A	Ash	12	350;280	6	6	6	6.0	N/A	2	EM	Good	Growing along fence boundary. Co-dominant stems from approx 1m. Union obscured. Basal flare in contact with wire fence.	No work's presently required	20+	B2	Retain		5.4
G199B	Sycamore	16	500	6	6	6	6.0	N/A	2	EM	Good	Growing along boundary fence. Dense ivy encroachment on main stem. Broad crown.	No works presently required	20+	B2	Retain		6.0
G199C	Sycamore	17	500	6	6	6	6.0	N/A	2	EM	Good	Dense ivy encroachment on main stem and into crown. Co-dominant stems from approx 1m. Union obscured by ivy	No works presently required	20+	B2	Retain		6.0

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T200	Silver Birch	15	370	4	4	7	5.0	2-W	0.5	EM	Fair	Growing as part of group. Decay pockets at old branch wounds. Co-dominant stems from approx 2m. Fused lateral branch in union. Crown previously lifted	No works presently required	10+	C2	Retain		4.4
T201	Common Oak	18	900	10	10	10	10.0	4-W	3	M	Good	Growing along river bank. Broad crown. Multi stem from approx 12m. Occasional storm damage recorded in middle crown. Frayed wounds. Hollow main stem. Basal cavity to south.	Consider sonic tomography test around basal flare and points up main stem to record extent of internal decay and requirements for any crown works.	40+	B2	Retain		10.8
T202	Common Oak	18	800	4	8	10	10.0	3-S	3	M	Fair	Growing on west bank of river. Unoccluded wounds on main stem, decay visible. Desiccated white rot and brown rot. Occasional storm damage recorded in middle crown. Occasional large diameter dead wood in middle crown.	No works presently required	40+	B3	Retain		9.6
T203	Common Oak	16	400	6	6	8	7.0	3-S	2.5	SM	Good	Growing to west of river. Base not accessible. Measurements estimated. Multi stems from approx 3m. Occasional small diameter dead wood in lower crown.v	No works presently required	20+	B2	Retain		4.8
T204	Common Oak	14	300	3	6	7	1.0	4-S	1	SM	Good	Growing to west of river. Hawthorn in root zone. Crown suppression. Base not accessible, measurements estimated.	No works presently required	20+	B2	Retain		3.6
G205	A Group	5	100	3	3	3	3.0	N/A	0	Y	Good	Group of self sown ash. Growing along river bank. Dense bramble around majority of group.	No works presently required	10+	C2	PRG	65m2	1.2
T206	Common Oak	12	600	4	5	6	6.0	4-S	3	M	Fair	Dense ivy encroachment on main stem and into crown. Crown previously reduced. Loss of vitality. Elongated exposed desiccated white rot present	No works presently required	20+	C3	Retain		7.2
T207	Common Oak	20	1100	6	6	6	6.0	N/A	4	M	Good	Tag 0082. Decayed fungi around base. Suspected to be fistulina hepatica. Crown previously reduced. Large diameter pruning wounds. Pronounced basal flare.	No works presently required	40+	A3	Retain		13.2
T208	Common Oak	16	600	7	7	7	7.0	N/A	1	M	Good	Balanced crown. Pronounced basal flare.	No works presently required	40+	B2	Retain		7.2
T209	Common Oak	20	1150	10	10	10	10.0	N/A	1	M	Good	Prominent tree. Broad crown. Co-dominant stems from approx 5m. Union appears sound. Seam of reaction wood on north side of main stem.	No works presently required	40+	A3	Retain		13.8
G210	A Group	20	600	9	9	9	9.0	N/A	4	M	Good	Group of oak, poplar and Norway maple in third party property. No access to bases. Crowns extending into potential access route. High crowns, lifted in past. Poplars pollard in past. Good regrowth.	No works presently required	40+	B2	Retain		7.2
G211	A Group	6	150	3.5	3.5	3.5	3.5	N/A	0.5	Y	Good	Group of young oak, ash, privet. Growing on west side of stream.	No works presently required	10+	C2	Retain		1.8
T212	Common Oak	7	190	4	4	4	4.0	N/A	1	Y	Good	Balanced crown. Planted tree.	No works presently required	20+	C2	Translocation		2.3
T213	London Plane	6.5	150	3	3	3	3.0	N/A	1.5	Y	Good	Balanced crown. Planted tree.	No works presently required	20+	C2	Retain		1.8
T214	Italian Alder	3.5	100	1.5	1.5	1.5	1.5	N/A	1.8	Y	Good	Planted tree.	No works presently required	20+	C2	Retain		1.2
T215	Field Maple	12	450	6	6	6	6.0	N/A	3.5	M	Fair	Slight crown thinning at middle crown. Crown previously lifted. Unoccluded wounds. Storm damage recorded. Goblet shaped crown. Occasional moderate diameter dead wood in middle crown.	No works presently required	20+	B2	Retain		6.1
G216	A Group	18	400;400;400;400	9	9	9	9.0	N/A	1	M	Good	Sporadic common oak and clumps of scrub. Goat willow collapsed in places. Prominent trees growing in valley. Saturated ground in places.	No works presently required	40+	A2	Retain		8.1
G217	Common Oak	20	100	9	9	9	9.0	N/A	2	M	Good	Group of 4no. Oaks. Mutual crown suppression. Occasional storm damage.	No works presently required	40+	A2	Retain		9.6

Tree ID	Species	Height (m)	Stem Dia (mm)	Branch sp'd N (m)	Branch sp'd E (m)	Branch sp'd S (m)	Branch sp'd W (m)	1st significant branch ht (m)	Canopy height (m)	Life Stage	Vitality	General observations	Preliminary management recommendations	Est'd Remaining Contribution (Yrs)	Cat Grading	Remove/Part Remove/Retain	Quantities for removal	RPA Radius (m)
G218	A Group	14	300*	6	6	6	6.0	N/A	1	SM	Good	Measurements estimated.	No works presently required	20+	B2	Retain		3.6
G219	A Group	14	300*	6	6	6	6.0	N/A	1	SM	Good	Measurements estimated.	No works presently required	10+	C2	Retain		3.6
HCC T1-T7	A group	3	60	1.5	1.5	1.5	1.5	N/A	1	NP	Good	Planted trees.	No works presently required	20+	C2	Translocation T1 & T2 & T5 & T6 & T7		2.3

Appendix C. Glossary of Terms

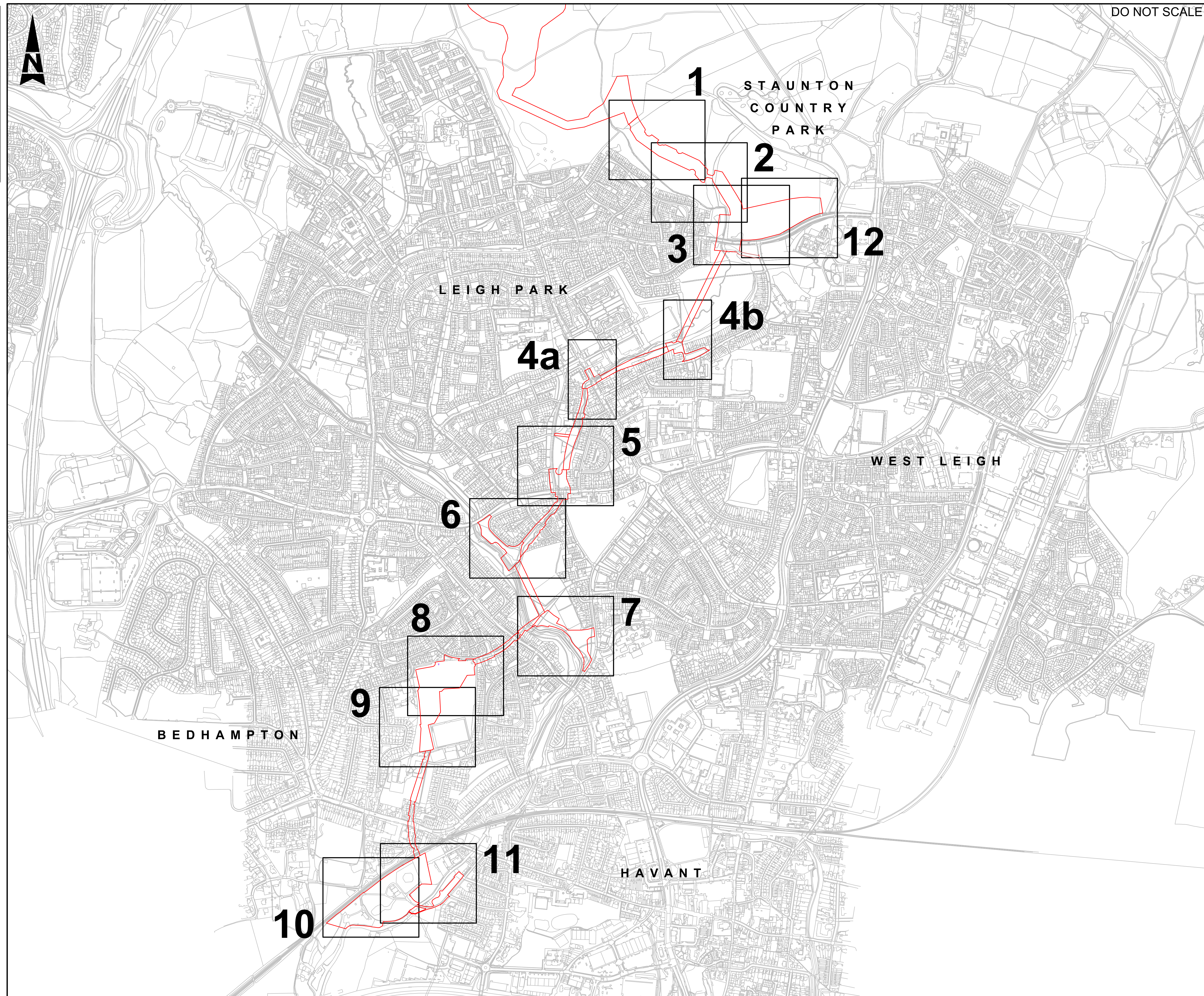
Table C-1 Glossary Table

Term	Description
Access Facilitation Pruning	One-off tree pruning operation, the nature and effects of which are without significant adverse impact on tree physiology or amenity value, which is directly necessary to provide access for operations on site.
Adaptive Growth	The process whereby wood formation is influenced both in quantity and in quality by the action of gravitational force and mechanical stresses on the cambial zone
Amenity Value	The environmental and landscape benefits of trees as opposed to their commercial value for timber
Ancient Woodland	Sites which have been wooded since at least 1600, as defined by English Nature and recognised as being of high nature conservation value, whether managed or not. They may be semi-natural or replanted.
Arboricultural Method Statement	Methodology for the implementation of any aspect of development that is within the root protection area or has the potential to result in loss of or damage to a tree to be retained.
Arboriculture	The study and care of trees and other woody vegetation
Arboriculturist	A person who has, through relevant education, training and experience, gained expertise in the field of trees in relation to construction.
Cavity	An open wound, characterised by the presence of decay and resulting in a hollow
Co-dominant stems	Where a tree's main stem splits into two leaders, can also be called twin-stemmed.
Competent person	A person who has training and experience relevant to the matter being addressed and an understanding of the requirements of the particular task being approached.
Construction	Site-based operations with the potential to affect existing trees.
Construction Exclusion Zone	The area based on the root protection area to which access is prohibited for the duration of a project.
Coppice	A traditional method of woodland management in which young tree stems are repeatedly cut down to near ground level. In subsequent growth years, many new shoots will emerge, and, after a number of years the coppiced tree, or stool, is ready to be harvested, and the cycle begins again
Crown clearance	This is the removal of all dead, dying and diseased branches; in addition branches that are cleared away from a specific hazard e. g. live railway line.
Crown lifting	The removal of lower branches to provide a desired amount of clearance above ground level. This can be achieved either by the complete removal of a branch or only parts of which extend below the desired height
Crown reduction	The overall reduction of both the height and spread of the crown.
Decay	Process of degradation of woody tissues by fungi and bacteria through decomposition of cellulose and lignin.
Deadwood	Deadwood is often present within the crown or on the stems of trees. In some instances it may be an indication of ill health; however, it may also indicate natural growth processes. If a target is present beneath the tree, and falling deadwood may cause injury or damage it should be removed; if no target is present the deadwood may be retained intact for conservation purposes (insects, fungi, birds etc.).
Epicormic growth	A secondary growth from dormant adventitious buds on the stem or main branches.



Term	Description
Failure	In connection with tree hazards, a partial or total fracture within woody tissue or loss of cohesion between roots and soil.
Hazard beam	A branch that has over-extended in which strong internal stresses may occur without the compensatory formation of extra wood (longitudinal splitting may occur in some cases).
Hung-up limb	Dead or fallen branch from within the crown or from another tree's crown that has failed and been caught up by, and resting on, branches of a tree
Included Bark Junction	Pattern of development at branch junctions where bark is turned inward rather than pushed out. Potential weakness due to a lack of a woody union.
Ivy Growth	Ivy growth may ascend into the tree's crown, increasing wind resistance, concealing potential defects and reducing the tree's photosynthetic capacity. Ivy growth is often acceptable in woodland areas as a conservation benefit.
Monolith	A large bulk of standing dead wood. Usually the trunk of the tree or the trunk with the base of the branch frame work. These should be retained for wildlife habitat when the risk is appropriate for the location.
Pollarding	This involves the removal of whole branches to leave only the main trunk. In species such as willows and poplars such significant pruning is acceptable with new branches developing from the pollard heads. Secondary pruning of the new wood can help form a new canopy to the tree several years after the initial pollard
Reaction Wood	Specialised secondary xylem, which develops in response to a lean or similar mechanical stress, attempting to restore the stem to the vertical.
Root Protection Area (RPA)	The 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.
Service	Any above or below ground structure or apparatus required for utility provision.
Stem	The principal above-ground structural component(s) of a tree that supports its branches.
Structure	A manufactured object, such as a building, carriageway, path, wall, service run, and built or excavated earthwork.
Structural Defect	Internal or external points of weakness, which reduce the stability of the tree
Sub-dominant stem	A branch within the crown that is not the dominant leader
Suppressed	Trees which are dominated by surrounding vegetation and whose crown development is restricted from above.
TPO	A Tree Preservation Order is an order made by a Local Planning Authority which in general makes it an offence to cut down, lop, top, uproot, wilfully damage or wilfully destroy a tree without first getting permission. Tree Preservation Orders are usually made to protect trees that make a significant contribution to the amenity of an area. They may particularly be made when it is felt that a tree may be under threat.
Tree Constraints Plan	Abbreviated to TCP. Plans showing specific tree constraints including Root Protection Areas and Crown spread.
Tree Protection Plan	Abbreviated to TPP. Scaled drawing, informed by descriptive text where necessary, based upon the finalised proposals, showing trees for retention and illustrating the tree and landscape protection measures.
Visual Tree Assessment	A non-invasive method of examining the health and structural condition of trees. Developed by Claus Mattheck and David Breloer 1994
Wound	Any injury, which induces a compartmentalisation response
Wound Wood	Wood with atypical anatomical features, formed in the vicinity of a wound and a term to describe the occluding tissues around a wound as opposed to the ambiguous term "callus."

Appendix D. Tree Protection Plans



DO NOT SCALE

SAFETY, HEALTH AND ENVIRONMENTAL INFORMATION

In addition to the hazards/risks normally associated with the types of work detailed on this drawing, note the following:

CONSTRUCTION

Refer to designer's risk assessment

MAINTENANCE/CLEANING

Refer to designer's risk assessment

DECOMMISSIONING/DEMOLITION

Refer to designer's risk assessment

It is assumed that all works will be carried out by a competent contractor working, where appropriate, to an approved method statement

[illegible]

C02	11/05/2024	General updates	NA	TD	JH
Rev.	Date	Description	By	Chk'd	App

Suitability	Status
SUITABLE FOR INFORMATION	S2



Nova North
11 Bressenden Place
Westminster
London
SW1E 5BY
Tel: +44 (0)20 7121 20000
Fax: +44 (0)1206 732020
www.atkinsrealis.com
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Client

Telephone: Havant (023) 9249 9888
Fax: Havant (023) 9245 3632
Website: www.portsmouthwater.co.uk
Registered Office: PO Box 8 West Street
Havant Hampshire PO9 1LG
REGISTERED IN ENGLAND No. 2536455

Portsmouth Water



Project Title

HAVANT THICKET RESERVOIR

Drawing Title

PIPELINE
TREE PROTECTION PLAN
KEY PLAN

Scale 1:4,000	Designed X	Drawn NA	Checked TD	Authorised JH
Original Size A1	Date --/--/--	Date 30/06/2023	Date 30/06/2023	Date 30/06/2023

Drawing Number	Revision
HTR-ATK-PZ-BR-DR-L-0001	C02

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In addition to the hazards/risks normally associated with the types of work detailed on this drawing, note the following:

CONSTRUCTION

Refer to designer's risk assessment

MAINTENANCE/CLEANING

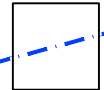
Refer to designer's risk assessment

DECOMMISSIONING/DEMOLITION

Refer to designer's risk assessment

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BOUNDARIES



HIGHWAY BOUNDARY

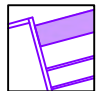


SCHEME RED LINE BOUNDARY & SITE PERIMETER FENCE

SCHEME PROPOSALS



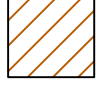
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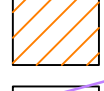
CULVERT UPGRADE WORKS



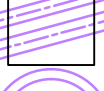
HAUL ROUTE



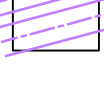
WORKING WIDTH



TURF STRIP



PIPELINE, OPEN CUT & COVER



PIPELINE, MICRO DRILLED (TUNNELED)



PIPELINE SHAFT TO MICRO DRILLED SECTION

TREE FEATURES & SURVEY



CATEGORY A TREE



CATEGORY B TREE



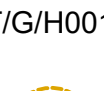
CATEGORY C TREE



CATEGORY U TREE



TREE GROUP (COLOUR TO BS)



TREE / GROUP / HEDGE REF. NO.

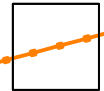


ROOT PROTECTION AREA (RPA)

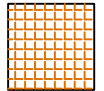


TREE ROOT SYSTEM (RADAR SURVEY)

TREE PROTECTION / WORKS / REMOVALS



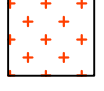
PROTECTIVE FENCING (INDICATIVE)



PROTECTIVE MATTING (INDICATIVE)



TREE REMOVAL TO FACILITATE WORKS



TREE GROUP / HEDGE REMOVAL TO FACILITATE WORKS



TREE TO BE TRANSLOCATED



TREE TO BE COPPICED

OTHER SPECIFIC TREE WORKS AS NOTED ON DRAWINGS

C03	11/11/2024	General updates	NA	TD	JH
C02	11/05/2024	General updates	NA	TD	JH
Rev.	Date	Description	By	Chk'd	App'd

SUITABLE FOR INFORMATION S2



Nova North
11 Bressenden Place
Westminster
London
SW1E 5BY
Tel: +44 (0)20 7121 20000
Fax: +44 (0)1206 732020
www.atkinsrealis.com
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Client
Telephone: Havant (023) 9249 9888
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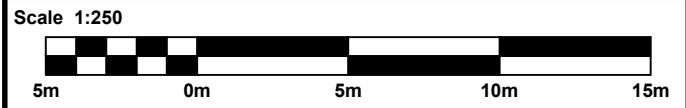
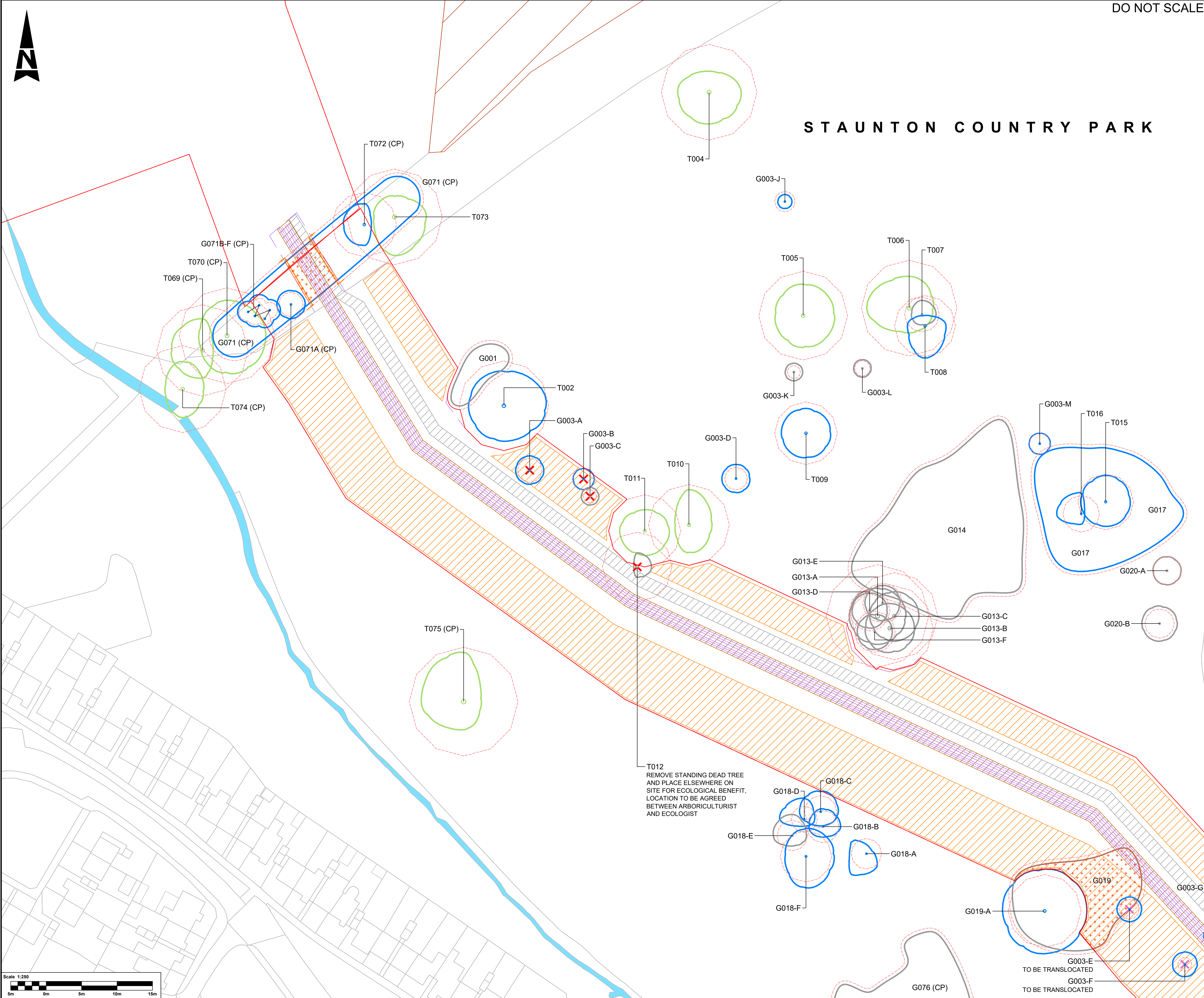
Project Title
HAVANT THICKET RESERVOIR

Drawing Title
PIPELINE
TREE PROTECTION PLAN
SHEET 1 of 12

Scale	Designed	Drawn	Checked	Authorised
1:500	X	NA	TD	JH
Original Size	Date	Date	Date	Date
A1	--/--/--	30/06/2023	30/06/2023	30/06/2023

Drawing Number
HTR-ATK-PZ-BR-DR-L-0002

Revision
C03



SAFETY, HEALTH AND ENVIRONMENTAL INFORMATION

In addition to the hazards/risks normally associated with the types of work detailed on this drawing, note the following:

CONSTRUCTION

Refer to designer's risk assessment

MAINTENANCE/CLEANING

Refer to designer's risk assessment

DECOMMISSIONING/DEMOLITION

Refer to designer's risk assessment

It is assumed that all works will be carried out by a competent contractor working, where appropriate, to an approved method statement

BOUNDARIES



HIGHWAY BOUNDARY



SCHEME RED LINE BOUNDARY & SITE PERIMETER FENCE

SCHEME PROPOSALS



MAIN PIPELINE WORKS



CULVERT UPGRADE WORKS



HAUL ROUTE



WORKING WIDTH



TURF STRIP



PIPELINE, OPEN CUT & COVER



PIPELINE, MICRO DRILLED (TUNNELED)



PIPELINE SHAFT TO MICRO DRILLED SECTION

TREE FEATURES & SURVEY



CATEGORY A TREE



CATEGORY B TREE



CATEGORY C TREE



CATEGORY U TREE



TREE GROUP (COLOUR TO BS)



TREE / GROUP / HEDGE REF. NO.



ROOT PROTECTION AREA (RPA)



TREE ROOT SYSTEM (RADAR SURVEY)

TREE PROTECTION / WORKS / REMOVALS



PROTECTIVE FENCING (INDICATIVE)



PROTECTIVE MATTING (INDICATIVE)



TREE REMOVAL TO FACILITATE WORKS



TREE GROUP / HEDGE REMOVAL TO FACILITATE WORKS



TREE TO BE TRANSLOCATED



TREE TO BE COPPICED

OTHER SPECIFIC TREE WORKS AS NOTED ON DRAWINGS

C03	11/11/2024	General updates	NA	TD	JH
C02	11/05/2024	General updates	NA	TD	JH
Rev.	Date	Description	By	Chk'd	App'd

SUITABLE FOR INFORMATION S2



Nova North
11 Bressenden Place
Westminster
London
SW1E 5BY
Tel: +44 (0)20 7121 20000
Fax: +44 (0)1206 732020
www.atkinsrealis.com
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Client
Telephone: Havant (023) 9249 9888
Fax: Havant (023) 9245 3632
Website: www.portsmouthwater.co.uk
Registered Office: PO Box 8 West Street
Havant Hampshire PO9 1LG
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Project Title
HAVANT THICKET RESERVOIR

Drawing Title
PIPELINE
TREE PROTECTION PLAN
SHEET 2 of 12

Scale	Designed	Drawn	Checked	Authorised
1:500	X	NA	TD	JH
Original Size	Date	Date	Date	Date
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Drawing Number
HTR-ATK-PZ-BR-DR-L-0003

Revision
C03

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CONSTRUCTION

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MAINTENANCE/CLEANING

Refer to designer's risk assessment

DECOMMISSIONING/DEMOLITION

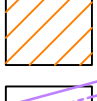
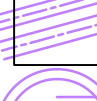
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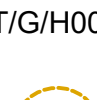
BOUNDARIES

-  HIGHWAY BOUNDARY
-  SCHEME RED LINE BOUNDARY & SITE PERIMETER FENCE

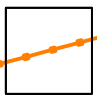
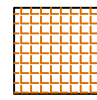
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-  HAUL ROUTE
-  TURF STRIP
-  PIPELINE, MICRO DRILLED (TUNNELED)
-  CULVERT UPGRADE WORKS
-  WORKING WIDTH
-  PIPELINE, OPEN CUT & COVER
-  PIPELINE SHAFT TO MICRO DRILLED SECTION

TREE FEATURES & SURVEY

-  CATEGORY A TREE
-  CATEGORY C TREE
-  TREE GROUP (COLOUR TO BS)
-  ROOT PROTECTION AREA (RPA)
-  CATEGORY B TREE
-  CATEGORY U TREE
-  TREE / GROUP / HEDGE REF. NO.
-  TREE ROOT SYSTEM (RADAR SURVEY)

TREE PROTECTION / WORKS / REMOVALS

-  PROTECTIVE FENCING (INDICATIVE)
-  TREE REMOVAL TO FACILITATE WORKS
-  TREE TO BE TRANSLOCATED
-  PROTECTIVE MATTING (INDICATIVE)
-  TREE GROUP / HEDGE REMOVAL TO FACILITATE WORKS
-  TREE TO BE COPIED

OTHER SPECIFIC TREE WORKS AS NOTED ON DRAWINGS

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C03	11/11/2024	General updates	NA	TD	JH
C02	11/05/2024	General updates	NA	TD	JH
Rev.	Date	Description	By	Chk'd	App'd

SUITABLE FOR INFORMATION S2

AtkinsRéalis

Nova North
11 Bressenden Place
Westminster
London
SW1E 5BY
Tel: +44 (0)20 7121 20000
Fax: +44 (0)1206 732020
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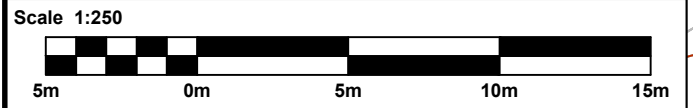
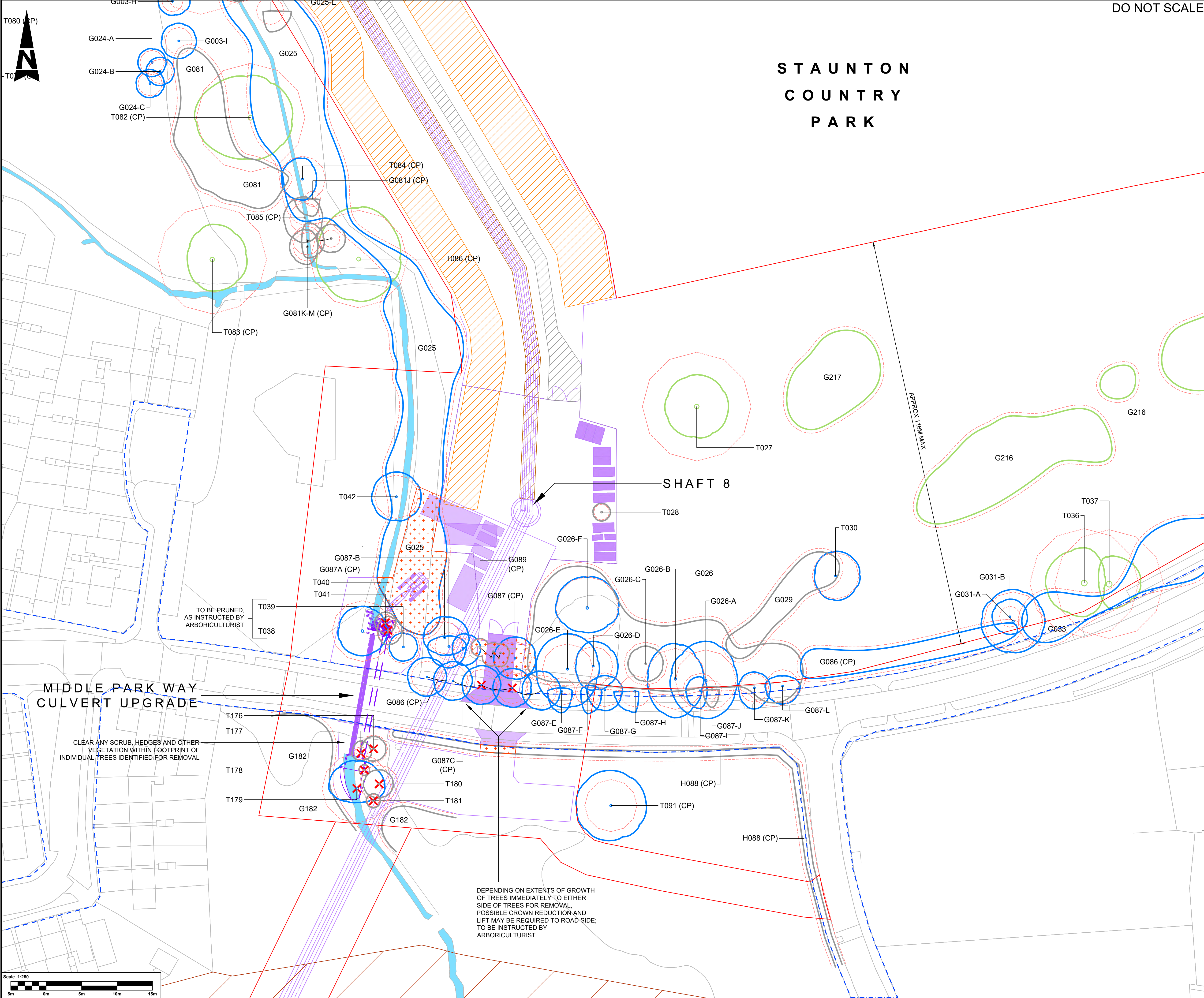
Project Title
HAVANT THICKET RESERVOIR

Drawing Title
PIPELINE
TREE PROTECTION PLAN
SHEET 3 of 12

Scale	Designed	Drawn	Checked	Authorised
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Original Size	Date	Date	Date	Date
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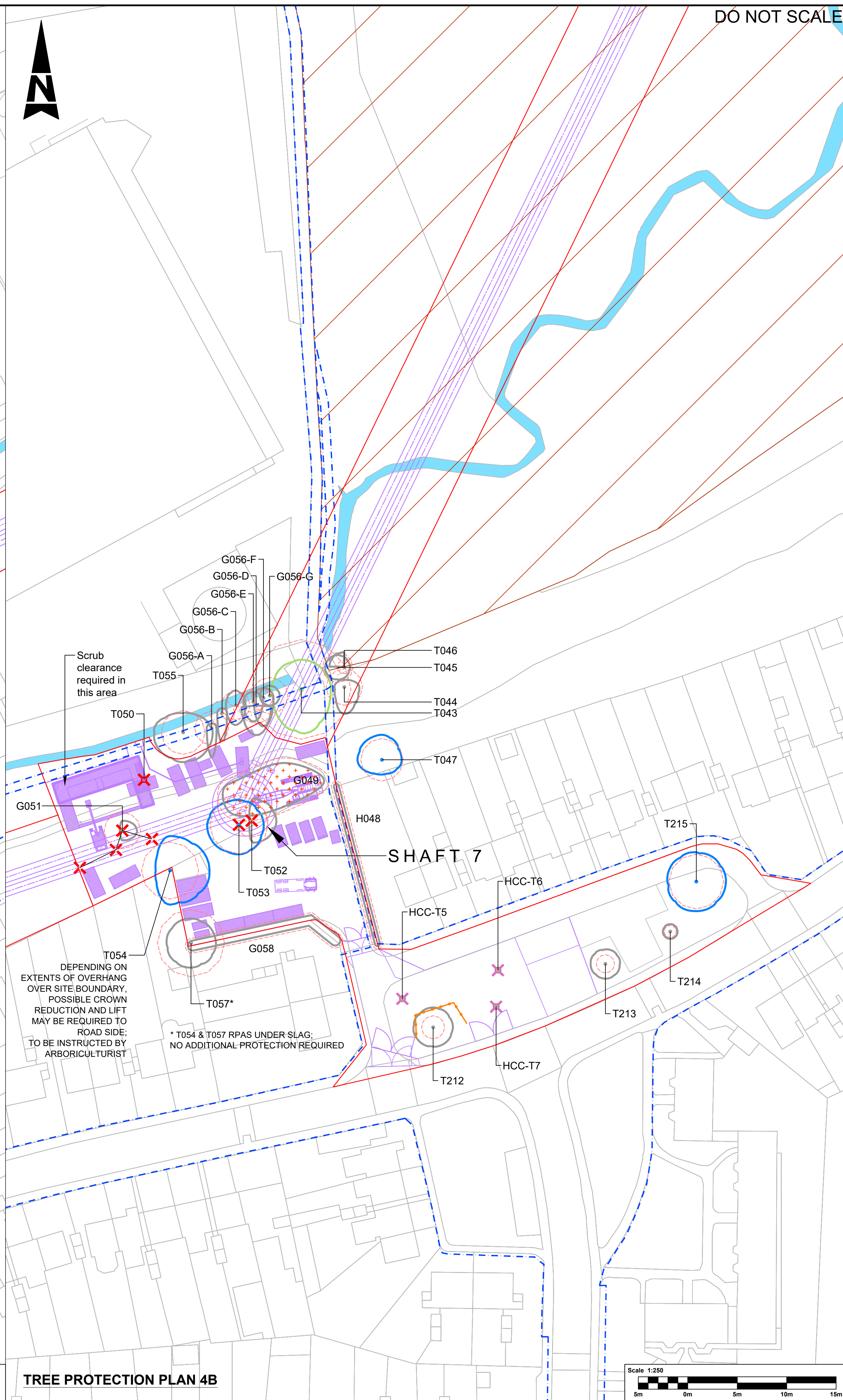
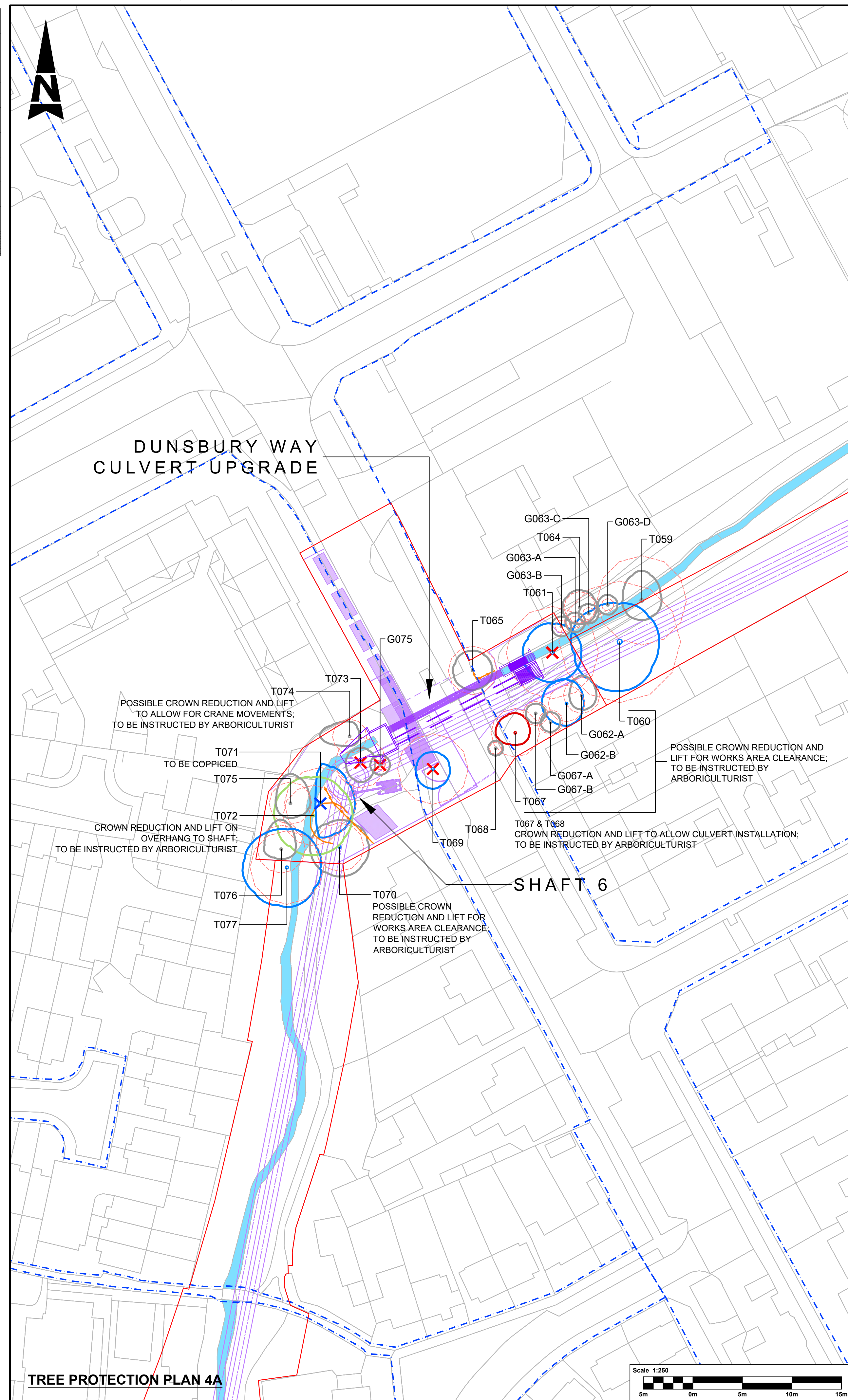
Drawing Number
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Revision
C04



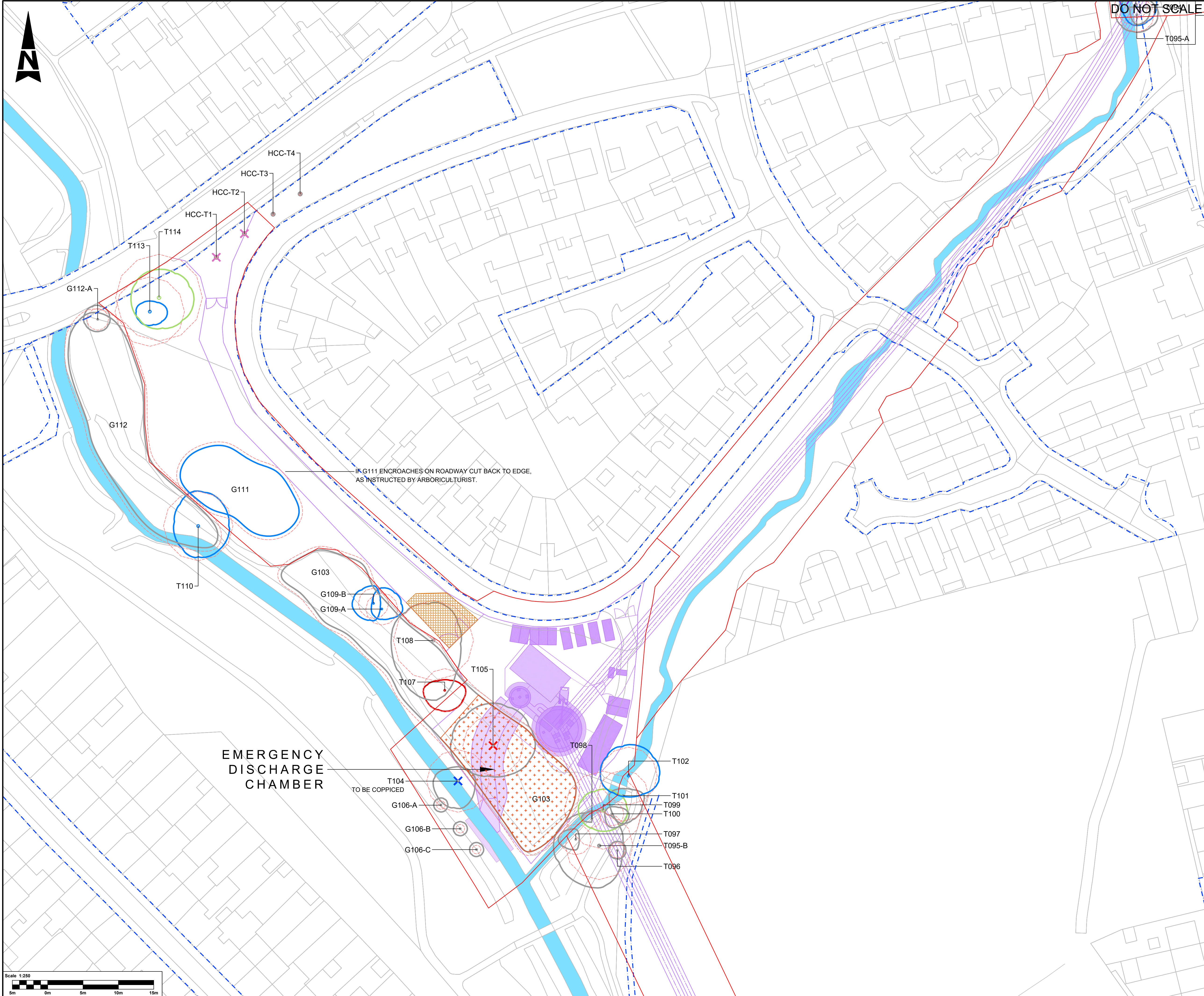
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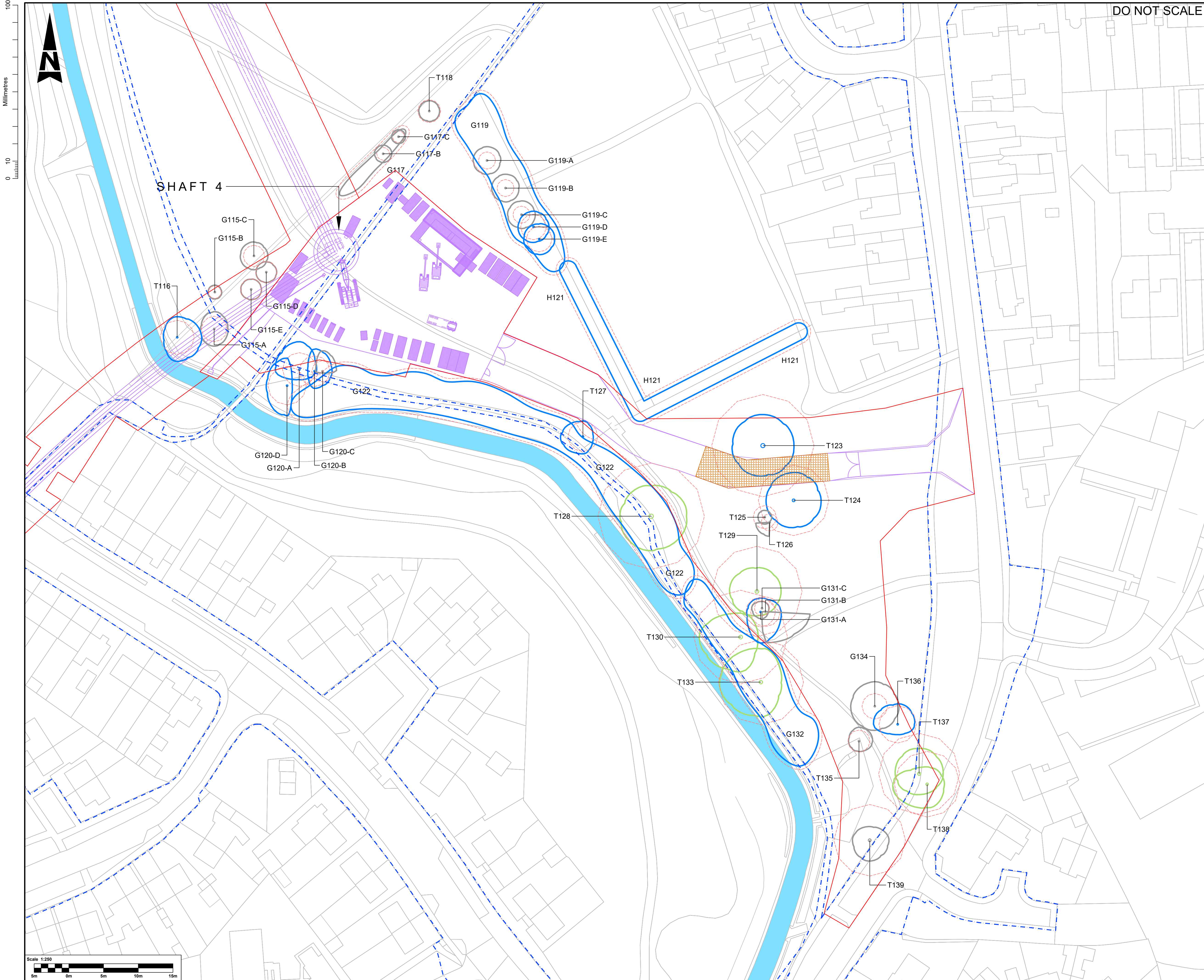


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Refer to designer's risk assessment									
DECOMMISSIONING/DEMOLITION									
Refer to designer's risk assessment									
It is assumed that all works will be carried out by a competent contractor working, where appropriate, to an approved method statement									
BOUNDARIES									
		HIGHWAY BOUNDARY				SCHEME RED LINE BOUNDARY & SITE PERIMETER FENCE			
SCHEME PROPOSALS									
		MAIN PIPELINE WORKS				CULVERT UPGRADE WORKS			
		HAUL ROUTE				WORKING WIDTH			
		TURF STRIP				PIPELINE, OPEN CUT & COVER			
		PIPELINE, MICRO DRILLED (TUNNELED)				PIPELINE SHAFT TO MICRO DRILLED SECTION			
TREE FEATURES & SURVEY						ANCIENT WOODLAND			
		CATEGORY A TREE				CATEGORY B TREE			
		CATEGORY C TREE				CATEGORY U TREE			
		TREE GROUP (COLOUR TO BS)		T/G/H001		TREE / GROUP / HEDGE REF. NO.			
		ROOT PROTECTION AREA (RPA)				TREE ROOT SYSTEM (RADAR SURVEY)			
TREE PROTECTION / WORKS / REMOVALS									
		PROTECTIVE FENCING (INDICATIVE)				PROTECTIVE MATTING (INDICATIVE)			
		TREE REMOVAL TO FACILITATE WORKS				TREE GROUP / HEDGE REMOVAL TO FACILITATE WORKS			
		TREE TO BE TRANSLOCATED				TREE TO BE COPICPED			
OTHER SPECIFIC TREE WORKS AS NOTED ON DRAWINGS									
C04	17/01/2025	General updates				NA	TD	JH	
C03	20/11/2024	General updates				NA	TD	JH	
C02	11/05/2024	General updates				NA	TD	JH	
Rev.	Date	Description				By	Chk'd	App'd	
Suitability							Status		
SUITABLE FOR INFORMATION							S2		
Nova North 11 Bressenden Place Westminster London SW1E 5BY Tel: +44 (0)20 7121 20000 Fax: +44 (0)1206 732020 www.atkinsrealis.com © SNC-Lavalin (2025)									
Client Telephone: Havant (023) 9249 9888 Fax: Havant (023) 9245 3632 Website: www.portsmouthwater.co.uk Registered Office: PO Box 8 West Street Havant Hampshire PO9 1LG REGISTERED IN ENGLAND NO. 2536455									
Project Title									
HAVANT THICKET RESERVOIR									
Drawing Title									
PIPELINE TREE PROTECTION PLAN SHEET 4 of 12									
Scale	Designed	X	Drawn	NA	Checked	TD	Authorised	JH	
Original Size	A1	Date	--/--/--	Date	30/06/2023	Date	30/06/2023	Date	30/06/2023
Drawing Number								Revision	
HTR-ATK-PZ-BR-DR-L-0005								C04	

SAFETY, HEALTH AND ENVIRONMENTAL INFORMATION									
In addition to the hazards/risks normally associated with the types of work detailed on this drawing, note the following:									
CONSTRUCTION									
Refer to designer's risk assessment									
MAINTENANCE/CLEANING									
Refer to designer's risk assessment									
DECOMMISSIONING/DEMOLITION									
Refer to designer's risk assessment									
It is assumed that all works will be carried out by a competent contractor working, where appropriate, to an approved method statement									
BOUNDARIES									
		HIGHWAY BOUNDARY				SCHEME RED LINE BOUNDARY & SITE PERIMETER FENCE			
SCHEME PROPOSALS									
		MAIN PIPELINE WORKS				CULVERT UPGRADE WORKS			
		HAUL ROUTE				WORKING WIDTH			
		TURF STRIP				PIPELINE OPEN CUT & COVER			
		PIPELINE MICRO DRILLED (TUNNELED)				PIPELINE SHAFT TO MICRO DRILLED SECTION			
TREE FEATURES & SURVEY						ANCIENT WOODLAND			
		CATEGORY A TREE				CATEGORY B TREE			
		CATEGORY C TREE				CATEGORY U TREE			
		TREE GROUP (COLOUR TO BS)		T/G/H001		TREE / GROUP / HEDGE REF. NO.			
		ROOT PROTECTION AREA (RPA)				TREE ROOT SYSTEM (RADAR SURVEY)			
TREE PROTECTION / WORKS / REMOVALS									
		PROTECTIVE FENCING (INDICATIVE)				PROTECTIVE MATTING (INDICATIVE)			
		TREE REMOVAL TO FACILITATE WORKS				TREE GROUP / HEDGE REMOVAL TO FACILITATE WORKS			
		TREE TO BE TRANSLOCATED				TREE TO BE COPPICED			
OTHER SPECIFIC TREE WORKS AS NOTED ON DRAWINGS									
SUITABLE FOR INFORMATION S2									
Client									
Telephone: Havant (023) 9249 9888 Fax: Havant (023) 9245 3632 Website: www.portsmouthwater.co.uk Registered Office: PO Box 8 West Street Havant Hampshire PO9 1LG REGISTERED IN ENGLAND NO. 2536455									
Project Title									
HAVANT THICKET RESERVOIR									
Drawing Title									
PIPELINE TREE PROTECTION PLAN SHEET 5 of 12									
Scale									
1:500		Designed X		Drawn NA		Checked TD		Authorised JH	
Original Size A1		Date		Date		Date		Date	
		30/06/2023		30/06/2023		30/06/2023		30/06/2023	
Drawing Number								Revision	
HTR-ATK-PZ-BR-DR-L-0006								C03	



HTR-ATK-PZ-BR-DR-L-0007	C04
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DO NOT SCALE

SAFETY, HEALTH AND ENVIRONMENTAL INFORMATION

In addition to the hazards/risks normally associated with the types of work detailed on this drawing, note the following:

CONSTRUCTION

Refer to designer's risk assessment

MAINTENANCE/CLEANING

Refer to designer's risk assessment

DECOMMISSIONING/DEMOLITION

Refer to designer's risk assessment

It is assumed that all works will be carried out by a competent contractor working, where appropriate, to an approved method statement

BOUNDARIES

- HIGHWAY BOUNDARY
- SCHEME RED LINE BOUNDARY & SITE PERIMETER FENCE

SCHEME PROPOSALS

- MAIN PIPELINE WORKS
- CULVERT UPGRADE WORKS
- HAUL ROUTE
- WORKING WIDTH
- TURF STRIP
- PIPELINE, OPEN CUT & COVER
- PIPELINE, MICRO DRILLED (TUNNELED)
- PIPELINE SHAFT TO MICRO DRILLED SECTION

TREE FEATURES & SURVEY

- CATEGORY A TREE
- CATEGORY B TREE
- CATEGORY C TREE
- CATEGORY U TREE
- TREE GROUP (COLOUR TO BS)
- T/G/H001 TREE / GROUP / HEDGE REF. NO.
- ROOT PROTECTION AREA (RPA)
- TREE ROOT SYSTEM (RADAR SURVEY)

TREE PROTECTION / WORKS / REMOVALS

- PROTECTIVE FENCING (INDICATIVE)
- PROTECTIVE MATTING (INDICATIVE)
- TREE REMOVAL TO FACILITATE WORKS
- TREE GROUP / HEDGE REMOVAL TO FACILITATE WORKS
- TREE TO BE TRANSLOCATED
- TREE TO BE COPIPPED

OTHER SPECIFIC TREE WORKS AS NOTED ON DRAWINGS

C03	11/11/2024	General updates	NA	TD	JH
C02	11/05/2024	General updates	NA	TD	JH
Rev.	Date	Description	By	Chk'd	App'd

SUITABLE FOR INFORMATION S2

AtkinsRéalis
Nova North
11 Bressenden Place
Westminster
London
SW1E 5BY
Tel: +44 (0)20 7121 20000
Fax: +44 (0)1206 732020
www.atkinsrealis.com
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Client
Telephone: Havant (023) 9249 9888
Fax: Havant (023) 9245 3632
Website: www.portsmouthwater.co.uk
Registered Office: PO Box 8 West Street
Havant Hampshire PO9 1LG
REGISTERED IN ENGLAND No. 2536455



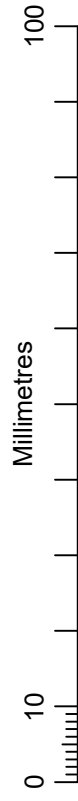
Project Title
HAVANT THICKET RESERVOIR

Drawing Title
PIPELINE
TREE PROTECTION PLAN
SHEET 7 of 12

Scale	Designed	Drawn	Checked	Authorised
1:500	X	NA	TD	JH
Original Size	Date	Date	Date	Date
A1	--/--	30/06/2023	30/06/2023	30/06/2023

Drawing Number
HTR-ATK-PZ-BR-DL-0008

Revision
C03



In addition to the hazards/risks normally associated with the types of work detailed on this drawing, note the following:

In addition to the hazards/risks normally associated with the types of work detailed on this drawing, note the following:

Refer to designer's risk assessment

Refer to designer's risk assessment

Refer to designer's risk assessment

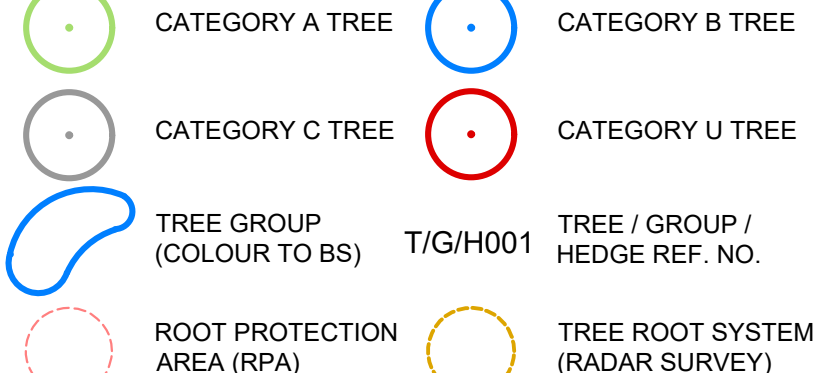
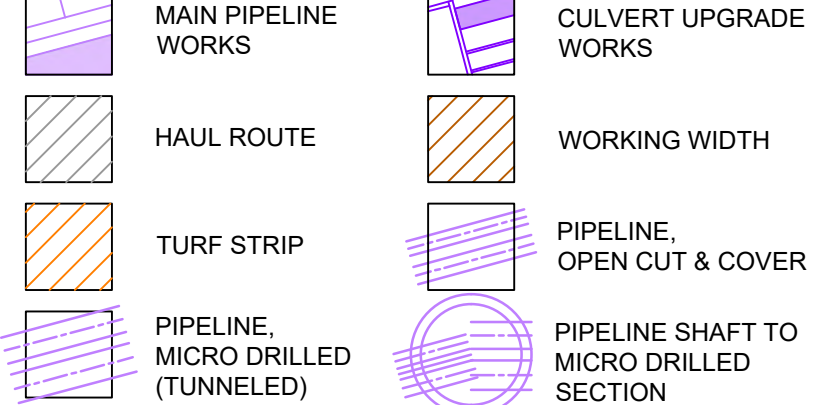
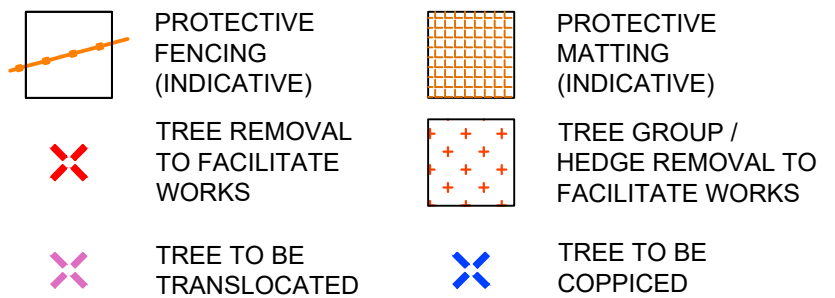
Refer to designer's risk assessment

Refer to designer's risk assessment

Refer to designer's risk assessment

It is assumed that all works will be carried out by a competent contractor working, where appropriate, to an approved method statement

☐ HIGHWAY ☐ SCHEME RED LINE

TREE PROTECTION / WORKS / REMOVALS

OTHER SPECIFIC TREE WORKS AS NOTED ON DRAWINGS

C03	11/11/2024	General updates	NA	TD	JL
C02	11/05/2024	General updates	NA	TD	JL
Rev.	Date	Description	By	Chk'd	App'd

Suitability	Status
SUITABLE FOR INFORMATION	S2



Client

Telephone: Havant (023) 9249 9888
Fax: Havant (023) 9245 3632
Website: www.portsmouthwater.co.uk
Registered Office: PO Box 8 West Street
Havant Hampshire PO9 1LG
REGISTERED IN ENGLAND No. 2536455

Portsmouth Water



Project Title

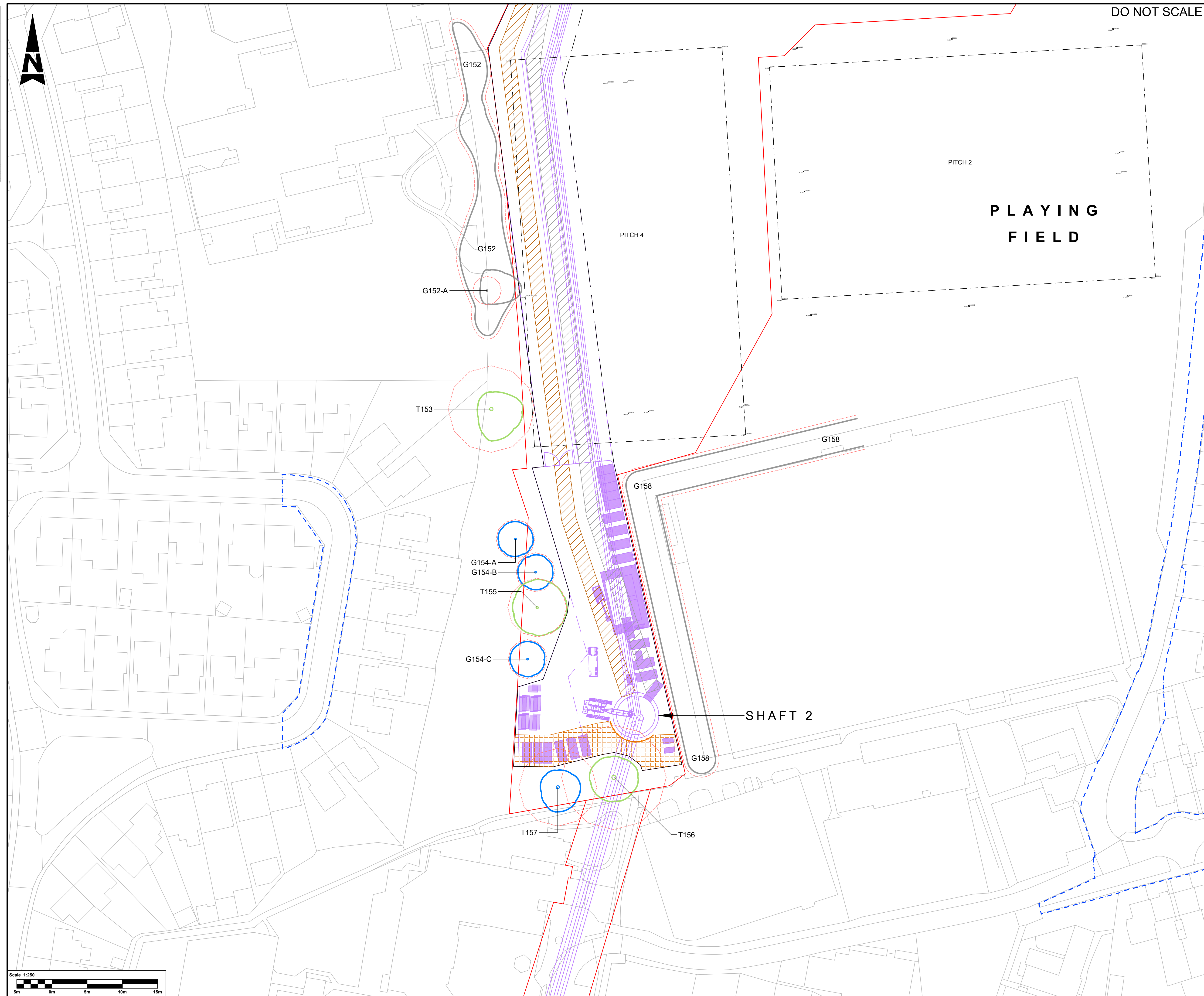
HAVANT THICKET RESERVOIR

Drawing Title

PIPELINE
TREE PROTECTION PLAN
SHEET 8 of 12

Scale 1:500	Designed X	Drawn NA	Checked TD	Authorised JH
Original Size A1	Date --/--/--	Date 30/06/2023	Date 30/06/2023	Date 30/06/2023

Drawing Number	HTR-ATK-PZ-BR-DR-L-0009	Revision	C03
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DO NOT SCALE

SAFETY, HEALTH AND ENVIRONMENTAL INFORMATION

In addition to the hazards/risks normally associated with the types of work detailed on this drawing, note the following:

CONSTRUCTION

Refer to designer's risk assessment

MAINTENANCE/CLEANING

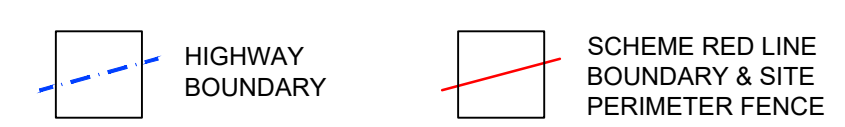
Refer to designer's risk assessment

DECOMMISSIONING/DEMOLITION

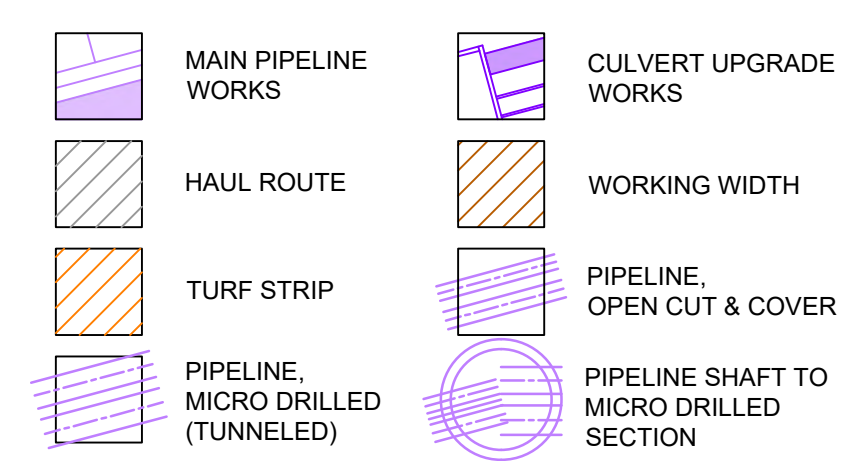
Refer to designer's risk assessment

It is assumed that all works will be carried out by a competent contractor working, where appropriate, to an approved method statement

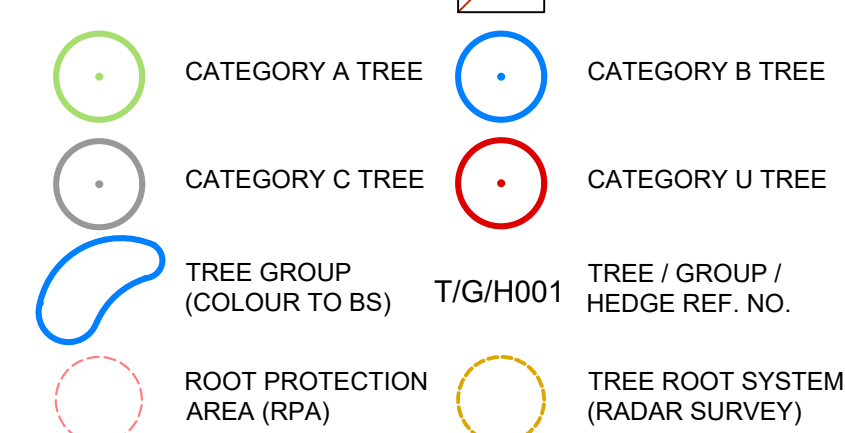
BOUNDARIES



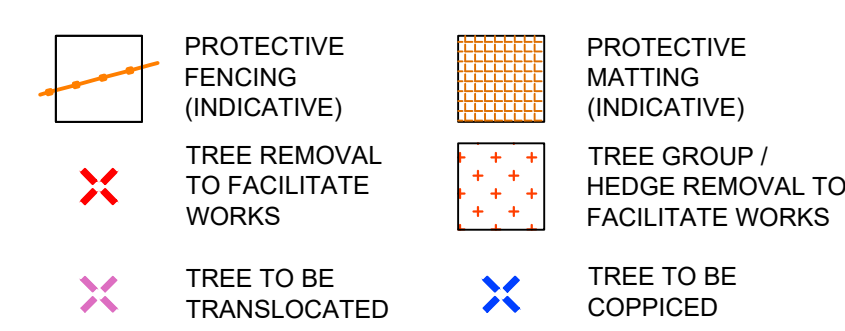
SCHEME PROPOSALS



TREE FEATURES & SURVEY



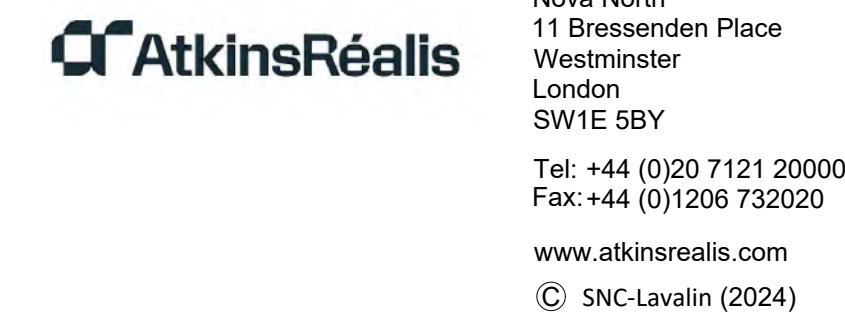
TREE PROTECTION / WORKS / REMOVALS



OTHER SPECIFIC TREE WORKS AS NOTED ON DRAWINGS

C03	11/11/2024	General updates	NA	TD	JH
C02	11/05/2024	General updates	NA	TD	JH
Rev.	Date	Description	By	Chkd	App'd

Suitability	Status
SUITABLE FOR INFORMATION	S2



Client

Telephone: Havant (023) 9249 9888
Fax: Havant (023) 9245 3632
Website: www.portsmouthwater.co.uk
Registered Office: PO Box 8 West Street
Havant Hampshire PO9 1LG
REGISTERED IN ENGLAND No. 2536455

Portsmouth Water



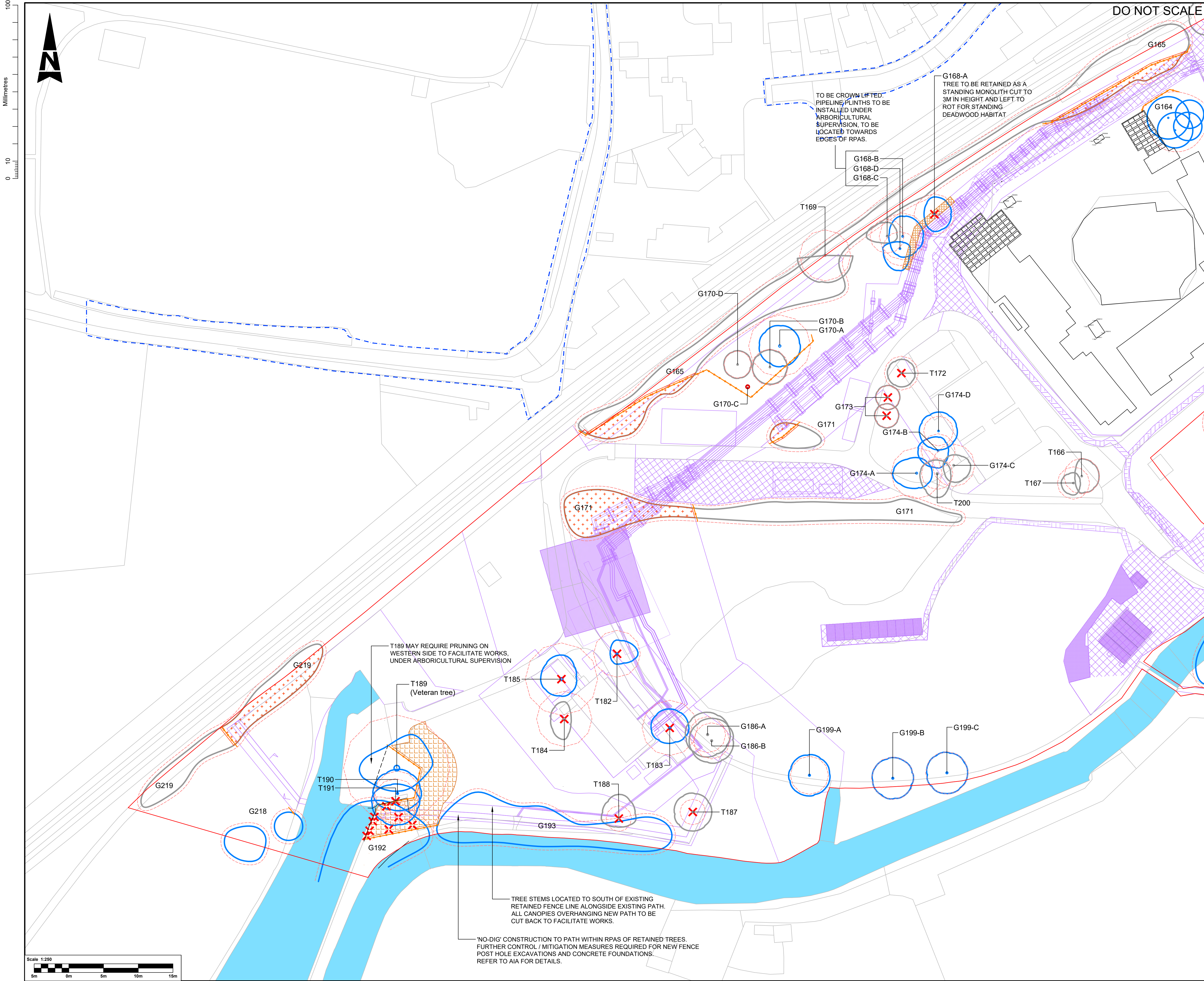
Project Title

HAVANT THICKET RESERVOIR

Drawing Title

PIPELINE
TREE PROTECTION PLAN
SHEET 9 of 12

Scale 1:500	Designed X	Drawn NA	Checked TD	Authorised JH
Original Size A1	Date --/--/--	Date 30/06/2023	Date 30/06/2023	Date 30/06/2023
Drawing Number HTR-ATK-PZ-BR-DR-L-0010				Revision C03



SAFETY, HEALTH AND ENVIRONMENTAL INFORMATION

In addition to the hazards/risks normally associated with the types of work detailed on this drawing, note the following:

CONSTRUCTION

Refer to designer's risk assessment

MAINTENANCE/CLEANING

Refer to designer's risk assessment

DECOMMISSIONING/DEMOLITION

Refer to designer's risk assessment

It is assumed that all works will be carried out by a competent contractor working, where appropriate, to an approved method statement

BOUNDARIES

HIGHWAY BOUNDARY

SCHEME RED LINE BOUNDARY & SITE PERIMETER FENCE

SCHEME PROPOSALS

MAIN PIPELINE WORKS

CULVERT UPGRADE WORKS

HAUL ROUTE

WORKING WIDTH

TURF STRIP

PIPELINE, OPEN CUT & COVER

PIPELINE, MICRO DRILLED (TUNNELED)

PIPELINE SHAFT TO MICRO DRILLED SECTION

TREE FEATURES & SURVEY

CATEGORY A TREE

CATEGORY B TREE

CATEGORY C TREE

CATEGORY U TREE

TREE GROUP (COLOUR TO BS)

T/G/H001 TREE / GROUP / HEDGE REF. NO.

ROOT PROTECTION AREA (RPA)

TREE ROOT SYSTEM (RADAR SURVEY)

ANCIENT WOODLAND

TREE PROTECTION / WORKS / REMOVALS

PROTECTIVE FENCING (INDICATIVE)

PROTECTIVE MATTING (INDICATIVE)

TREE REMOVAL TO FACILITATE WORKS

TREE GROUP / HEDGE REMOVAL TO FACILITATE WORKS

TREE TO BE TRANSLOCATED

TREE TO BE COPICED

OTHER SPECIFIC TREE WORKS AS NOTED ON DRAWINGS

C04	20/11/2024	General updates, including G168-A removal	NA	TD	JH
C03	23/06/2024	Change to PROW alignment in SW of site	NA	TD	JH
C02	11/05/2024	General updates	NA	TD	JH
Rev.	Date	Description	By	Chk'd	App'd

Suitability

STATUS

SUITABLE FOR INFORMATION

S2

AtkinsRéalis

Nova North
11 Bressenden Place
Westminster
London
SW1E 5BY
Tel: +44 (0)20 7121 20000
Fax: +44 (0)1206 732020
www.atkinsrealis.com
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Client

Telephone: Havant (023) 9249 9888
Fax: Havant (023) 9245 3632
Website: www.portsmouthwater.co.uk
Registered Office: PO Box 8 West Street
Havant Hampshire PO9 1LG
REGISTERED IN ENGLAND No. 2536455

Portsmouth Water

Project Title

HAVANT THICKET RESERVOIR

Drawing Title

PIPELINE
TREE PROTECTION PLAN
SHEET 10 of 12

Scale	Designed	Drawn	Checked	Authorised
1:500	X	NA	TD	JH
Original Size	Date	Date	Date	Date
A1	--/--/--	30/06/2023	30/06/2023	30/06/2023

Drawing Number

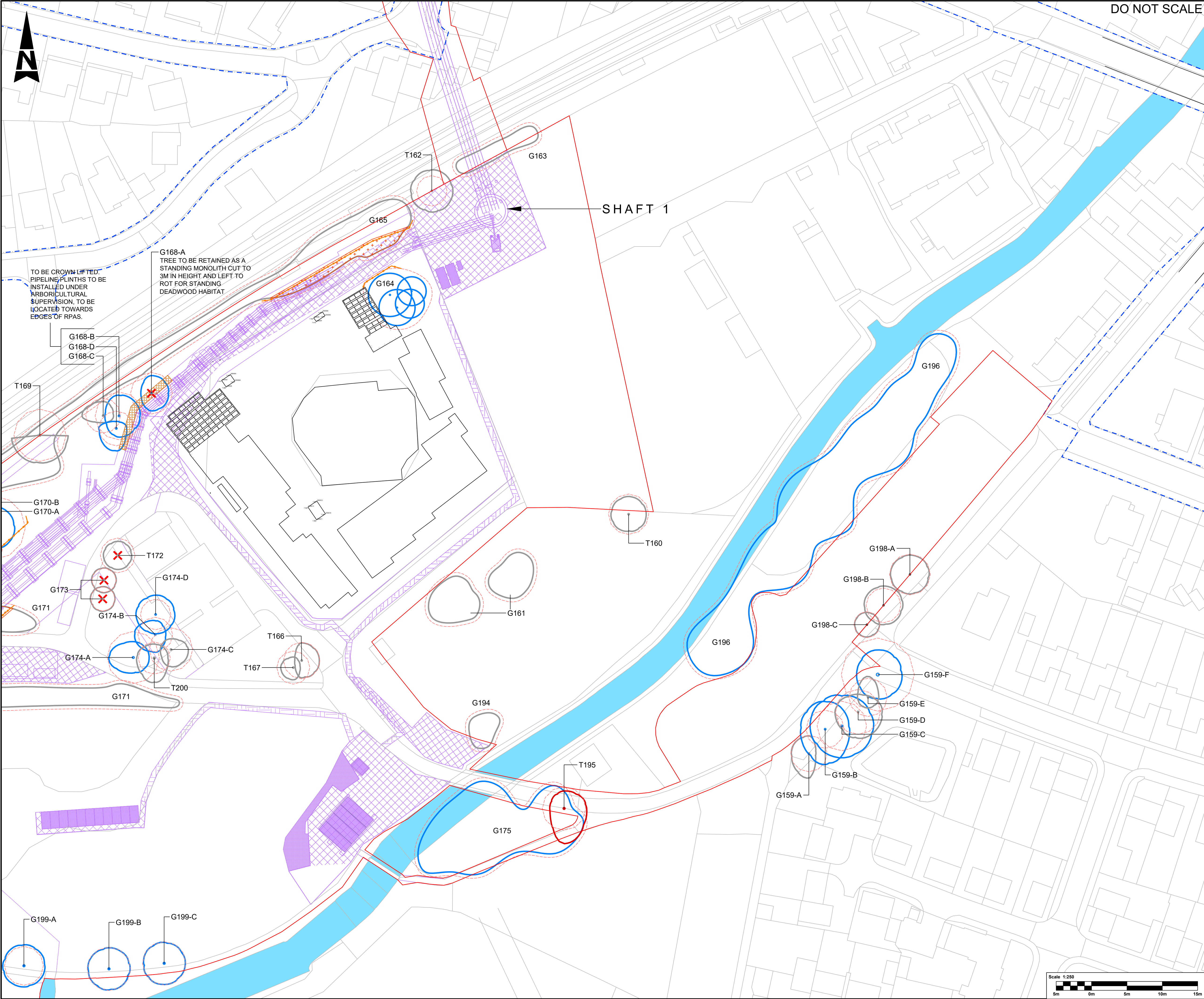
HTR-ATK-PZ-BR-DR-L-0011

Revision

C04

CLASSIFICATION - Base Line (Low Risk)

Internal Project Number: 5221215



DO NOT SCALE

SAFETY, HEALTH AND ENVIRONMENTAL INFORMATION

In addition to the hazards/risks normally associated with the types of work detailed on this drawing, note the following:

CONSTRUCTION

Refer to designer's risk assessment

MAINTENANCE/CLEANING

Refer to designer's risk assessment

DECOMMISSIONING/DEMOLITION

Refer to designer's risk assessment

It is assumed that all works will be carried out by a competent contractor working, where appropriate, to an approved method statement

BOUNDARIES

- HIGHWAY BOUNDARY
- SCHEME RED LINE BOUNDARY & SITE PERIMETER FENCE

SCHEME PROPOSALS

- MAIN PIPELINE WORKS
- CULVERT UPGRADE WORKS
- HAUL ROUTE
- WORKING WIDTH
- TURF STRIP
- PIPELINE, OPEN CUT & COVER
- PIPELINE, MICRO DRILLED (TUNNELED)
- PIPELINE SHAFT TO MICRO DRILLED SECTION

TREE FEATURES & SURVEY

- CATEGORY A TREE
- CATEGORY B TREE
- CATEGORY C TREE
- CATEGORY U TREE
- TREE GROUP (COLOUR TO BS)
- T/G/H001 TREE / GROUP / HEDGE REF. NO.
- ROOT PROTECTION AREA (RPA)
- TREE ROOT SYSTEM (RADAR SURVEY)

TREE PROTECTION / WORKS / REMOVALS

- PROTECTIVE FENCING (INDICATIVE)
- PROTECTIVE MATTING (INDICATIVE)
- TREE REMOVAL TO FACILITATE WORKS
- TREE GROUP / HEDGE REMOVAL TO FACILITATE WORKS
- TREE TO BE TRANSLOCATED
- TREE TO BE COPIPPED

OTHER SPECIFIC TREE WORKS AS NOTED ON DRAWINGS

C03	20/11/2024	General updates	NA	TD	JH
C02	11/05/2024	General updates	NA	TD	JH
Rev.	Date	Description	By	Chk'd	App'd

SUITABLE FOR INFORMATION S2

AtkinsRéalis

Nova North
11 Bressenden Place
Westminster
London
SW1E 5BY
Tel: +44 (0)20 7121 20000
Fax: +44 (0)1206 732020
www.atkinsrealis.com
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Client
Telephone: Havant (023) 9249 9888
Fax: Havant (023) 9245 3632
Website: www.portsmouthwater.co.uk
Registered Office: PO Box 8 West Street
Havant Hampshire PO9 1LG
REGISTERED IN ENGLAND No. 2536455



Project Title
HAVANT THICKET RESERVOIR

Drawing Title
PIPELINE
TREE PROTECTION PLAN
SHEET 11 of 12

Scale	Designed	Drawn	Checked	Authorised
1:500	X	NA	TD	JH
Original Size	Date	Date	Date	Date
A1	--/--	30/06/2023	30/06/2023	30/06/2023

Drawing Number
HTR-ATK-PZ-BR-DR-L-0012
Revision
C03



STAUNTON
COUNTRY
PARK

DO NOT SCALE

In addition to the hazards/risks normally associated with the types of work detailed on this drawing, note the following:

Refer to designer's risk assessment

Refer to designer's risk assessment

Refer to designer's risk assessment

It is assumed that all works will be carried out by a competent contractor working, where appropriate, to an approved method statement

 HIGHWAY
BOUNDARY
 SCHEME RED LINE
BOUNDARY & SITE
PERIMETER FENCE

	MAIN PIPELINE WORKS		CULVERT UPGRADE WORKS
	HAUL ROUTE		WORKING WIDTH
	TURF STRIP		PIPELINE, OPEN CUT & COVER
	PIPELINE, MICRO DRILLED (TUNNELED)		PIPELINE SHAFT TO MICRO DRILLED SECTION

	CATEGORY A TREE		CATEGORY B TREE
	CATEGORY C TREE		CATEGORY U TREE
	TREE GROUP (COLOUR TO BS)		T/G/H001 TREE / GROUP / HEDGE REF. NO.

	PROTECTIVE FENCING (INDICATIVE)		PROTECTIVE MATTING (INDICATIVE)
	TREE REMOVAL TO FACILITATE WORKS		TREE GROUP / HEDGE REMOVAL TO FACILITATE WORKS
	TREE TO BE TRANSLOCATED		TREE TO BE COPIED

OTHER SPECIFIC TREE WORKS AS NOTED ON DRAWINGS

C04	17/01/2025	General updates	NA	TD	JH
C03	11/11/2024	General updates	NA	TD	JH
C02	11/05/2024	General updates	NA	TD	JH
Rev.	Date	Description	By	Chk'd	App'd

Suitability

Suitability	Status
SUITABLE FOR INFORMATION	S2



Nova North
11 Bressenden Place
Westminster
London
SW1E 5BY

Tel: +44 (0)20 7121 20000
Fax: +44 (0)1206 732020

www.atkinsrealis.com

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Telephone: Havant (023) 9249 9888
Fax: Havant (023) 9245 3632
Website: www.portsmouthwater.co.uk
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Project Title	
---------------	--

HAVANT THICKET RESERVOIR

Drawing Title

PIPELINE
TREE PROTECTION PLAN
SHEET 12 of 12

Scale 1:500	Designed X	Drawn NA	Checked TD	Authorised JH
Original Size A1	Date --/--	Date 11/12/2023	Date 11/12/2023	Date 11/12/2023

Drawing Number

HTR-ATK-PZ-BR-DR-L-0013

Revision

CLASSIFICATION - Base Line (Low Risk)

Internal Project Number: 5221215

<contact name>.

AtkinsRéalis The Hub
500 Park Avenue
Aztec West
Bristol
BS32 4RZ

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