

Havant Thicket Reservoir Project

Environmental Statement Volume 4 - Appendices

Appendix A9 Biodiversity

A9.14 Arboricultural Impact Assessment

Portsmouth Water Ltd.

04/09/20

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Notice

This document and its contents have been prepared and are intended as planning information for Portsmouth Water Limited and use in relation to the Havant Thicket Reservoir.

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1. Introduction

Terms of reference

- 1.1. Atkins Limited (Atkins) has been commissioned by Portsmouth Water Ltd (PW) 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 new reservoir and associated access routes at Havant Thicket and a new pipeline between the reservoir and Bedhampton pumping station, collectively known as 'the Scheme'.
- 1.2. This report is an Arboricultural Impact Assessment (AIA), focusing on the trees within the Scheme red line boundary. It is Appendix A9.14 in ES Volume 4.
- 1.3. It reports on the impacts on the recorded trees from the Scheme and is supplemented by the production of Tree Protection Plans (TPPs), which are included within Appendix D of this report.
- 1.4. 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.
- 1.5. Below is a summary of the terminology used throughout this report to identify the different parts of the Site:
 - The 'Site' includes all the land in the red line boundary: the reservoir site and access routes, and the pipeline corridor as well as land around the reservoir footprint being used for ecological mitigation and compensation.
 - The 'reservoir site and access routes' excludes the pipeline corridor but does include:
 - The reservoir footprint and other areas used for built development and habitat creation (referred to as the 'Reservoir Footprint').
 - Ecological enhancement areas, which are purely included in the red line boundary for habitat works, including the majority of land within Havant Thicket woodland to the north and Bells Copse to the west and part of Staunton Country Park to the south of the reservoir footprint (referred to as the 'Ecological Enhancement Area').
 - Access routes.
 - The 'pipeline corridor' is the working corridor of the pipeline route between the reservoir and the boundary of Bedhampton Pumping Station.

Location of the Scheme

- 1.6. The Scheme includes the reservoir at Havant Thicket and the pipeline connecting to Bedhampton Springs. The reservoir site is located to the north of the town of Havant in the county of Hampshire. It is split along a north-south alignment between two local planning authorities of Hampshire Borough Council (HBC) and East Hampshire District Council (EHDC). The boundary of the South Downs National Park (SDNP) lies to the east.
- 1.7. The reservoir site lies within a shallow valley located between the residential settlements of Leigh Park and Rowlands Castle. It has an area of approximately 160 hectares and comprises predominantly open grassland with some woodland, hedgerows and ditches.
- 1.8. Figure 1-1 below shows the location of the reservoir.



Figure 1-1 - Location of reservoir

- 1.9. The 'pipeline corridor' is the working corridor of the pipeline route between the reservoir and the boundary of Bedhampton Pumping Station. It lies within EHDC land. The indicative pipeline corridor is illustrated on Figure 1-2 below.

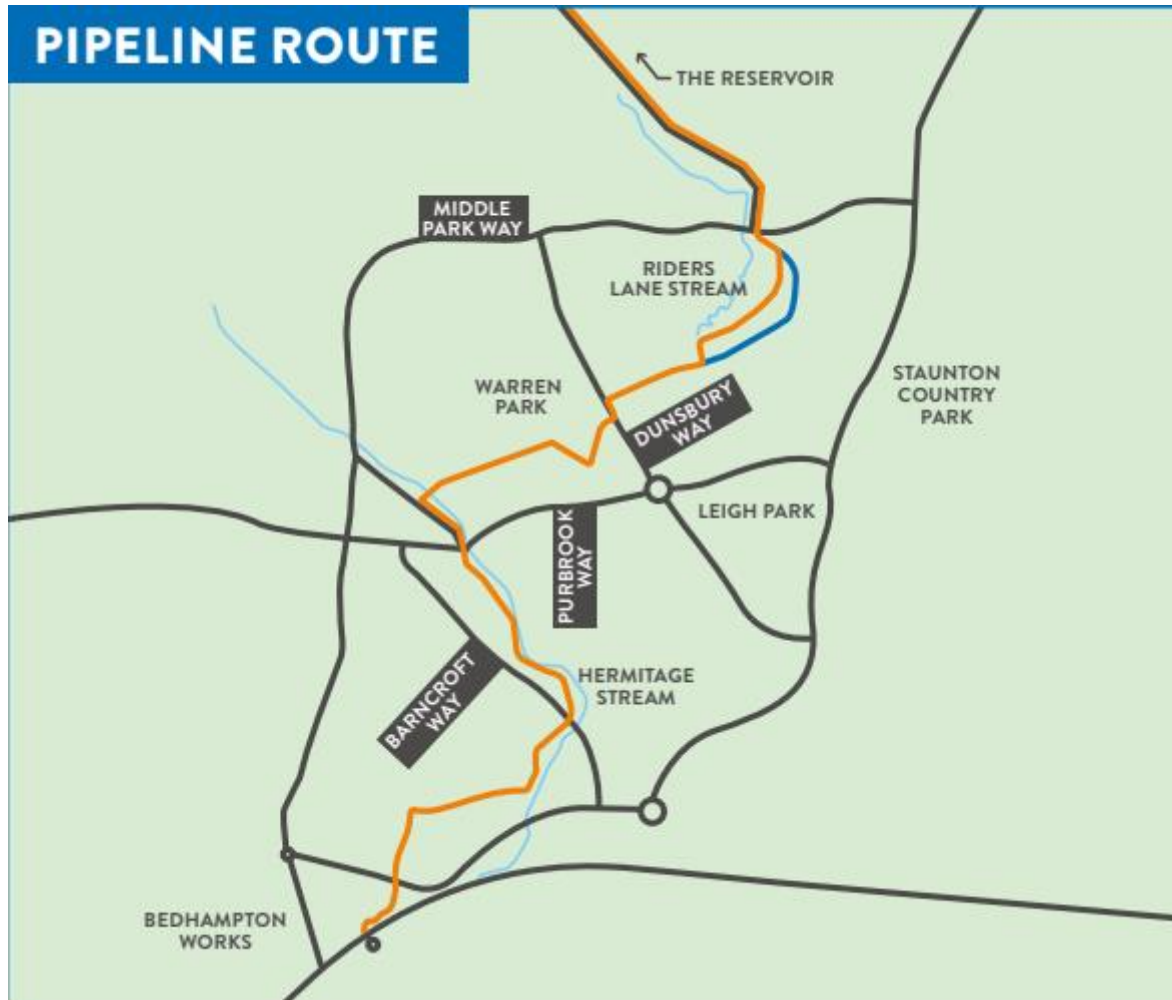


Figure 1-2 – Indicative location of pipeline corridor

Description of the Scheme

- 1.10. The reservoir, when constructed, will be filled with surplus water drawn from the springs at the Bedhampton works when flows are at their highest in winter via a new combined inlet/outline pipeline, and will provide water supplies to Portsmouth Water customers in the summer months as required. The increase in water supplies available to Portsmouth Water on completion of the scheme will enable additional water to be supplied to Southern Water. Southern Water has a forecast deficit in water resources in the Hampshire area which has been created by the reduction of its abstraction licences on the River Itchen imposed by the Environment Agency.
- 1.11. Complementary to its infrastructure resilience function, the reservoir provides a new recreational facility/resource adjacent to one of the more deprived areas in south east Hampshire, in an area which the community can access on foot, by bike, or through existing bus routes. It offers further opportunities to improve the wider footpath, cycleway and bridleway networks in the area. More than 29,500 people live within reasonable walking distance of the site (1.5km) and 120,000 people live within reasonable cycling distance of the site (4.5km).
- 1.12. The Scheme also provides for a new wetland habitat and associated area for nature conservation. The proximity of the reservoir to the internationally important Langstone Harbour means that it can be used as a safe retreat for roosting birds when there is disturbance in the Harbour (Special Protection Area (SPA) and Special Area of Conservation (SAC)).
- 1.13. The pipeline is to be used as an emergency draw down pipeline if the reservoir needs to be drained down in emergency conditions in accordance with the Environment Agency (EA) safety guidance (Guide to Drawdown Capacity for Reservoir Safety and Emergency Planning, 2017).
- 1.14. The Scheme is allocated in the HBC and EHDC Local Plans.

- 1.15. The key elements of the scheme are as follows:
- Spring water pumping from the Bedhampton and Havant Springs system to fill the Havant Thicket reservoir;
 - Havant Thicket reservoir for raw water storage, complete with control house, visitor centre and recreational facilities for public amenity;
 - Booster pumping of reservoir water to treatment;
 - Additional water treatment suitable for reservoir water;
 - Treated water pumping to the network to enable bulk supply to Southern Water;
 - New interconnecting pipework between Bedhampton Pumping Station and the Havant Thicket reservoir and between Farlington WTW and Nelson Service Reservoir. The scheme will make use of existing pipework between Bedhampton Pumping Station and Farlington WTW.
- 1.16. The layout of the proposals where available have been overlaid on to the TPPs to determine the impacts of the Scheme on the existing tree stock. Where not available assumptions have been made to quantify the impacts on trees or define mitigation measures to protect trees from future works.

Scope of works

- 1.17. This report presents arboricultural information captured by Atkins' Arboricultural Team Leader and Landscape Manager Tom Dale BSc (Hons), Cert Arb L6 (ABC), M.Arbor.A and Atkins' Landscape and Arboricultural Consultant Adam Atkins, BA (Hons), CMLI, TechCert (ArborA).
- 1.18. The report has also been informed by a supplementary report titled 'Review of six plots of woodland in and adjacent to the Proposed Havant Thicket Reservoir Site, Hampshire for their ancient woodland status; establish ecological continuity of the woodlands using lichens; the presence of veteran trees and the condition of the woodlands' produced by Sanderson and Cross in January 2020. This report was an update of a previous report carried out by Sanderson in 1994 for the Hampshire and Isle of Wight Wildlife Trust. Flora/Vegetation was assessed by ECOSA and reviewed by Sanderson and Cross in establishing woodland value.
- 1.19. The scope of works includes: the survey of trees that could be impacted by the Scheme; the preparation of an AIA; and the preparation of TPP drawings which display in graphic form the trees surveyed and the impact of the works.

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.

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

- 2.10. The relevant planning policy is detailed within the National Planning Policy Framework (NPPF) 2018 (and subsequently updated so the latest published version is 2019). The NPPF provides a joint definition of an ancient or veteran tree:
- 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. The NPPF was updated in July 2018 to provide greater protection for veteran trees (and subsequently updated so the latest published version is 2019). The pertinent section is paragraph 175 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'.*
- 2.16. Further planning policy in relation to trees and their impacts is covered within Local Planning Policy set by HBC and EHDC, detailed within their Draft Local Plans. Specific policy references are detailed within Chapter 9 Biodiversity in ES Volume 2.

Statutory protection

- 2.17. 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.
- 2.18. A TPO is made by a local authority in respect of a tree(s) as the tree is 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.
- 2.19. The local planning authorities of HBC and EHDC were contacted to determine the presence of any TPOs or Conservation Areas within the Scheme boundary.

Spatial scope

- 2.20. 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.
- 2.21. 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 Chapter 9 Biodiversity and Chapter 11 Landscape and Visual in ES Volume 2. The TPPs (see Appendix D of this report) illustrate the trees that have been surveyed.

Survey

- 2.22. The approach to the survey involved a ground-level walked assessment by qualified and experienced arboriculturists. It has also been informed by a supplementary report produced by Sanderson and Cross (January 2020). As part of this reporting veteran trees were recorded within The Avenue.
- 2.23. The survey has also involved desk studies of areas not surveyed through ground-level walked assessments. These include the ecology enhancement areas and trees within the red line boundary of the pipeline corridor.
- 2.24. 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.
- 2.25. The extents of groups not surveyed as part of ground level walked assessments were plotted using available aerial imagery.
- 2.26. 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'. No numbered aluminium tree tags were used for the survey, but where already fixed to trees these were noted within the survey schedule.

Data gathering

- 2.27. Data were 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.
- 2.28. 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.
- 2.29. 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.
- 2.30. 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.
- 2.31. 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)'.
- 2.32. 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).

Limitations to survey

- 2.33. 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.

- 2.34. Where trees have not been surveyed as part of ground-level walked assessments this is either due to the trees being within areas for ecology management, non-intrusive works or in areas not previously defined at the time of the site survey works, notably the pipeline corridor, which has also been increased in size to provide sufficient space to accommodate potential variations in the actual excavated route of the pipeline depending on detailed design confirmation. The tree data in these areas has been estimated using available imagery and supplementary information taken from PW representatives. These trees were largely recorded as groups, in line with the BS5837 guidance on what constitutes a 'group' of trees (see paragraph 2.6.5 above). Therefore, an outline of the groups was plotted using available aerial imagery to capture the combined crown extents of the groups, meaning the use of exact measurements was not required.
- 2.35. 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).
- 2.36. 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.
- 2.37. The identification of the veteran trees within The Avenue was undertaken by Sanderson and Cross. This classification has not been challenged as part of this report, the trees have been included within the assessment and impacts of the Scheme. The impacts on these trees have also be shared with NE.
- 2.38. 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.
- 2.39. 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 discrepancies and their locations may need verifying.
- 2.40. 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.
- 2.41. 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.
- 2.42. Trees are living organisms subject to changes outside human control. Trees and their environment alter with the seasons and it is as well 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 reservoir site was purchased by PW from the Forestry Commission in 1965 and Portsmouth City Council in 1966. Since then, the land has been improved for agricultural use through the removal of tree stumps drainage, soil rotavation and improvement. The site is now let to the Staunton Country Park and managed by Hampshire County Council (HCC) who use it for grazing. Woodland to the north of the site is owned by Forestry England.
- 3.2. The pipeline corridor follows a route through part of Staunton Country Park, then heads towards Bedhampton pumping station via roads, sections of open space and along the corridor of the Hermitage Stream.

Existing tree stock reservoir site and access routes

- 3.3. The reservoir site and its northern access lie within or adjacent to woodland areas shown on Figure 3-1 below. The two red hatched plots with no label are known as the 'Blendworth Fragment' for the thin northern strip, and 'Bells Copse fragment' for the plot to the north of Bells Copse.

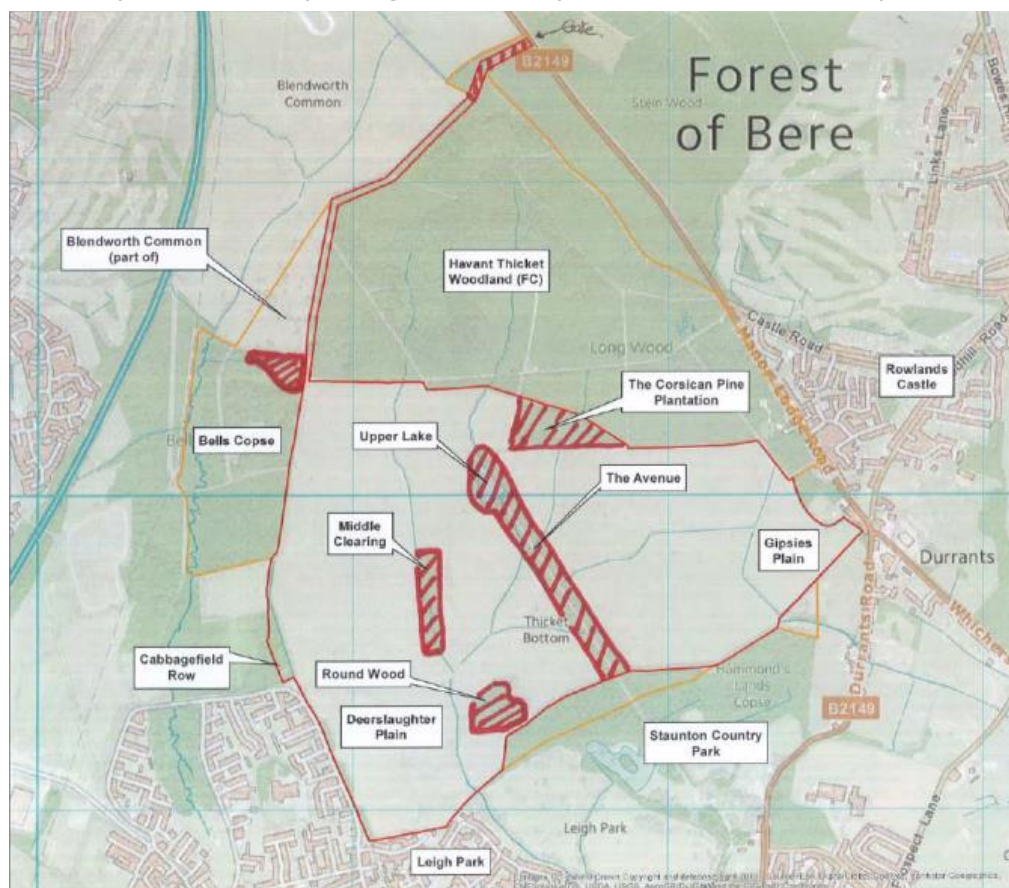


Figure 3-1 - woodlands within and adjacent to reservoir site. [Source Portsmouth Water Ltd and Cross and Sanderson, 2020]

- 3.4. The red hatched woodland areas are all designated Ancient Woodland, namely; The Avenue; Round Wood; Middle Clearing; Bells Copse fragment; The Corsican Pine Plantation; and, the Blendworth Fragment. Whilst these designations have been challenged, Natural England still maintain their Ancient woodland status. The different woodlands are discussed in more detail below.

The Avenue

- 3.5. The Avenue is a linear woodland strip that surrounds a central ride. It is dominated by oaks and contains habitats for birds, insects, reptiles, bats and dormice and includes a small lake. The Avenue formed part a wider complex of ancient pasture woodland of Havant Common before it was enclosed in c.1868 through the felling of surrounding oaks and the ceasing of any grazing. The remaining tree stock has been added to over time; however, there are pre-enclosure oaks still in situ, with a number being classified as veterans as part of the Sanderson and Cross assessment.

Round Wood

- 3.6. This area of woodland also formed part of the ancient pasture woodland of Havant Common until its enclosure. However, it was clear felled following its enclosure and an oak plantation was established. It has been harvested and replanted during the intervening period, and the estimated age of the present-day trees is c.80-90 years

Middle Clearing

- 3.7. This area of woodland also formed part of the ancient pasture woodland of Havant Common until its enclosure. However, it was clear felled following its enclosure and an oak plantation was established. The plantation was harvested and replanted during the intervening period, and the estimated age of the present-day trees is c.70 years.

Bells Copse & Bells Copse Fragment

- 3.8. Bells Copse and the fragment were clear felled in the 1970s. The different compartments of the overall woodland have been replanted over the intervening period, with areas of broadleaf trees, areas of natural regeneration with alder present and a compartment of predominantly Corsican pine. Fire damage is an ongoing issue with this area of woodland.

The Corsican Pine Plantation

- 3.9. This area of woodland also formed part of the ancient pasture woodland of Havant Common until its enclosure. However, it was clear felled following its enclosure and over the intervening period has been used as an oak plantation. This was subsequently harvested, and a Corsican pine plantation is now establishing that includes a dense understorey of predominantly bramble.

The Blendworth Fragment

- 3.10. This area of woodland has been wooded since at least 1870. It is mixed broadleaf with yew trees located sporadically through the area. These trees offer distinct landscape features, and whilst their size indicates trees of advancing age, they are not old relative to the species and do not contain qualifying saproxylic habitat features. Whilst some trees are in decline, the deadwood observed was desiccated in appearance, limiting its suitability for a range of invertebrates.
- 3.11. The northern access off the B2149 passes through part of the Blendworth Fragment with its positioning being informed by the yew trees and placed to try and avoid them where possible. The access route has been placed to align with an existing forestry track to try to limit tree removals for its construction. The tree stock along the north/west extents of the access track are primarily broadleaf trees growing on raised earth mounds, set back from the access track. To the south/east of the track are more sporadic mature broadleaf trees, with dense areas of successional growth of pioneer species such as birch and goat willow.
- 3.12. The remaining tree stock within the reservoir site form linear corridors of predominantly willow tree species along unnamed streams; mixed broadleaf plantations along part of its western extents; sporadic broadleaf trees in isolation from the woodland blocks; and forestry commission woodland.

Existing tree stock pipeline corridor

- 3.13. 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 small groups of predominantly poplar trees. There are veteran trees recorded within this area. However, the pipeline corridor avoids these recorded trees.
- 3.14. Further veteran trees have been recorded along the extents of the pipeline corridor where it joins Highclere Avenue and crosses the Hermitage Stream. The red line boundary for the pipeline corridor captures several trees within its extents. These form part of streetscapes along roads or growing along the Hermitage Stream corridor including planted and self-sown tree stock, with standards and more informal linear groups present. As noted, a large proportion of these trees have

not received ground-level walked assessments by the arboriculturists. However, they have been plotted using aerial imagery to provide desk-based information to inform the ongoing development of the pipeline corridor. These are trees G161 to G189 & T196.

Protected trees

- 3.15. 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.
- 3.16. The interactive mapping provided by EHDC and HBC was accessed, and the pertinent mapping captured in the figures below.
- 3.17. Figure 3-2 illustrates the extents of the Sir George Staunton Conservation Area, which includes many of the trees recorded for the reservoir site and the northern section of the pipeline corridor.

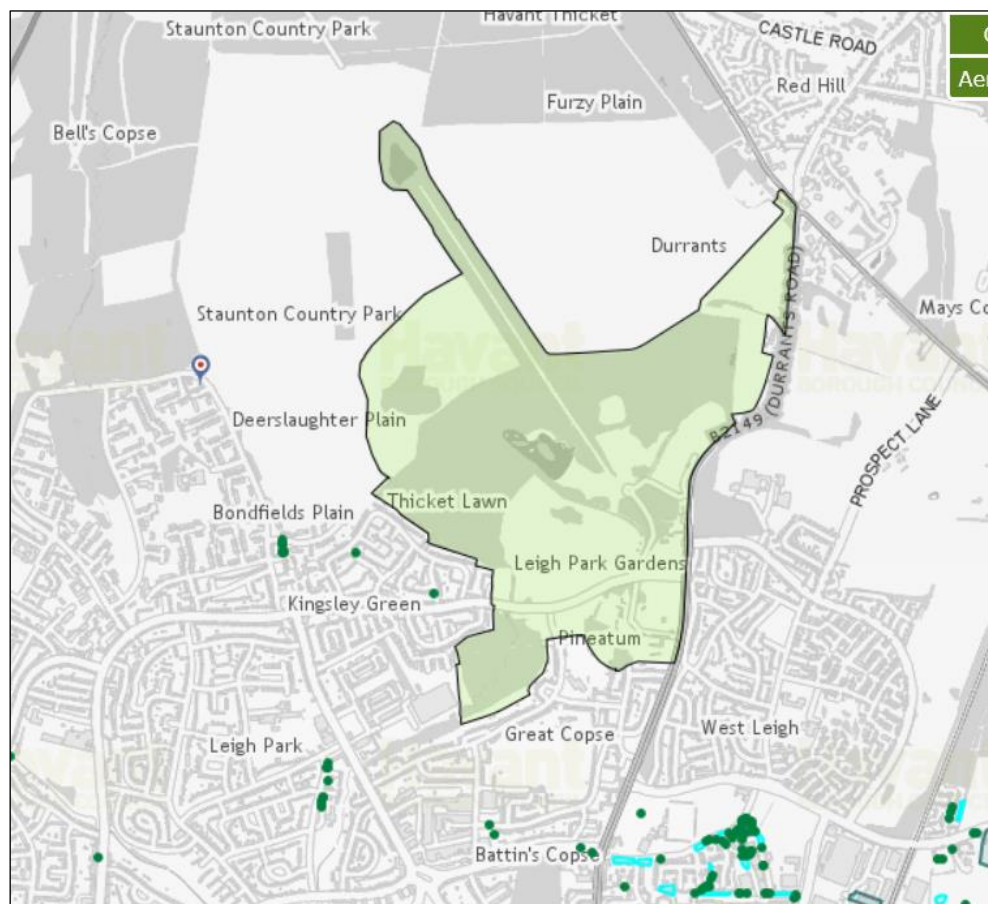


Figure 3-2 - Sir George Staunton Conservation Area [Source: <https://www.havant.gov.uk/detail-conservation-areas>]

- 3.18. Figure 3-3 illustrates the extents of the Hammonds Lands Copse woodland TPO (shown in green) that incorporates part of The Avenue, and also captures (in orange) part of the Sir George Staunton Conservation Area.

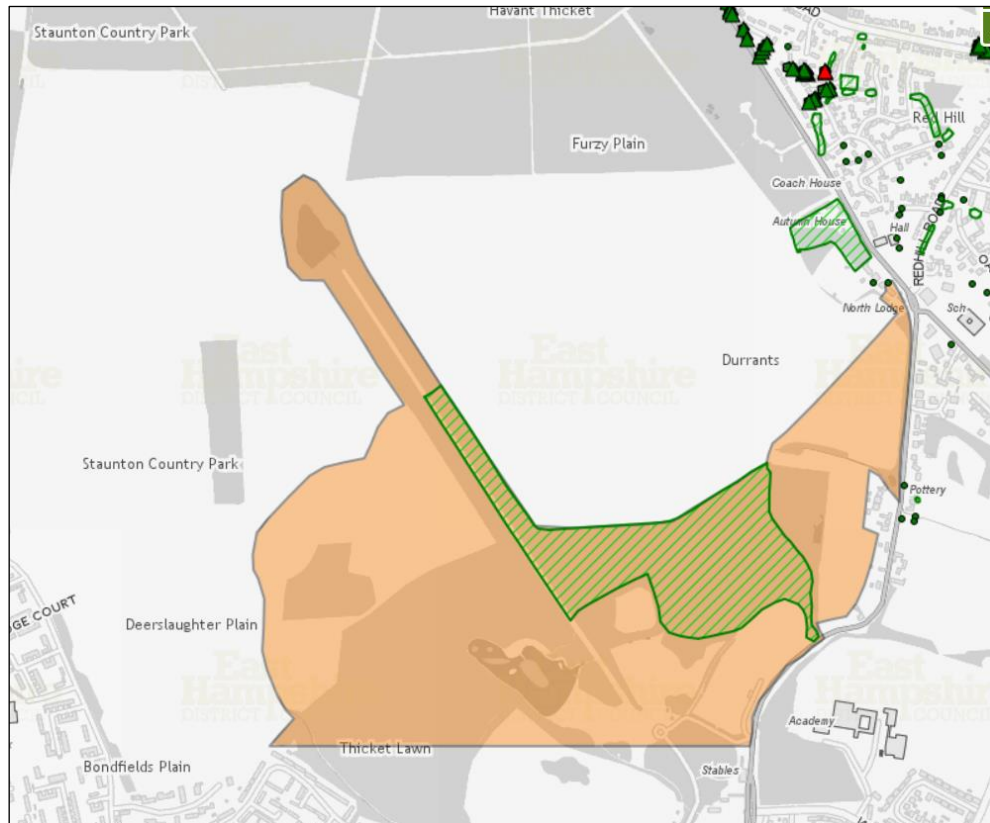


Figure 3-3 - TPO (EH67)78, Hammonds Lands Copse, ref W1 (hatched in green) [Source: <http://maps.havant.gov.uk/havant.aspx>]

- 3.19. Figure 3-4 illustrates the extents of the Woodside Manor Lodge woodland TPO (green stripe hatching) that borders part of the east extents of the reservoir site, and also captures (in orange) part of the Sir George Staunton Conservation Area.

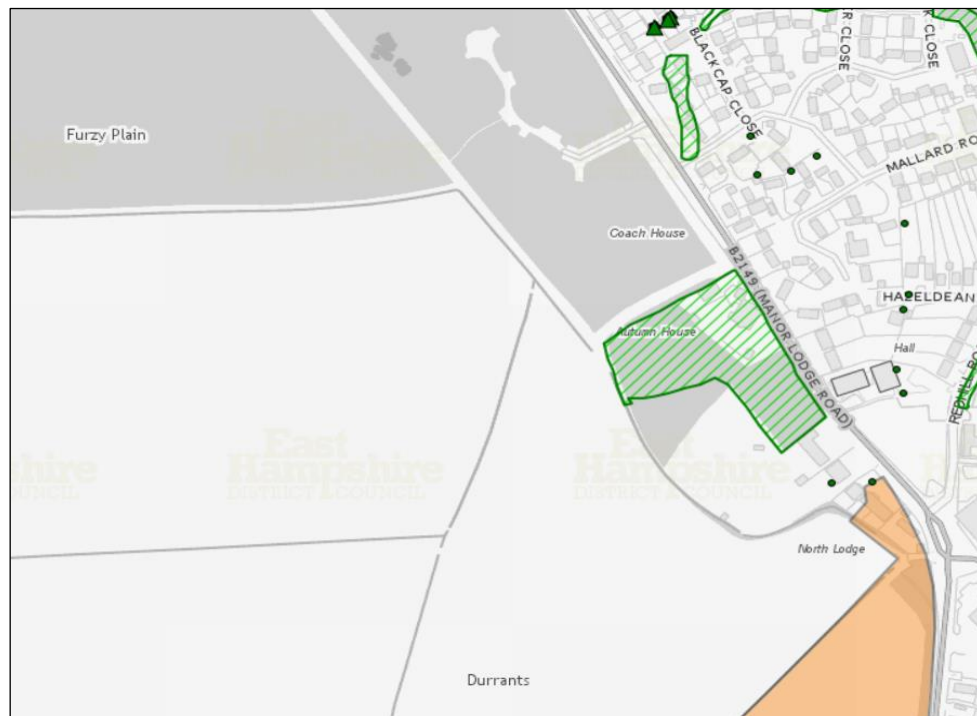


Figure 3-4 - TPO (EH227)90, Previously k/a Woodside Manor Lodge Rd, ref W1 (hatched in green) [Source: <http://maps.havant.gov.uk/havant.aspx>]

Historic tree data

- 3.20. Cross and Sanderson (2020) provide extensive review and research of historic map data for the reservoir site and part of the pipeline corridor. This information shall not be copied into this report.

Veteran trees

- 3.21. Cross and Sanderson (2020) have identified a total of 18no. veteran trees as part of their assessments in The Avenue and considered to be part of the pre-enclosure trees in this locality.
- 3.22. The trees contain various decay features that provide saproxylic habitat value, but in their reporting, it was confirmed that these were few in number. Only one of these trees has been recorded individually as part of this report, and that is believed to be the southern red dot and referenced as tree W127V in this report. It was noted within the Cross and Sanderson report that their locations are open to discrepancy based on the limitations of their recording equipment.
- 3.23. The locations of the trees are shown on Figure 3-5 below and have been incorporated into the TPPs.



Figure 3-5 - location of veteran trees in The Avenue. Red dots are for trees with lichen interest, and blue dots are for trees without lichen interest [Source: Cross and Sanderson, 2020]

- 3.24. Those individual trees that have been classified as veteran specimens as part of this report are referenced as 'V' within the life stage classification column of the survey schedule and shaded gold on the TPPs. A total of 8 veteran trees were identified as part of this assessment. All these trees are growing within or adjacent to the pipeline corridor. See Table 3-1 below for those trees recorded as veteran specimens.

Table 3-1 – Veteran Trees

Tree no.	Species	Location	Summary of value	Tree photographs
T075	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	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	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	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
T107	Common Oak	Great Copse Easting:47185401 Northing:10845605	Size: Large stem girth in comparison to other trees in locality. Condition: Decay features present including desiccated white rot and developing heartwood decay Dead branches and old storm damage recorded in crown. Crown previously reduced in height and lateral spread. Regrowth in places. Abrupt angles on retained branches. 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 1280mm means it has a girth of 4.02m 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
T154	Common Oak	Leigh Park Easting:47118238 Northing:10795388	Size: Large stem girth in comparison to other trees in locality. Condition: Decay features present including basal cavity to east revealing hollowing main stem and decayed heartwood. Remnants of wood decay fungal bracket around cavity. Potential <i>Ganoderma spp</i> or <i>Fistulina. spp</i>. Dead branches and old storm damage recorded in crown with desiccated white rot present and saprophytic wood decay fungi visible. Biodiversity value: Decayed heartwood rot and white rot providing habitat for saproxylic invertebrates. Cultural and heritage value: Tree growing within open green space within Leigh Park. 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
T157	Common Oak	Leigh Park Easting:47078899 Northing:10783208	Size: Large stem girth in comparison to other trees in locality. Condition: Decay features present including hollowing main stem and decayed heartwood. Remnants of wood decay fungal bracket around cavity. Potential <i>Ganoderma spp.</i> Crown extensively reduced. Dense epicormic growths regenerated. Potential former pollard given crown break at 3m into multi stems. Biodiversity value: Decayed heartwood rot and white rot providing habitat for saproxylic invertebrates. Cultural and heritage value: Tree growing within open green space within Leigh Park. 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
T160	Common Oak	Leigh Park Easting:47082477 Northing:10787400	Size: Large stem girth in comparison to other trees in locality. Condition: Dense ivy encroachment on main stem and into crown hindering full assessment of condition. Biodiversity value: White rot providing habitat for saproxylic invertebrates. Cultural and heritage value: Tree growing within open green space within Leigh Park. Age: It's 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).	

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 D of this report) that illustrate the Scheme, the Scheme boundary, the recorded trees and trees that would require removal or potential removal to facilitate the Scheme.
- 4.3. The drawings cover the outline of the Scheme. The assessment of tree loss is based on a reasonable worst-case scenario given the scale of the earthworks making tree loss unavoidable. The ability to retain trees through bespoke engineering options could be explored to retain those trees not directly within the footprint of the earthworks and in consultation with the arboriculturist. This will not be possible for all trees within the direct footprint of the works, which includes 17no. veteran trees to be lost within The Avenue.
- 4.4. Confirmation on tree removals will be undertaken prior to construction and detailed within an Arboricultural Method Statement (AMS), which will also confirm protection measures for the retained trees. This includes the pipeline corridor which may be realigned within the red line boundary extents, with due regard to retain trees as captured within the supporting Record of Environmental Actions and Commitments (REAC).
- 4.5. 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.
- 4.6. Entries in the impact column include removal (abbreviated as REM and highlighted as red); part removal (abbreviated as PRG and highlighted as orange); and retained (abbreviated as RET and highlighted as green). Where the trees fall outside the Scheme boundary, the default entry is retained.

Root protection areas

- 4.7. 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."*
- 4.8. 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.
- 4.9. The use of RPAs will become more prevalent during the detailed design process: the infringement into these areas should be reduced where possible through sympathetic engineering approaches. The current TPPs are to be used to inform the continued progression of the scheme, similarly, the survey schedules which contain RPA details for the groups recorded.
- 4.10. Where the veteran trees specimens could be impacted upon by the proposals then the actual root zones of the trees could be mapped using sonic-tomography to determine extent of any root loss that could occur, and to reduce or remove works in these locations.

Arboricultural impacts – veteran trees

- 4.11. Efforts have been made within the design to avoid veteran trees.
- 4.12. The impacts of the work have been assessed, and Table 4-1 covers the veteran trees within the Scheme boundary and the impacts of the works. The suggested mitigation measures refer to construction exclusion zones. These 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 4-1 – Veteran trees potentially impacted by the Scheme

Tree ID	Tree species	Potential impact	Suggested mitigation
T075	Common Oak	No direct impact. Tree outside of pipeline red line.	Not applicable.
T077	Common Oak	No direct impact. Tree outside of pipeline red line.	Not applicable.
T082	Common Oak	No direct impact. Tree outside of pipeline red line.	Not applicable.
T083	Common Oak	No direct impact. Tree outside of pipeline red line.	Not applicable.
T107	Common Oak	No direct impact. Tree outside of pipeline red line.	Not applicable.
T154	Common Oak	Potential construction impact for pipeline corridor.	Local diversion away from the RPA of the tree if feasible. Consider trenchless solution in this locality if the route cannot be re-aligned. As a minimum vacuum excavation or hand excavation using an air-spade would be required if the route is to continue as laid out on TPP. RPA and Crown extents will require protection measures, including the provision of barriers to define a construction exclusion zone around the tree, details would need to be confirmed within an AMS.
T157	Common Oak	Potential construction impact for pipeline corridor.	Within red line Scheme boundary. No re-alignment to occur within the RPA of this tree. RPA and Crown extents will require protection measures, including the provision of barriers to define a construction exclusion zone around the tree, should the route be moved any closure towards the tree than currently shown on the TPP.
T160	Common Oak	Potential construction impact for pipeline corridor.	Consider trenchless solution in this locality. The route is constrained given the localised narrowing in this locality. As a minimum vacuum excavation or hand excavation using an air-spade

Tree ID	Tree species	Potential impact	Suggested mitigation
			would be required if the route is to continue as laid out on TPP. RPA and Crown extents will require protection measures, including the provision of barriers to define a construction exclusion zone around the tree, details would need to be confirmed within an AMS.
W127V	Common Oak	Potential construction impact for reservoir.	Localised earthwork re-alignment to move the works outside of the RPA of the tree if feasible. RPA and Crown extents will require protection measures, including the provision of barriers to define a construction exclusion zone around the tree, details would need to be confirmed within an AMS.
The Avenue	Common Oak x 17	Removal to facilitate the reservoir construction.	No mitigation measures available to retain the trees. Compensation measures identified through consultation with NE to be implemented for these trees.

- 4.13. 17no. veteran trees would be permanently lost as a result of the reservoir construction. The layout and design of the reservoir has been informed by capacity requirements, hydraulic modelling and deployable outputs, meaning there are no feasible design options available to retain these trees.
- 4.14. The ability to retain veteran tree W127V has been possible through localised bank re-profiling in this locality and enabled the retention of part of The Avenue.
- 4.15. There are veteran trees recorded within or adjacent to the pipeline corridor. Efforts have been made within the design of to avoid or limit the impact on veteran trees. Hence veteran trees T075, T077, T082, T083 & T107 are now outside of the pipeline corridor. Similarly, localised re-alignment of the pipeline corridor has removed the potential for direct impact on veteran tree T157.
- 4.16. The remaining veteran trees T154 & T160 have the potential for construction impacts from the pipeline corridor and all are to be retained through appropriate mitigation measures. These measures should be defined as detailed designs and re-alignment options are explored within the red line extents adjacent to these trees. The likely mitigation measures could include trenchless solutions or the use of vacuum or hand excavations within the RPAs of the trees to try and retain any revealed roots where possible.

Arboricultural impacts – reservoir and access routes

- 4.17. Table 4-2 below reflects the current tree totals for the remaining surveyed trees required for removal or potential removal to facilitate the reservoir and access road works.

Table 4-2 – Arboricultural impacts for reservoir and access routes

Tree ID	BS Category Reference			
	Category A	Category B	Category C	Category U
GROUP (G)	79,928m ²	109,973m ²	603m ²	n/a
TREE (T)	2	38	2	n/a
HEDGEROW (H)	n/a	n/a	n/a	n/a

- 4.18. These trees are currently located within the footprint of the reservoir or its access routes. 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, namely compacted hard surfacing as part of the existing forestry access along part of the north access road.
- 4.19. 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 arboriculturists. The ability to retain some trees through detailed design is to be explored as the Scheme progresses but excludes the potential to retain the veteran trees in The Avenue whose loss is unavoidable.
- 4.20. The impacts on the Blendworth Fragment yew trees has been limited as far as reasonably practicable. The preservation of the more prominent yew trees has been achieved through the current layout of the proposals. The removal of the Turkey oak trees along the boundary of the B2149 is also seen as a benefit by NE.

Arboricultural impacts – pipeline corridor

- 4.21. Table 4-3 below reflects the current tree totals for the remaining surveyed trees required for removal or potential removal to facilitate the pipeline works.

Table 4-3 – Arboricultural impacts for pipeline corridor

Tree ID	BS Category Reference			
	Category A	Category B	Category C	Category U
GROUP (G)	n/a	681m ²	818m ²	n/a
TREE (T)	1	6	2	n/a
HEDGEROW (H)	n/a	n/a	19m ²	n/a

- 4.22. These trees are currently either located within the footprint of the pipeline corridor or within easement areas required to facilitate the installation of the pipeline and accommodate plant movement and other construction activity. A 10m wide easement for areas of land outside of a road corridor where the red line is restricted in Staunton Country Park has been used to inform this assessment.
- 4.23. Where the red line has been extended the limitations of construction vehicle movement and soil storage is reduced and as such the arboriculturists have in areas along Hermitage Stream reduced tree removals to a minimum. Based on the assumption that the trench for the pipeline could be excavated on opposing sides of pinch points in between trees. As illustrated on Figure 4-1 below.

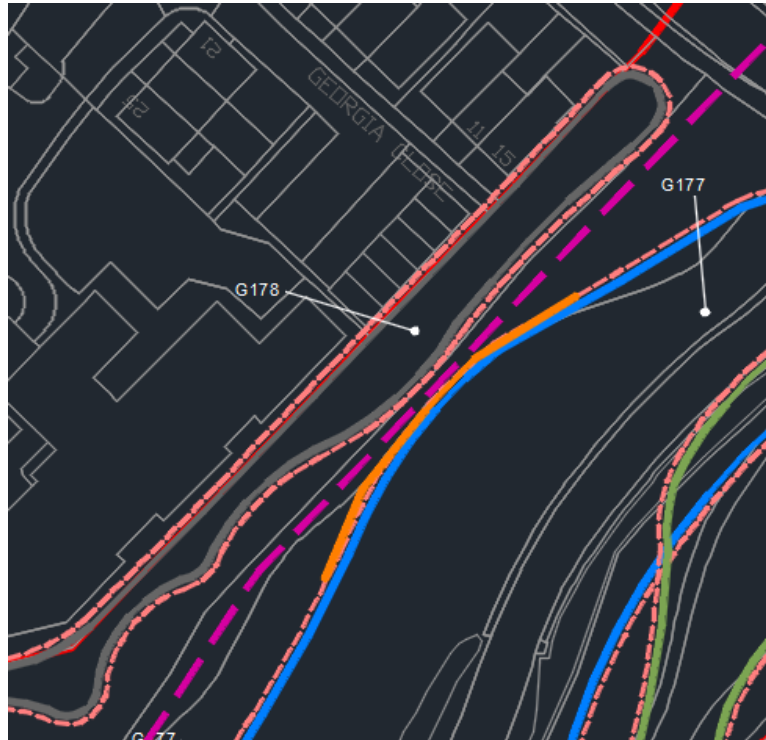


Figure 4-1 - extract from Atkins TPP. Pink dashed line forming pipeline corridor.

- 4.24. The works within the road corridors shall involve excavations that are in line with the following cross sections:

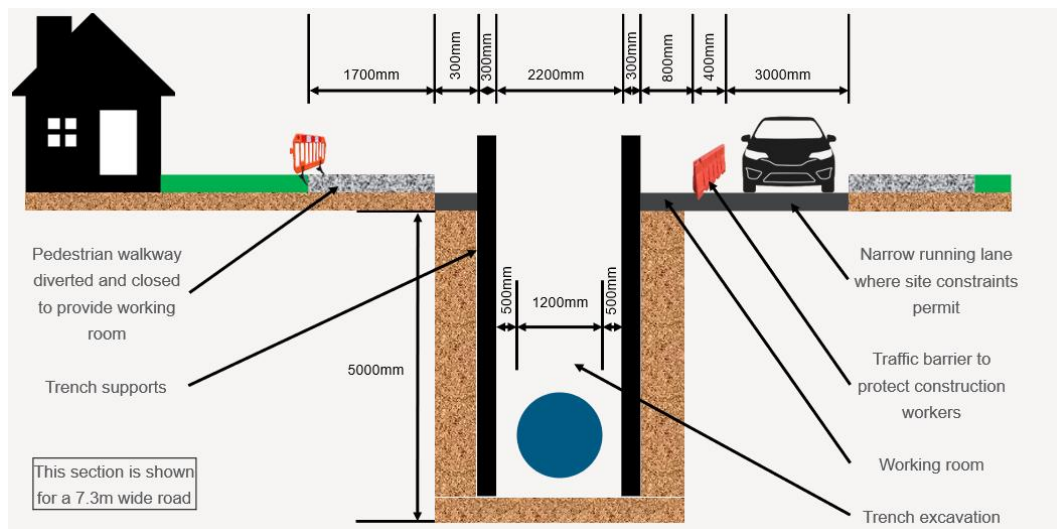


Figure 4-2 - typical cross section for 7.3m wide road [Source: 200414-Havant Reservoir draft Construction Sequence V0.7 WIP]

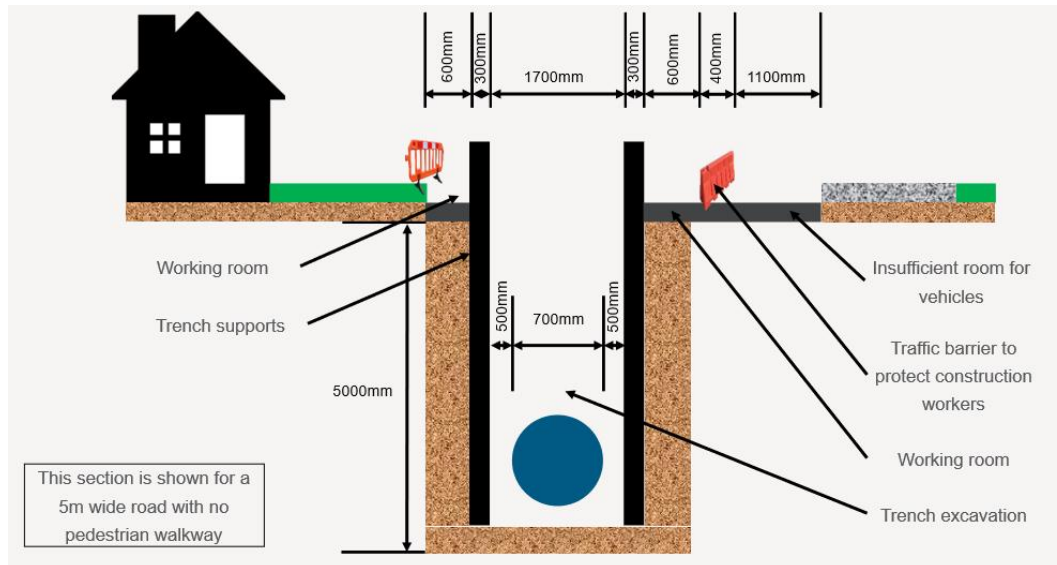


Figure 4-3 - typical cross section for 5m wide road [Source: 200414-Havant Reservoir draft Construction Sequence V0.7 WIP]

- 4.25. The impacts of these works are reduced for trees based on the existing disturbed ground conditions, including potential historic root severance from utility installations. Whilst its reduced, such works would not be negligible in terms of potential impacts on tree roots. As such any areas adjacent to trees and within their RPAs would require specific mitigation measures and defined within an AMS. Specific mitigation measures could include localised trenchless solutions or vacuum excavations of revealed sub-soils under arboricultural supervision.
- 4.26. As part of detailed designs and contractor led approaches any easements are to be reviewed in favour of tree retention and reduced where possible. This includes any potential re-alignment options within the red line extents of the pipeline corridor that may impact on trees.
- 4.27. Tree references G161 to G189 & T196 are within the red line pipeline corridor. As noted, these have not received ground-level walked assessments by the arboriculturists. However, they have been plotted using aerial imagery to provide desk-based information to inform the ongoing development of the pipeline corridor.
- 4.28. Any remaining trees not included as part of this assessment that fall within the red line extents of the pipeline corridor are to be assessed by an arboriculturist prior to any re-alignment confirmation to ensure significant trees are retained where feasible, and to limit the impacts of the works on trees. Significant trees should be considered as those that are BS Category A or B trees in line with the scope of that category's definition as defined in Appendix A of this report.
- 4.29. Where trees are partly within the footprint of the pipeline corridor the arboriculturists have used the percentage of RPA encroachment to determine whether a tree(s) could be retained.

Arboricultural impacts – TPO trees and Conservation Area

- 4.30. There are TPO trees and the Sir George Staunton Conservation Area within the Scheme boundary that would be impacted upon by the Scheme.
- 4.31. The TPO that is impacted upon:
- TPO (EH67)78, Hammonds Lands Copse, ref W1.
- 4.32. The impacts of the works include the removal of trees to facilitate the Scheme. Those trees that are not directly within the earthworks that could potentially be retained through specific working measures would need to be confirmed.
- 4.33. The TPO that is outside of the red line scheme boundary and should not be impacted upon is:
- TPO (EH227)90. Previously k/a Woodside Manor Lodge Rd. ref W1.

5. Mitigation

General

- 5.1. Mitigation measures and compensation for habitat loss and landscape effects is outlined in the relevant EA chapters (Chapter 9 Biodiversity and Chapter 11 Landscape and Visual in ES Volume 2) and will be further developed during detailed design of the Scheme and approved prior to commencement of construction.
- 5.2. The principles of the mitigation hierarchy^{2,3} have been adopted and used when considering impacts and subsequent effects on veteran trees within the Scheme boundary.
- 5.3. The principles of the mitigation hierarchy are that in order of preference impacts on biodiversity should be subject to:
 - Avoidance,
 - Mitigation, and
 - Compensation.
- 5.4. Opportunities for enhancement were sought during design.
- 5.5. An Outline Environmental Management Plan (OEMP) (Appendix A2.1 of ES Volume 4) has been developed. Measures regarding the protection of retained trees and actions to be taken to limit the adverse impacts of construction and compensate for tree loss are also provided as environmental commitments in the Register of Environmental Actions and Commitments (REAC) which include the following:
 - Where trees are not recorded as part of this reporting, they are to be assessed by an arboriculturist to inform on any impacts that could occur from the construction of the pipeline.
 - Protection of retained trees following standard practice (i.e. BS 5837:2012 Trees in relation to design, demolition and construction – recommendations). A construction exclusion zone will be established using steel mesh panel fencing, or similar, around retained trees where works are not limited by the existing roads or other associated hard infrastructure that could be protecting underlying tree roots.
 - The retained veteran trees shall be assessed by an arboriculturist prior to construction to inform on any potential remedial works that maybe required to manage any structural or physiological defect(s) that increase the likelihood of full or partial failure of the tree or tree part within falling distance of the works. This forms part of a duty of care to both people and property laid down in the Occupiers Liability Acts 1957 and 1984, the Highways Act 1980 and Health and Safety at Work Act 1974. Veteran habitat features are often defects, meaning any potential works will be sympathetic, whilst being reasonable in order to manage the risk of harm to people or property.

Arboricultural mitigation measures

- 5.6. The tree survey schedules (see Appendix B of this AIA) show management recommendations for those trees which at the time of the survey were identified as requiring management intervention. Any works recorded for retained trees will be confirmed prior to construction and included within an AMS.
- 5.7. As part of the Scheme, designers have sought to avoid impacts on trees and have achieved this in some cases. Those trees that can be retained are illustrated by having no red cross on the TPPs or do not fall within red hatched areas.
- 5.8. Trees that are to be retained would be protected using temporary fencing to be installed around RPAs or any confirmed buffer zone. The location of any protective fencing for retained trees would

² Department of Communities and Local Development (2018). National Planning Policy Framework, Paragraph 118. <https://www.gov.uk/government/publications/national-planning-policy-framework--2>

³ CIEEM (2018) Guidelines for Ecological Impact Assessment in the UK and Ireland: Terrestrial, Freshwater, Coastal and Marine, Paragraph 1.19. Chartered Institute of Ecology and Environmental Management, Winchester.

need to be confirmed prior to construction and included within updated TPPs and supplemented by an AMS.

- 5.9. The specification for the protective fencing should be a 'Heras'-type fencing, which should be installed to protect both the crowns and RPAs of trees and to establish a Construction Exclusion Zone (CEZ) around the trees. Site operations not permitted in the CEZ without consultation with an arboriculturist include the storage of plant, equipment or materials; vehicular or plant access; the washing down of vehicles or machinery; the handling, discharge or spillage of any substances, including cement washings. No mechanical digging, scraping or excavation shall be permitted in the CEZ and no earthworks or changes in the finished ground levels other than those agreed by an arboriculturist.

Arboricultural compensation measures

- 5.10. Compensation for loss of veteran trees from The Avenue could include measures such as veteranising existing trees and ring barking non-native trees, such as Turkey oak, to create standing dead wood. The trees subject to these works would be determined during detailed design and will be of broadly the same species as those lost and in an appropriate location to complement the existing veteran tree resource. Examples of veteranisation could include ring-barking of main stem and/or major limbs to promote heartwood and sapwood decay, coronet cuts and/or deliberate snapping or shattering of limbs to enable ingress of water and subsequently fungal attack and felling of whole trees to be retained in situ to benefit species that prefer deadwood in direct contact with, and under the ground.
- 5.11. Standing and fallen deadwood from the lost veteran trees could also be used and other means to provide ecological benefits and maximise the value of the features. During detailed design the appropriate approach on an individual tree-by-tree basis will be determined.
- 5.12. Further details are provided in Chapter 9 Biodiversity in ES Volume 2.

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)

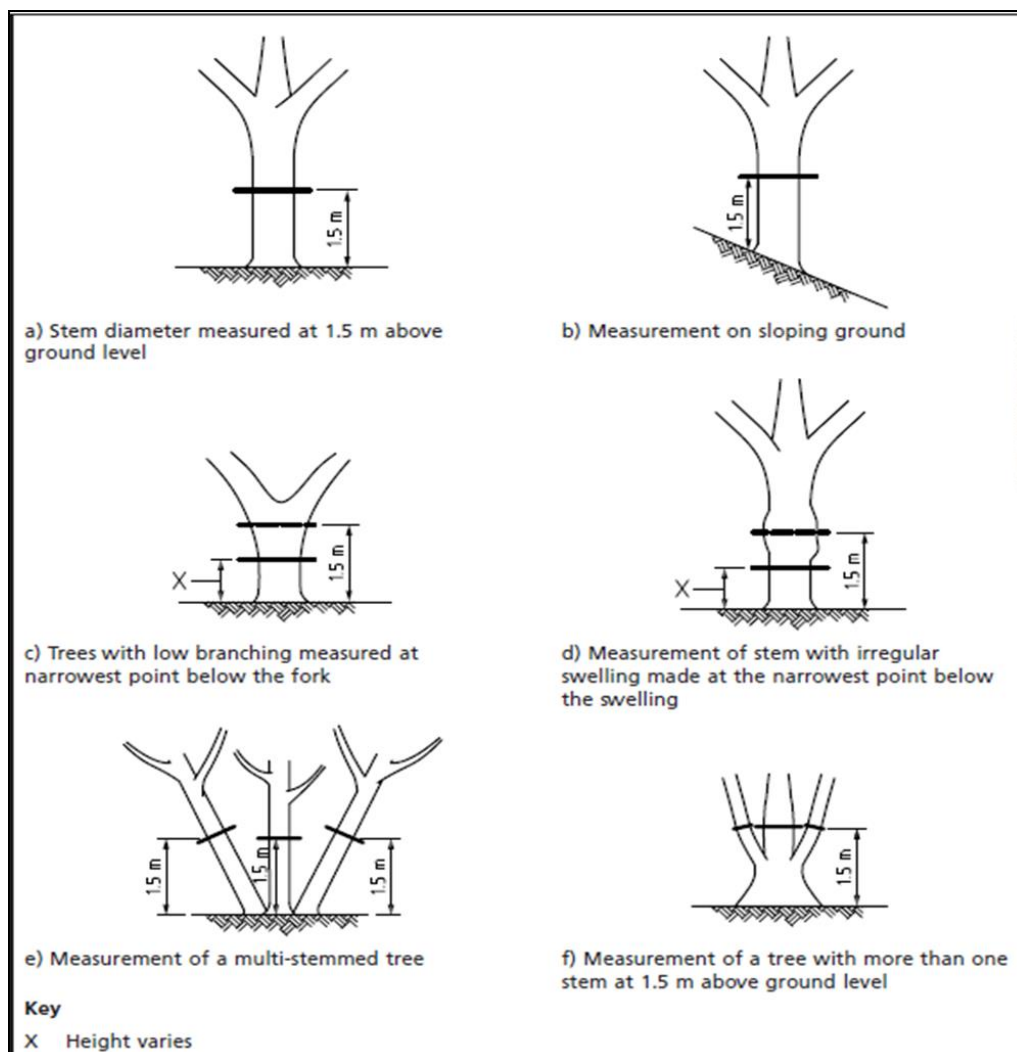
U – Illustrated as dark red (RGB code 127-000-000)

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.

(Note: Red hash tag '#' will denote that a measurement is estimated)

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 NOTE Category U trees can have existing or potential conservation value which it might be desirable to preserve; see 4.5.7.		See Table 2
Trees to be considered for retention			
1 Mainly arboricultural qualities			
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)
2 Mainly landscape qualities			
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
3 Mainly cultural values, including conservation			
Trees with no 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			
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			
See Table 2			

Appendix B. Tree survey schedule

Havant Thicket Reservoir Project

Appendix A9.14B: Tree Survey Schedule

Tree ID	Species	Height (m)	Stem Diameter (mm)	Branch spread N (m)	Branch spread E (m)	Branch spread S (m)	Branch spread W (m)	First significant branch height (m)	Canopy height (m)	Life Stage	Vitality	General observations	Preliminary management recommendations	Estimated Remaining Contribution (Years)	Category Grading	Remove/Part Remove/Retain	Quantities for removal	RPA Radius (m)
T001	Oak	17	610	6	8	8	8.0	2	1.5	M	Good	On west bank of waterlogged ditch; hollow 0-2000mm, with cavity opening to north-west, long-established columns of reaction wood growth	No works required at time of survey	20+	B2	RET		7.3
T002	Common Oak	17	480	9	2	7	9.5	4-W	3	EM	Good	Low crown height to west over access road. Crown suppression to east. Shallow ditch adjacent to tree. Co-dominant stems from approximately 7m. Union appears sound	No works presently required	20+	B2	RET		5.8
T003	Common Oak	17	730	8	10	9	8.0	4-NE	4	M	Good	Shallow ditch between tree and verge. Co-dominant stems from approximately 3m. Union appears sound. Occasional small to moderate diameter dead wood in lower and middle crown. Dense ivy encroachment in crown.	No works presently required	40+	A2	RET		8.8
T004	Oak	19	800	9	12	11	10.0	1-S	2	M	Good	On west bank of dry wood boundary ditch; occasional deadwood stubs and branches in large crown, which extends over track to east; light ivy encroachment.	Remove larger deadwood if adjacent to proposed works	40+	A2	RET		9.6
T005	Common Beech	18	900	8	10.5	8	8.0	4-E	4	M	Good	Growing approximately 4m from existing hard surface access road. Basal cavity to north west, revealing developing heartwood decay and desiccated white rot visible. Occasional small to moderate diameter dead wood in lower crown. Decay cavities at old branch wounds.	No works presently required	40+	A2	RET		10.8
G005-S	Oak	15	500	7	11	4	18.0	1-SW	2.5	M	Good to fair	Pair of trees to west of track, southern tree on west bank of dry wood boundary ditch, northern tree 4m from track edge; slender branches of crown extending over track to east; southern tree growth to south suppressed by larger neighbour; slightly sparse crowns containing sub-75mm diameter deadwood branches, tears, stubs, hanging branches.	Remove larger deadwood if adjacent to proposed works	20+	B2	RET		6.0
G005-N	Oak	15	500	8	7	6	9.0	2	2.5	M	Good to fair	See above	See above	20+	B2	RET		6.0
T006	Common Oak	16	350;500	5	6.5	5	6.0	5-E	4	M	Fair	Co-dominant stems from ground level. Tree growing approximately 5m from existing hard surface access road. Dense ivy encroachment on stems and into crown. Occasional moderate diameter dead wood in lower and middle crown. Tree growing within shallow drainage ditch.	No works presently required	40+	B2	RET		10.8

Havant Thicket Reservoir Project

Appendix A9.14B: Tree Survey Schedule

Tree ID	Species	Height (m)	Stem Diameter (mm)	Branch spread N (m)	Branch spread E (m)	Branch spread S (m)	Branch spread W (m)	First significant branch height (m)	Canopy height (m)	Life Stage	Vitality	General observations	Preliminary management recommendations	Estimated Remaining Contribution (Years)	Category Grading	Remove/Part Remove/Retain	Quantities for removal	RPA Radius (m)
T007	Common Oak	20	990	10	12	10	10.0	6-E	4	M	Fair to good	Tree growing on boundary fence on raised bank. Historic drainage ditch between tree and verge. Broad open crown. Occasional small to moderate diameter dead wood in lower and middle crown. Dense ivy encroachment on main stem and into crown. No indication of stem hollowing. Co-dominant stems from approximately 5m. Hazard beam to south east at approximately 12m. Branch within small distance of potential works area.	Reduction of hazard beam if its within works area.	40+	A2	RET		11.9
G008-A	Oak	16	430 + 300	8	8	8	8.0	1.5	2	M	Good	Medium-sized oak trees, frequently multi-stemmed; ivy encroachment into upper crown of some trees (-A and -B); trees -C and -D to east of wood boundary ditch; infrequent small diameter deadwood.	No works required at time of survey	20+	B2	RET		6.4
G008-B	Common Oak	17	480	9	12	12	8.0	3	3	EM	Good			20+	B2	RET		5.8
G008-C	Common Oak	18	560	8	8	8	8.0	3	3	EM	Good			20+	B2	RET		6.7
G008-D	Common Oak	18	560	8	8	8	8.0	3	3	EM	Good			20+	B2	RET		6.7
G009-A	Turkey Oak	18	560	8	8	8	8.0	3	2	EM	Good	Trees growing beyond shallow ditch to east of track edge; Turkey oak crowns typically upright, slender-limbed and slightly asymmetrical	Remove hanging branch if adjacent to proposed works	20+	B2	REM		6.7
G009-B	Turkey Oak	18	560	8	8	8	8.0	3	2	EM	Good			20+	B2	RET		6.7
G009-C	Turkey Oak	20	540	10	10	10	10.0	4	3	EM	Good			20+	B2	RET		6.5
G009-D	Turkey Oak	20	630	10	9	11	12.0	5-SW	5	EM	Fair	Hollow at base to at least 1500mm, cavity opening to south; adaptive growth - pronounced basal flare; large crown slightly sparse, history of branch tears.	Remove larger deadwood if adjacent to proposed works	20+	B2	RET		7.6
G009-E	Turkey Oak	200	600	10	11	12	12.0	7-W	7	EM	Good			20+	B2	RET		7.2
G009-F	Common Oak	21	600	9	11	11	9.0	2	2	EM-M	Good	Long-limbed crown, occasional sub-75mm diameter deadwood.	Remove larger deadwood if adjacent to proposed works	40+	B2	REM		7.2
G009-G	Common Oak	21	560	11	9	10	9.0	2	2	EM-M	Good	Upright form.		40+	B2	RET		6.7
T010	Common Oak	16	650;500	5	9.5	7	7.0	4-E	4	M	Good	Growing within shallow drainage ditch. Co-dominant stems from approximately 1m. Union appears sound. Large diameter dead wood in lower crown to north. Occasional small to moderate diameter dead wood in middle crown.	No works presently required	40+	A2	RET		11.9

Havant Thicket Reservoir Project

Appendix A9.14B: Tree Survey Schedule

Tree ID	Species	Height (m)	Stem Diameter (mm)	Branch spread N (m)	Branch spread E (m)	Branch spread S (m)	Branch spread W (m)	First significant branch height (m)	Canopy height (m)	Life Stage	Vitality	General observations	Preliminary management recommendations	Estimated Remaining Contribution (Years)	Category Grading	Remove/Part Remove/Retain	Quantities for removal	RPA Radius (m)
T011	Common Oak	16	660	6	6	6	6.0	4-E	6	M	Fair	Growing on bank of shallow drainage ditch. Moderate diameter dead wood in lower and middle crown. Light ivy encroachment on main stem and into crown. Desiccated white rot visible on old stem stub at ground level to north.	No works presently required	40+	B2	RET		7.9
T012	Yew	7	700	5	5	4	4.0	3-E	3	M	Fair	Growing approximately 3m from existing hard surface access road. Loss of vitality visible in crown. Dieback and thinning present. Historic crown lifting to east.	No works presently required	40+	B3	REM		8.4
T013	Beech	19	630	14	14	12	3.0	4-E	2.5	M	Good to fair	6m to west of track, slight lean towards and crown growing over track; extensive basal decay and hollowness, with cavity opening to north-east; occasional deadwood branches in lower crown	Crown reduction recommended due to basal decay, and proximity to, and lean towards, track	20+	B2	RET		7.6
T014	Oak	21	640	11	14	6	9.0	2-NE	12	M	Fair	On bank to west of track, 2.5m to north-west of T013; high-crowned, occasional branch tears; low limb to north-east mostly dead	No works required at time of survey	20+	B2	RET		7.7
G015A	Common Oak	16	700	5	9	9	8.0	4-E	4	M	Fair to good	Growing on bank of drainage ditch. Intermittent trees within G015 of similar size and age. Co-dominant stems from approximately 1.5m, union appears sound. Occasional small to moderate diameter dead wood in lower and middle crown.	No works presently required	40+	B2	RET		8.4
G015B	Common Oak	16	500	5	9	4	3.0	3-E	3	EM	Fair	Habitat hole in old branch wound to south on main stem at approximately 2m. Crown suppression to west. Growing on curve to east.	No works presently required	40+	B2	RET		6.0
G015C	Common Oak	17	500	6	6	4	6.0	4-E	4		Good	Growing on curve to north. Light ivy encroachment on main stem.	No works presently required	40+	B2	RET		6.0
G015D	Common Oak	17	400;700	6	6	7	6.0	3-SE	4	M	Good	Co-dominant stems from ground level. Basal wound on north stem, desiccated white rot visible. Historic wound. Reaction wood on periphery. Occasional small to moderate diameter dead wood in lower and middle crown. Like all G015 on bank or top of drainage ditch	No works presently required	40+	B2	RET		7.2
G015E	Common Oak	16	400;400	3	3	6	5.0	2-S	2	EM	Fair to good	Co-dominant stems from base. Crown suppressed to north.	No works presently required	20+	B2	RET		8.4

Havant Thicket Reservoir Project

Appendix A9.14B: Tree Survey Schedule

Tree ID	Species	Height (m)	Stem Diameter (mm)	Branch spread N (m)	Branch spread E (m)	Branch spread S (m)	Branch spread W (m)	First significant branch height (m)	Canopy height (m)	Life Stage	Vitality	General observations	Preliminary management recommendations	Estimated Remaining Contribution (Years)	Category Grading	Remove/Part Remove/Retain	Quantities for removal	RPA Radius (m)
G015F	Common Oak	16	300;300;300;300	6	4	4	4.0	3-E	3	M	Good	Old coppice. Multi stems from approximately 500mm. Occasional moderate diameter dead wood in central crown.	No works presently required	20+	B2	RET		8.4
G015G	Common Oak	18	650	8	10	8	8.0	3-E	3	EM	Good	Occasional small diameter dead wood in lower crown. Broad crown. Growing on face of bank	No works presently required	20+	B2	RET		7.8
G015H	Common Oak	17	400;400;400	6	6	5	6.0	2-SE	1	EM	Good	Old coppice. Occasional small to moderate diameter dead wood in lower and middle crown.	No works presently required	20+	B2	RET		8.3
G015I	Common Oak	16	460;300;360;120	5	7	5	5.0	2-E	4	EM	Fair	Old coppice stool. Multi stem from ground level. Occasional moderate diameter dead wood in lower crown	No works presently required	20+	B2	RET		8.0
G015J	Common Oak	16	500;360	6	6	6	5.0	4-S	2	EM	Good	Growing approximately 1m below the level of the existing access road. Co-dominant stems from ground level.	No works presently required	20+	B2	RET		7.4
G016A	Common Oak	8	600	5	5	5	5.0	N/A	1	OM	Poor	Extensive dieback and dead wood recorded. Limited live crowns. Desiccated white rot visible.	Retain as dead wood habitat	10+	C3	RET		7.2
G016B	Common Oak	8	600	5	5	5	5.0	N/A	1	OM	Poor	Extensive dieback and dead wood recorded. Limited live crowns. Desiccated white rot visible.	Retain as dead wood habitat	10+	C3	RET		7.2
T017	Common Oak	17	500;600;450;600	9	9	9	9.0	4-E	5	M	Fair	Old coppice, 4no. Stems from base. Tree growing on top of drainage ditch. Developing heartwood decay on east stem. Large diameter dead wood on west stem. Small to moderate diameter dead wood in lower and middle crown.	No works presently required	40+	A2	RET		13.0
G018A	Yew	7	500;300	4	3	3	2.0	2.5-E	2	OM	Poor	Extensive crown thinning. Dead wood and dieback throughout crown. Historic crown lifting visible.	Retain as dead wood habitat	10+	C3	RET		7.0
G018B	Yew	7	600	2	2	5	4.0	1-S	1	OM	Poor	Extensive crown thinning visible. Small to moderate diameter dead wood throughout crown. Fused stems.	Retain as dead wood habitat	10+	C3	RET		7.2
T019	Common Oak	16	600	3	10	7	7.0	3-E	3	M	Fair	Crown suppression to north. Occasional small to moderate diameter dead wood in lower and middle crown. Growing on bank of drainage ditch.	No works presently required	40+	B1	RET		7.2

Havant Thicket Reservoir Project

Appendix A9.14B: Tree Survey Schedule

Tree ID	Species	Height (m)	Stem Diameter (mm)	Branch spread N (m)	Branch spread E (m)	Branch spread S (m)	Branch spread W (m)	First significant branch height (m)	Canopy height (m)	Life Stage	Vitality	General observations	Preliminary management recommendations	Estimated Remaining Contribution (Years)	Category Grading	Remove/Part Remove/Retain	Quantities for removal	RPA Radius (m)
T020	Common Beech	18	760	7	9	7	5.0	4-E	3	M	Good	Multi stems from approximately 3m, slight compression forks. No significant at present.	No works presently required	40+	A2	RET		9.1
T021	Yew	15	500 + 300	7	7	7	7.0	1	1.5	M	Fair to poor	2m beyond dry ditch to east of track; extensive crown dieback, especially eastern side of crown	Remove deadwood if adjacent to proposed works	20+	C2	REM		7.1
T022	Yew	15	730 + 500	10	8	6	8.0	1	1	M	Good	Twin-stemmed, possibly two trees, northern stem twisting to run horizontal, curving east towards track; branches cut back at track side	No works required at time of survey	40+	B2	RET		10.7
T023	Oak	21	450 + 450 + 300 + 250 + 250	9	12	11	9.0	1	3	M	Good	On west bank of dry ditch; multi-stemmed from ground level; sub-75mm diameter deadwood branches	Remove larger deadwood if adjacent to proposed works	40+	B2	RET		9.5
G024-A	Yew	15	950 at 400mm	7.5	7.5	7.5	7.5	1	0.5	M	Fair	Yew trees above track on east side; typically multiple stems rising upright from bole, with frequent rubbing and crossing of stems; all displaying dieback at crown extents	No works required at time of survey	20+	B2	RET		11.4
G024-B	Yew	15	600 + 600	10	5	10	10.0	0	0	M	Fair	Sprawling limbs resting on ground	No works required at time of survey	20+	B2	RET		10.2
G024-C	Yew	17	1000	18	10	10	7.0	0	0	M-OM	Fair	Diameter measured below crown break; extensive dieback, branch tears, collapsed limbs; habitat features	No works required at time of survey	40+	B3	RET		12.0
G024-D	Yew	17	780	11	11	11	11.0	0.5	0.5	M	Good	Branches near ground level cut back to near stem	No works required at time of survey	40+	B2	RET		9.4

Havant Thicket Reservoir Project

Appendix A9.14B: Tree Survey Schedule

Tree ID	Species	Height (m)	Stem Diameter (mm)	Branch spread N (m)	Branch spread E (m)	Branch spread S (m)	Branch spread W (m)	First significant branch height (m)	Canopy height (m)	Life Stage	Vitality	General observations	Preliminary management recommendations	Estimated Remaining Contribution (Years)	Category Grading	Remove/Part Remove/Retain	Quantities for removal	RPA Radius (m)
G024-E	Yew	16	850	7	5	7	7.0	0.5	0.5	M	Fair	Light dieback only; lower branches cut back to near stem	No works required at time of survey	40+	B2	RET		10.2
G024-F	Yew	14	660 at 500mm	9	9	9	9.0	1	0.5	M	Good	Lower branches cut back to near stem; minimal dieback	No works required at time of survey	40+	B2	REM		7.9
G024-G	Yew	17	830 + 620 + 400	10	7	8	18.0	1	1	M	Good	Smaller stem leaning to east; lower branches cut back to near stem; minimal dieback	No works required at time of survey	40+	A2	RET		13.3
G024-H	Yew	16	560	7	7	7	7.0	1.5	1	EM-M	Good	Comparatively standard form, no dieback	No works required at time of survey	20+	B2	REM		6.7
G024-I	Yew	14	400 + 380	7	7	7	7.0	1	1	M	Fair	Non-professional crown lifting; widespread light dieback	No works required at time of survey	20+	B2	REM		6.7
G024-J	Yew	11	440 + 400	7	7	7	7.0	1	0.5	M	Fair	Non-professional removal of lower branches; widespread light dieback	No works required at time of survey	20+	B2	RET		7.2
T025	Yew	7.5	740	6	6	6	6.0	1.5-S	1	M	Fair	Slight crown thinning. Growing on ridge of drainage ditch.	No works presently required	10+	C3	RET		8.9
T026	Yew	8	1200	7	7	7	7.0	2-S	0.5	M	Fair	Growing on ridge of drainage ditch. Large stem girth. Limited dead wood habitat. Crown cut back to south. Aerial buttress roots.	No works presently required	40+	A3	RET		14.4
T027	Common Oak	17	550;480;500;350	8	8	10	8.0	4-S	3	M	Good	Old coppice stool. Multi stems from ground level. Broad open crown. Mutually suppressed crowns inducing leans on stems. Occasional small to moderate diameter dead wood in lower and middle crown.	No works presently required	40+	B2	RET		11.4

Havant Thicket Reservoir Project

Appendix A9.14B: Tree Survey Schedule

Tree ID	Species	Height (m)	Stem Diameter (mm)	Branch spread N (m)	Branch spread E (m)	Branch spread S (m)	Branch spread W (m)	First significant branch height (m)	Canopy height (m)	Life Stage	Vitality	General observations	Preliminary management recommendations	Estimated Remaining Contribution (Years)	Category Grading	Remove/Part Remove/Retain	Quantities for removal	RPA Radius (m)
T028	Common Oak	17	450;410;300	5	9	9	5.0	3-E	2	M	Good	Growing on face of ditch. Main stem trifurcates at approximately 1m. Unions appear sound. Crown dominant towards existing access road.	No works presently required	40+	B2	RET		8.1
T029	Oak	22	680	9	14	14	10.0	3	3	M	Good	On bank of wood boundary earthwork; neighbouring trees slightly suppressing crown growth	No works required at time of survey	40+	A2	RET		8.2
T030	Common Oak	18	660;250	8	5	9	5.0	6-SE	6	M	Fair	Growing on north bank of dry drainage ditch. Basal stem to west. Co-dominant union on east stem at 3m, union appears sound. Dense ivy encroachment on main stem and into crown	No works presently required	40+	B2	RET		8.1
T031	Common Oak	14	400;400	6	6	10	3.0	3-S	2	M	Fair to good	Growing on north bank of drainage ditch. Co-dominant stems from approximately 500mm. Developing heartwood decay beneath union within basal cavity. Crown suppressed by adjacent trees.	No works presently required	40+	B2	RET		6.8
T032	Yew	16	650	7	7	7	7.0	1	0.5	M	Good	Growing at foot of wood boundary earthwork, with network of roots extending along bank; widespread epicormic growth	No works required at time of survey	40+	B2	REM		7.8
T033	Common Oak	18	900	8	9	9	8.0	2-S	2	M	Good	Growing on top of drainage ditch bank. Pronounced buttress roots and surface root activity to south and on bank face. Light ivy encroachment on main stem. Open crown form.	No works presently required	40+	A2	RET		10.8
G034A	Common Oak	17	660	8	7	9	6.0	5-SE	4	M	Fair to good	Growing on top of drainage ditch bank. Occasional moderate diameter dead wood in lower crown.	No works presently required	40+	B2	RET		7.9
G034B	Common Oak	16	720	8	7	9	6.0	5-SE	4	M	Fair to good	Growing on top of drainage ditch bank. Occasional moderate diameter dead wood in lower crown.	No works presently required	40+	B2	RET		8.6
G034C	Common Oak	16	620	6	6	8	6.0	3-S	3	M	Fair	Face of bank. Crown suppression to north east.	No works presently required	40+	B2	RET		7.4

Havant Thicket Reservoir Project

Appendix A9.14B: Tree Survey Schedule

Tree ID	Species	Height (m)	Stem Diameter (mm)	Branch spread N (m)	Branch spread E (m)	Branch spread S (m)	Branch spread W (m)	First significant branch height (m)	Canopy height (m)	Life Stage	Vitality	General observations	Preliminary management recommendations	Estimated Remaining Contribution (Years)	Category Grading	Remove/Part Remove/Retain	Quantities for removal	RPA Radius (m)
T036	Yew	6	550	3	6	6	6.0	1-S	1	EM	Fair	Crown historically lifted. Growing on south bank of drainage ditch. Occasional small diameter dead wood in lower crown.	No works presently required	40+	B1	RET		6.6
T037	Yew	15	650	7	7	7	7.0	0.5-NE	0.5	M	Good	Atop wood boundary earthwork; extensive exposed root system along top of mound, with hollow beneath tree;	No works required at time of survey	40+	B2	RET		7.8
T038	Common Oak	20	750	6	7	14	5.0	4-S	4	M	Fair	Growing on raised earth bank. Slight lean to south. Co-dominant stems from 4m, slight included bark at junction. Pronounced basal swelling. Frayed branch wound at approximately 5m to south east. Potential habitat value.	No works presently required	40+	B2	RET		9.0
T039(0150)	Yew	15	800	6	9	8	8.0	1.5-NW	0.5	M	Fair to good	Relatively uniform crown. Occasional small diameter dead wood in lower and middle crown. Hung-up dead stem in crown to south east. Lower crown in contact with ground.	No works presently required	40+	A1	RET		9.6
T041(0772)	Yew	10	620	8	7	6	6.0	1-N	0.5	M	Fair	Growing north of earth bank. Occasional small to moderate diameter dead wood throughout crown. Dominant to north. Mutually suppressed crown	No works presently required	40+	B1	RET		7.4
T042(0149)	Yew	17	1130	8	8	8	8.0	1-N	1.5	M	Fair to good	Growing north of earth bank. Broad crown. Basal stems established. Occasional frayed branch wounds. Small to moderate diameter dead wood within lower and middle crown.	No works presently required	40+	A1	RET		13.6
T043 (0148)	Yew	16	760	8	7	5.5	7.0	1.8-W	1	M	Fair	Small to moderate diameter dead wood within lower crown. Lower branches in contact with ground in places. Slight crown thinning.	No works presently required	40+	B1	RET		9.1
T044(0142)	Yew	16	450;450;450;450;450	8	8	8	8.0	1.8-SW	1.5	M	Fair	Multi stems from ground level. Historic pruning of lower branches visible to west. Small to large diameter dead wood within lower and middle crown. Desiccated white rot present. Crown thinning.	No works presently required	40+	A1/3	RET		10.8
T045 (0144)	Yew	15	680	7	7	6	6.0	1-S	0	M	Fair	Crown thinning. Small to moderate diameter dead wood within lower and middle crown. Basal stems failed and resting on ground to northeast. Snapped and hanging branches.	No works presently required	40+	B1	RET		8.2
T046 (0143)	Yew	12	790	9	9	9	9.0	0-W	0.5	M	Fair	Small to large diameter dead wood in lower crown. Some branches resting on ground. Water pockets in main stem. Balanced crown. Desiccated white rot present. Some crown thinning.	No works presently required	40+	B1	RET		9.5

Havant Thicket Reservoir Project

Appendix A9.14B: Tree Survey Schedule

Tree ID	Species	Height (m)	Stem Diameter (mm)	Branch spread N (m)	Branch spread E (m)	Branch spread S (m)	Branch spread W (m)	First significant branch height (m)	Canopy height (m)	Life Stage	Vitality	General observations	Preliminary management recommendations	Estimated Remaining Contribution (Years)	Category Grading	Remove/Part Remove/Retain	Quantities for removal	RPA Radius (m)
T047(0141)	Yew	17	620;280	8	8	8	8.0	0.5-SW	0.5	M	Fair to good	Basal stems to south west. One in contact with ground, other growing vertically through crown. Dense epicormic growths on east side of main stems, benefitting from sunlight exposure. Small to large diameter dead wood within lower and middle crown. Hanging broken small diameter branches to west.	No works presently required	40+	B1	RET		8.2
T048(0146)	Yew	17	830	8	10	10	9.0	1-E	0.5	M	Fair	Pronounced scaffold branches to south. Large diameter dead wood within lower crown, developing heartwood decay on large diameter cut branch to south east. Further small to moderate diameter dead wood within middle crown. Multi stems from approximately 4m. Broad open crown. Silver birch collapsed and hung-up in west crown extents.	Remove silver birch within west crown extents	40+	A1	RET		10.0
T049(0145)	Yew	12	530	6	7	7	6.0	1-E	0.5	M	Fair	Developing heartwood decay in large basal wound to south west. Historic. Pronounced reaction wood on periphery. Small to moderate diameter dead wood within lower crown. Relatively squat habit.	No works presently required	40+	B1	RET		6.4
T050	Oak	18	760	8	4	10	10.0	3	4	M	Good to fair	On wood boundary earthwork, with steep dry ditch 2m to west; crown growth suppressed by neighbouring trees on east side; occasional branch tears, sub-75mm diameter deadwood branches and stubs; full crown of marcescent leaves at time of survey.	Remove larger deadwood if adjacent to proposed works	20+	B2	RET		9.1
T051	Common Oak	19	750	6	6	6	8.0	1-NW	1	M	Fair to good	Basal cavity to south east revealing developing heartwood decay. Pronounced buttress roots compensating for any loss in structural integrity. Dense ivy encroachment on main stem and into crown. Occasional small to moderate diameter dead wood within lower and middle crown.	No works presently required	40+	B1	RET		9.0
T052(0154)	Yew	17	780;330;280	10	6	9	9.0	1-NE	0.5	M	Fair to good	Crown suppressed to east. Small to large diameter dead wood within lower crown. Large diameter dead branch stubs to south and east with developing heartwood decay. Broad crown to remaining cardinal points. Horizontal split in lower branch to south west. Habitat potential. Desiccated white rot present on large wound on east basal stem. Developing heartwood decay.	No works presently required. Ganoderma spp, brackets present in cavity within main stem at approximately 1m. Desiccated white rot present, developing heartwood decay.	40+	A1/3	RET		10.7

Havant Thicket Reservoir Project

Appendix A9.14B: Tree Survey Schedule

Tree ID	Species	Height (m)	Stem Diameter (mm)	Branch spread N (m)	Branch spread E (m)	Branch spread S (m)	Branch spread W (m)	First significant branch height (m)	Canopy height (m)	Life Stage	Vitality	General observations	Preliminary management recommendations	Estimated Remaining Contribution (Years)	Category Grading	Remove/Part Remove/Retain	Quantities for removal	RPA Radius (m)
T053(0165)	Yew	16	960	10	9	9	4.0	1.5-SE	1	M	Fair to good	Large wound on south west side of main stem. Desiccated white rot present, potential developing heartwood decay. Small to moderate diameter dead wood in lower and middle crown. Slight fire damage on lower branches to west. Dense epicormic growths on branches in sunny aspect.	No works presently required	40+	B1	RET		11.5
T054	Oak	22	500 + 320 + 300 + 200	12	6	9	14.0	2	2	M	Good	On wood boundary earthwork; stems rising from near ground level; crown growth mostly to west, suppressed by neighbouring trees to east; sub-100mm diameter deadwood branches in lower crown.	Remove larger deadwood if adjacent to proposed works	40+	B2	RET		8.4
T055(0151)	Yew	14	990	9	9	9	9.0	1.5-E	1	M	Good	Multi stems from approximately 1.2m. Water pocket at centre, build of decaying leaf matter. Small to large diameter dead wood within lower and middle crown. Developing heartwood decay on north east stem at historic failure point.	No works presently required	40+	A1	RET		11.9
G056	Goat Willow	8	150	4	4	4	4.0	0	0	SM-M	Good	Line of goat willow formerly managed as hedge at 1m high, no longer managed and grown tall; originally planted on south-west side of ditch (waterlogged at time of survey), now also self-set at foot of ditch and on opposite bank; 2.5m between footpath and ditch.	No works required at time of survey	20+	B2	RET		1.8
W057	A Woodland	18	400	4	4	4	8.0	N/A	0	SM to EM	Fair to good	Mixed broad leaf dominated woodland. Silver birch abundant. Oak frequent and occasional goat willow, holly and Scots pine. Fairly uniform vertical structure. Wet ditch between trees and existing compacted hard-core footpath. Beyond footpath a further wet ditch exists before the site extents. Considerable root barrier to growth towards west.	No works presently required	20+	B2	RET		4.8
W058	A Woodland	20	800	8	8	8	8.0	N/A	0	Y to OM	Fair to good	Broad leaf dominated woodland. Abundant sycamore, holly, silver birch. Frequent oak, including occasional mature specimen. Goat willow Occasional Scots pine, including collapsed over mature specimen. Rare beech, yew. Limited understorey. Significant self sown trees. Existing wet drainage ditch between trees and site, including compacted aggregate footpath. Root barrier to growth. Rhododendron established.	Rhododendron management	40+	B2	RET		9.6

Havant Thicket Reservoir Project

Appendix A9.14B: Tree Survey Schedule

Tree ID	Species	Height (m)	Stem Diameter (mm)	Branch spread N (m)	Branch spread E (m)	Branch spread S (m)	Branch spread W (m)	First significant branch height (m)	Canopy height (m)	Life Stage	Vitality	General observations	Preliminary management recommendations	Estimated Remaining Contribution (Years)	Category Grading	Remove/Part Remove/Retain	Quantities for removal	RPA Radius (m)
W058A	Common Oak	15	400;400	6	1	6	6.0	4-W	4	SM	Good	Co-dominant stems from approximately 500mm. Tight union. Shallow wet ditch between tree and existing compacted aggregate footpath. Potential root barrier to growth towards west.	No works presently required	20+	B2	RET		6.8
W058B	Common Oak	17	550	7	4	7	8.0	4-NW	4	EM	Good	Shallow dry ditch between tree and existing compacted aggregate footpath. Dense ivy encroachment on main stem. Occasional moderate diameter dead wood within lower crown.	No works presently required	20+	B2	RET		6.6
W058C	Common Oak	15	350	3	3	3	5.0	4-W	4	SM	Fair	Existing wet ditch between tree and existing compacted aggregate footpath. Potential root barrier to growth. Light ivy encroachment on main stem. Occasional small to moderate diameter dead wood within lower and middle crown.	No works presently required	20+	B2	RET		4.2
T059	Horse Chestnut	20	610	6	4.5	11	7.0	2-S	2	M	Poor	Large tree, crown mostly dead; extensive decay of lower stem, east side; long narrow slit wounds on stems	Reduce to height of c.10m due to poor physiological condition	<10	U	RET		7.3
T060	Oak	25	990	11	24	12	4.0	4-E	3	M	Good	On linear mound in woodland; slight stem lean and crown growth to east; vast crown has occasional sub-100mm diameter deadwood; large dead branch with shear crack low to south-east; small girdling roots of adjacent rhododendron shrubbery restricting buttress growth; fence wire embedded in stem.	Remove girdling roots; remove larger deadwood if adjacent to proposed works	40+	A2	RET		11.9
T061	Beech	6	640	0	0	0	0.0	N/A	0	OM	Dead	Standing dead monolith. Developing heartwood decay. Extensive desiccated white rot present. Dead wood habitat value. Notably for saprophytic invertebrates.	No works presently required	10+	C3	RET		7.7
T062	Scots Pine	4	700	0	0	0	0.0	N/A		OM	Dead	4m monolith remains. Top failed and hung-up in adjacent tree. Extensive desiccated white rot present. Cracks and fissures visible. Dead wood habitat value, notably saprophytic invertebrates.	No works presently required	10+	C3	RET		8.4
T063	Oak	24	1110	12	12	10	9.0	3	4	M	Good	Large goblet shape; frequent sub-100mm diameter deadwood throughout crown; large branch tear wound above crown break to south-west.	Remove larger deadwood if adjacent to proposed works 59/60/63 mention damp ditch to south-west in all cases	40+	A2	RET		13.3

Havant Thicket Reservoir Project

Appendix A9.14B: Tree Survey Schedule

Tree ID	Species	Height (m)	Stem Diameter (mm)	Branch spread N (m)	Branch spread E (m)	Branch spread S (m)	Branch spread W (m)	First significant branch height (m)	Canopy height (m)	Life Stage	Vitality	General observations	Preliminary management recommendations	Estimated Remaining Contribution (Years)	Category Grading	Remove/Part Remove/Retain	Quantities for removal	RPA Radius (m)
G064	Goat Willow	11 ave.	200 ave.	6	6	6	6.0	0	0.5	Y-M	Fair	Mostly unmanaged goat willow growing in and along both sides of variably damp ditch line to north of track; at south-east end, less formal earth path on north side of ditch; older trees frequently multi-stemmed, result of previous cutting back to ground level; occasional self-set sycamore with co-dominant stems, infrequent birch, hawthorn; occasional collapsed stems	Remove collapsed stems if adjacent to proposed works	10+	C2	RET		2.4
T065	Common Oak	17	800	8	8	8	8.0	3-W	3	M	Good	Moderate ivy encroachment on main stem. Existing shallow damp ditch between tree and existing compacted aggregate footpath. Potential root barrier to growth towards west. Occasional stub of moderate diameter dead wood within middle crown.	No works presently required	40+	A2	RET		9.6
T066	Common Oak	17	900	9	9	9	9.0	4-NW	4	M	Good	Base not accessible. Measurements estimated. Broad open crown. Wet ditch providing root barrier to growth for part of west extents. Compacted aggregate footpath also between tree and site.	No works presently required	40+	A2	RET		10.8
H067	A Hedgerow	3	150	1.5	1.5	1.5	1.5	0	0	SM	Good	Tidy young beech hedge at garden boundary; dry ditch on site side	No works required at time of survey	10+	C2	RET		1.8
T068(1002)	Corsican Pine	28	900	10	10	10	10.0	6-N	5	M	Good	Prominent tree given large size and scale. Existing access road entrance approximately 2m from base of tree. Gravel surface. Occasional small to moderate diameter dead wood within middle crown.	No works presently	20+	A1	RET		10.8
T069	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	RET		12.6
T070	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	RET		13.2
G071	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	130m ² trees to be removed	2.4

Havant Thicket Reservoir Project

Appendix A9.14B: Tree Survey Schedule

Tree ID	Species	Height (m)	Stem Diameter (mm)	Branch spread N (m)	Branch spread E (m)	Branch spread S (m)	Branch spread W (m)	First significant branch height (m)	Canopy height (m)	Life Stage	Vitality	General observations	Preliminary management recommendations	Estimated Remaining Contribution (Years)	Category Grading	Remove/Part Remove/Retain	Quantities for removal	RPA Radius (m)
G071A	Common Oak	10	280	4	4	4	4.0	N/A	1	Y	Good	Part of G071.	No works presently required	20+	B2	REM		3.4
G071B	Common Oak	10	170	3	3	3	3.0	N/A	1	Y	Good	Part of G071.	No works presently required	20+	B2	REM		2.0
G071C	Common Oak	10	220	3	3	3	3.0	N/A	1	Y	Good	Part of G071.	No works presently required	20+	B2	RET		2.6
G071D	Common Oak	10	200	3	3	3	3.0	N/A	1	Y	Good	Part of G071.	No works presently required	20+	B2	RET		2.4
G071E	Common Oak	10	180	3	3	3	3.0	N/A	1	Y	Good	Part of G071.	No works presently required	20+	B2	REM		2.2
G071F	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	RET		1.7
T072	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	RET		8.9
T073	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	RET		13.2
T074	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	RET		12.0
T075	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	RET		15.6

Havant Thicket Reservoir Project

Appendix A9.14B: Tree Survey Schedule

Tree ID	Species	Height (m)	Stem Diameter (mm)	Branch spread N (m)	Branch spread E (m)	Branch spread S (m)	Branch spread W (m)	First significant branch height (m)	Canopy height (m)	Life Stage	Vitality	General observations	Preliminary management recommendations	Estimated Remaining Contribution (Years)	Category Grading	Remove/Part Remove/Retain	Quantities for removal	RPA Radius (m)
G076	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	PRG	316m ² trees to be removed	2.4
T077	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	RET		15.6
T078	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	RET		12.6
T079	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	RET		13.0
T080	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	RET		10.8
G081A	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	RET		1.8
G081B	Common Oak	8	150	3	3	3	3.0	N/A	1.5	Y	Good	Part of G081.	No works presently required	20+	C2	RET		1.8
G081C	Common Oak	8	150	3	3	3	3.0	N/A	1.5	Y	Good	Part of G081.	No works presently required	20+	C2	RET		1.8
G081D	Common Oak	8	210	4	4	4	4.0	N/A	1.5	Y	Good	Part of G081.	No works presently required	20+	C2	RET		2.5

Havant Thicket Reservoir Project

Appendix A9.14B: Tree Survey Schedule

Tree ID	Species	Height (m)	Stem Diameter (mm)	Branch spread N (m)	Branch spread E (m)	Branch spread S (m)	Branch spread W (m)	First significant branch height (m)	Canopy height (m)	Life Stage	Vitality	General observations	Preliminary management recommendations	Estimated Remaining Contribution (Years)	Category Grading	Remove/Part Remove/Retain	Quantities for removal	RPA Radius (m)
G081E	Common Oak	8	200	3	3	3	3.0	N/A	1.5	Y	Good	Part of G081.	No works presently required	20+	C2	RET		2.4
G081F	Common Oak	8	200	4	4	4	4.0	N/A	1.5	Y	Good	Part of G081.	No works presently required	20+	C2	RET		2.4
G081G	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	RET		1.8
G081H	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	RET		2.7
G081I	Common Oak	6	150	3	3	3	3.0	N/A	1.5	Y	Good	Part of G081.	No works presently required	20+	C2	RET		1.8
G081J	Common Oak	6	180	0	2	5	5.0	N/A	1.5	Y	Good	Part of G081.	No works presently required	20+	C2	RET		2.2
G081K	Common Oak	6	200	4	4	4	4.0	N/A	1.5	Y	Good	Part of G081.	No works presently required	20+	C2	RET		2.4
G081L	Common Oak	6	330	5	5	5	1.5	N/A	1.5	Y	Good	Part of G081.	No works presently required	20+	C2	RET		4.0
G081M	Common Oak	6	330	5	3	5	5.0	N/A	1.5	Y	Good	Part of G081.	No works presently required	20+	C2	RET		4.0
T082	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	RET		16.8

Havant Thicket Reservoir Project

Appendix A9.14B: Tree Survey Schedule

Tree ID	Species	Height (m)	Stem Diameter (mm)	Branch spread N (m)	Branch spread E (m)	Branch spread S (m)	Branch spread W (m)	First significant branch height (m)	Canopy height (m)	Life Stage	Vitality	General observations	Preliminary management recommendations	Estimated Remaining Contribution (Years)	Category Grading	Remove/Part Remove/Retain	Quantities for removal	RPA Radius (m)
T083	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	RET		15.0
T084	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	RET		6.4
T085	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	RET		4.2
T086	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	RET		13.4
G086	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	PRG	1no tree to be removed	4.3
G087A	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	RET		4.4
G087B	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	RET		3.8
G087C	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	RET		2.8
G087D	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	RET		4.6
H088	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	PRG	19m ² trees to be removed	1.2
G089A	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	REM		2.4

Appendix A9.14B: Tree Survey Schedule

Tree ID	Species	Height (m)	Stem Diameter (mm)	Branch spread N (m)	Branch spread E (m)	Branch spread S (m)	Branch spread W (m)	First significant branch height (m)	Canopy height (m)	Life Stage	Vitality	General observations	Preliminary management recommendations	Estimated Remaining Contribution (Years)	Category Grading	Remove/Part Remove/Retain	Quantities for removal	RPA Radius (m)
G089B	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	REM		2.4
G089C	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	RET		2.4
G089D	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	RET		2.4
G089E	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	RET		2.4
T091	Goat Willow	6	+ 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	RET		7.2
T092	Ash	20	700	2	16	6	2.0	5-E	3	M	Fair	Growing within woodland on lean to east. Crown also dominant to east. Historic ground disturbance around base. Dense ivy encroachment around base and into crown.	Reduce crown in lateral spread to east by approximately 5m.	20+	B2	RET		8.4
G093A	Hazel	4	80;80;80;80;80	4	4	4	4.0	N/A	0.5	M	Fair	Multi stem hazels, suggesting past felling to ground level and regeneration. Ivy encroachment on some stems. No recent management visible. Extensive leans on some stems.	No works presently required	10+	C2	RET		2.1
G093B	Hazel		100;100;100;100;100	5	5	5	5.0	N/A	0	M	Fair	Fused stems. Extensive leans	No works presently required	10+	C2	RET		2.7
T094	Ash	17	70 + 250 + 18	10	10	4	0	2	2	EM	Fair	On small earth mound at wood margin, leaning to north-east, away from large oak to west; established ivy into upper crown.	No works required at time of survey	20+	C2	RET		4.9
G095	Common Oak	20	750	7	7	7	7.0	3-E	6	M	Fair to good	Growing on edge of woodland. Dense ivy encroachment on main stem. Basal area not visible. Historic ground disturbance to west.	No works presently required	40+	B2	RET		9.0
G095	Common Oak	22	900	7	7	7	9.0	12-S	16	M	Fair to good	Elongated wound on south side of main stem from ground level. Desiccated white rot present. Dense ivy encroachment from ground level extending into crown.	No works presently required	40+	A2	RET		10.8
T096	Oak	32	1380	14	14	12	15	10-E	6	M	Good	VETERAN TREE (TV1) Vast specimen 400mm from closeboard garden fence; basal cavity opening between buttress roots to north and west; pockets of decay at historic branch removal wounds on lower stem; large crown previously lightly reduced; occasional larger deadwood branches.	Remove larger deadwood branches only if adjacent to proposed works	40+	A1/2/3	RET		16.6

Havant Thicket Reservoir Project

Appendix A9.14B: Tree Survey Schedule

Tree ID	Species	Height (m)	Stem Diameter (mm)	Branch spread N (m)	Branch spread E (m)	Branch spread S (m)	Branch spread W (m)	First significant branch height (m)	Canopy height (m)	Life Stage	Vitality	General observations	Preliminary management recommendations	Estimated Remaining Contribution (Years)	Category Grading	Remove/Part Remove/Retain	Quantities for removal	RPA Radius (m)
T097	Common Oak	25	1000	7	3	10	8.0	3-E	5	M	Fair to good	Desire line 2m east. Dead ivy on main stem. Large diameter frayed wound to north from past storm damage. Occasional small to moderate diameter dead wood throughout crown. Likely to be a result of a competition for sunlight.	No works presently required	40+	A2	RET		12.0
T098	Ash	25	450 + 290	5	11	9	7	3.5-NW	3	EM-M	Good	High-crowned tree, secondary stem leaning to east; light ivy encroachment	No works required at time of survey	20+	B2	RET		6.5
G099A	Hornbeam	15	270	1	6	4.5	4.5	2-E	3	SM	Fair	Intermittent group of trees. Drawn stems, leans and mutual crown suppression. Ivy encroachment on some stems. Occasional small to moderate diameter dead wood in lower and middle crowns.	No works presently required	10+	C2	RET		3.2
G099B	Hornbeam	15	170	0	3	3	3.0	N/A	3	SM	Fair	Part of G099	No works presently required	10+	C2	RET		2.0
G099C	Hornbeam	15	170	3	3	3	3.0	N/A	3	SM	Fair	Part of G099	No works presently required	10+	C2	RET		2.0
G099D	Hornbeam	15	170	3	3	3	3.0	N/A	3	SM	Fair	Part of G099	No works presently required	10+	C2	RET		2.0
T100	Portuguese Laurel	9	440 + 290	7	7	7	7	1.5-W	1.5	M	Good	Third party tree close behind timber garden fence, forking at 1400mm; crown overhanging woodland area to west, with ad hoc crown lifting above path.	No works required at time of survey	10+	C2	RET		6.4
T101	Common Oak	28	950	6	7	12	10.0	6-SE	6	M	Good	(4) Dead ivy on main stem and in crown. Desire line approximately 4.5m east. Co-dominant stems from approximately 12m, slight compression fork. Evidence of storm damage recorded within crown. Frayed wounds and desiccated white rot visible.	No works presently required	40+	A2	RET		11.4
T102	Common Oak	26	950	7	10	14	8.0	5-E	5	M	Good	Desire line approximately 3m east. Extensive dead ivy on main stem and into crown. Evidence of past storm damage recorded within crown. Decay cavities visible in upper crown.	No works presently required	40+	A2	RET		11.4

Havant Thicket Reservoir Project

Appendix A9.14B: Tree Survey Schedule

Tree ID	Species	Height (m)	Stem Diameter (mm)	Branch spread N (m)	Branch spread E (m)	Branch spread S (m)	Branch spread W (m)	First significant branch height (m)	Canopy height (m)	Life Stage	Vitality	General observations	Preliminary management recommendations	Estimated Remaining Contribution (Years)	Category Grading	Remove/Part Remove/Retain	Quantities for removal	RPA Radius (m)
T103	Common Oak	19	790	7	10	7	7.0	5-E	6	M	Fair	Crown previously reduced in height and lateral spread. Abrupt angles on pruning wounds and good regrowth. Elongated basal wound to north occupying approximately 40% of stem circumference. Desiccated white rot present. Fistulina hepatica . pronounced reaction wood on periphery. Historic wound.	No works presently required	20+	B2	RET		9.5
T104	Common Oak	22	920	6	13	13	6.0	5-SE	5	M	Fair	Evidence of past storm damage within upper crown. Elongated wounds and regrowth present. Desiccated white rot visible at frayed wounds. Dense epicormic growths on main stem.	No works presently required	40+	A2	RET		11.0
T105	Common Oak	26	960	8	9	6	1.0	6-SE	6	M	Good	Basal cavity to north, historic wound. Desiccated white rot present. Cavities in old branch wounds on main stem at various points, suggesting hollow in part. Co-dominant stems at approximately 18m. Former apical stem cut back to this point.	No works presently required	40+	A2	RET		11.5
T106	Common Oak	6	900	0	0	0	0.0	N/A	N/A	OM	Dead	Standing dead stem. Extensive desiccated wood visible. Developing heartwood decay. Habitat holes.	Retain as dead wood habitat.	10+	C3	RET		10.8
T107	Common Oak	26	1280	10	17	17	6.0	4-S	6	Vet	Fair	Crown previously reduced in height and lateral spread. Unoccluded wounds. Regrowth in places. Abrupt angles on retained branches. Evidence of past storm damage. Frayed wounds and elongated cavities. Desiccated white rot present. Developing heartwood decay.	No works presently required	40+	A1/2/3	RET		15.4
T108	Common Oak	32	1020	14	14	11	9.0	20-S	18	M	Fair to good	Dense ivy encroachment on main stem and in crown. Old pruning wound to south on main stem. Unoccluded. Occasional small to moderate diameter dead wood in lower and middle crown.	No works presently required	40+	A1/2	RET		12.2
T109	Ash	19	530;380;380;300;300	12	12	7	6.0	2-SE	3	M	Fair to good	Large multi stem tree. Suggesting past felling close to ground level and regeneration. South stem dead and within falling distance of adjacent path. Daldinia concentrica present. Drawn stems, leans. Dead ivy.	Fell south stem.	20+	B2	RET		10.4

Havant Thicket Reservoir Project

Appendix A9.14B: Tree Survey Schedule

Tree ID	Species	Height (m)	Stem Diameter (mm)	Branch spread N (m)	Branch spread E (m)	Branch spread S (m)	Branch spread W (m)	First significant branch height (m)	Canopy height (m)	Life Stage	Vitality	General observations	Preliminary management recommendations	Estimated Remaining Contribution (Years)	Category Grading	Remove/Part Remove/Retain	Quantities for removal	RPA Radius (m)
T110	Ash	18	580	8	8	8.5	10.0	4.5-SW	5	EM	Good	Compression fork at co-dominant union at 4m on main stem. Crown previously lifted.	No works presently required	10+	C2	RET		7.0
T111	Common Oak	18	1070	9	10	9	10.0	2-S	2.5	M	Fair to good	Cavities in main stem at various points. Revealing developing heartwood decay. Elongated wounds in crown from past storm damage. Desiccated white rot present. Small to moderate diameter dead wood in lower and middle crown.	Consider crown reduction in height and lateral spread given past storm damage	40+	B2	RET		12.8
W112	A Woodland	18 ave.	300 ave.	7	7	7	7	3	2	EM-M	Good	Wooded area, oak and birch predominant; ditch along boundary facing open space to north where reservoir proposed - watery along most of its length - reducing likelihood of tree roots extending beyond this ditch into open space; frequent multi-stemmed hazel near ditch; occasional holly; ash at east end; larger oaks mostly confined to central area, where woodland may be older; prominent trees recorded individually	No works required at time of survey	40+	B2	RET		3.6
W112-A	Ash	20	580	6	6	6	6	4	4	EM	Fair	High crown slightly sparse; frequent sub-75mm diameter deadwood in lower crown; 2m from ditch bank	Remove deadwood if adjacent to proposed works	20+	C2	RET		7.0
W112-B	Oak	15	440	11	4	3	7	5	5	EM	Good	2m from steep ditch bank; crown leans towards open space to north	No works required at time of survey	20+	B2	RET		5.3
W112-C	Beech	17	330	9	5	0	5	2	2	EM	Good	At top of ditch bank, pronounced lean towards open space to north	No works required at time of survey	20+	B2	RET		4.0
W112-D	Oak	15	360	10	2	5	6	2.5-N	3	EM	Good	At top of ditch bank (steep section); crown growth suppressed by larger neighbour to south-east	No works required at time of survey	20+	B2	RET		4.3
W112-E	Oak	16	470	8	6	7	8	2	2	EM-M	Good to fair	Compact form; 1m from ditch bank; frequent small to medium deadwood	Remove larger deadwood if adjacent to proposed works	20+	B2	RET		5.6
W112-F	Oak	20	650	11	11	11	9	2-NW	2	M	Good	3m from ditch bank	No works required at time of survey	40+	A2	RET		7.8
W112-G	Oak	18	770	12	8	12	9	6	6	M	Good to fair	3m from ditch bank (dry section); crown slightly sparse; frequent deadwood branches	Remove larger deadwood only if adjacent to proposed works	40+	A2	RET		9.2

Havant Thicket Reservoir Project

Appendix A9.14B: Tree Survey Schedule

Tree ID	Species	Height (m)	Stem Diameter (mm)	Branch spread N (m)	Branch spread E (m)	Branch spread S (m)	Branch spread W (m)	First significant branch height (m)	Canopy height (m)	Life Stage	Vitality	General observations	Preliminary management recommendations	Estimated Remaining Contribution (Years)	Category Grading	Remove/Part Remove/Retain	Quantities for removal	RPA Radius (m)
W112-H	Oak	21	920	10	10	12	7	5	5	M-OM	Fair	5m from ditch bank (dry section); large historic strip wound 2-14m - possible lightning strike - desiccated xylem wood; similar smaller wound on south-east face, 2-10m; large deadwood branches; no crown retrenchment; high biodiversity and habitat value.	Remove larger deadwood only if adjacent to proposed works	40+	A2/3	RET		11.0
W112-I	Oak	22	810	15	10	15	15	6	5	M	Good	5.5m from ditch bank (dry section); regulation quantity of storm damage, deadwood	Remove larger deadwood only if adjacent to proposed works	40+	A2	RET		9.7
W112-J	Oak	18	710	12	10	5	7	2.5	2	M	Good	2.5m from ditch bank (dry section); crown growth towards open space to north	No works required at time of survey	40+	B2	RET		8.5
W112-K	Oak	17	770	11	6	9	8	2	2	M	Good to fair	2m from ditch bank (dry section); frequent deadwood	Remove larger deadwood only if adjacent to proposed works	40+	B2	RET		9.2
W112-L	Oak	20	690	16	9	10	5	6	5	M	Good	5.5m from ditch bank (dry section); large branch tear at crown break, south side; large limb extending to south-east	No works required at time of survey	40+	A2	RET		8.3
W112-M	Oak	20	610	9	8	9	6	5	5	M	Good	1.5m from ditch bank; occasional branch tears in high crown	No works required at time of survey	40+	B2	RET		7.3
W112-N	Oak	22	90 + 360 + 18	10	9	4	9	2	4	M	Good	Multistem, 3.5m from watery ditch; crown growth predominantly to open spce to north; small diameter deadwood	Remove larger deadwood only if adjacent to proposed works	40+	B2	RET		6.7
W112-O	Oak	20	70 + 270 + 27	9	8	6	7	2.5-NE	4	M	Good	Multistem, 3.5m from watery ditch; crown growth predominantly to open spce to north; small diameter deadwood	Remove larger deadwood only if adjacent to proposed works	40+	B2	RET		7.9
W112-P	Oak	20	330	8	8	4	6	6	6	M	Good	On bank of watery ditch; high crown slightly sparse; moss-covered mound on north side possible remnant of second stump; pronounced buttress roots	No works required at time of survey	20+	B2	RET		4.0
W112-Q	Oak	20	560	9	8	9	6	6	6	M	Good to fair	Frequent deadwood branches	Remove larger deadwood if adjacent to proposed works	40+	B2	RET		6.7
W112-R	Birch	20	00 + 290 + 28	11	4	4	7	3	4	M	Good	Multi-stemmed tree, 3.5m from watery ditch bank	No works required at time of survey	20+	B2	RET		6.1
W112-S	Ash	19	80 + 180 + 18	9	7	2	7	5	5	M	Fair	Multi-stemmed former coppice at top of watery ditch bank; light deadwood in rather sparse crown	No works required at time of survey	20+	C2	RET		4.9
W113	Common Oak	20	500	6	6	6	6.0	N/A	0	SM to EM	Good	Broadleaf woodland. Limited to oak varying from semi mature to early mature trees. Relatively uniform vertical structure. Some standing and fallen dead stems. Limited understorey, rare holly. Open. Density of approx. 6trees per 10m2.	No works presently required	40+	B2	PRG	14,106m ² trees to be removed	6.0

Havant Thicket Reservoir Project

Appendix A9.14B: Tree Survey Schedule

Tree ID	Species	Height (m)	Stem Diameter (mm)	Branch spread N (m)	Branch spread E (m)	Branch spread S (m)	Branch spread W (m)	First significant branch height (m)	Canopy height (m)	Life Stage	Vitality	General observations	Preliminary management recommendations	Estimated Remaining Contribution (Years)	Category Grading	Remove/Part Remove/Retain	Quantities for removal	RPA Radius (m)
W113A	Common Oak	19	650	2	6	7	6.0	4-SW	6	EM	Fair	Part of W113. Small to moderate dead wood in lower and middle crown. Growing on south edge of woodland. Area of saturated ground to south. Crown suppressed to north.	No works presently required	20+	B2	RET		7.8
W113B	Common Oak	19	640	4	4	8	4.0	N/A	6	EM	Fair	Part of W113.	No works presently required	20+	B2	RET		7.7
W113C	Common Oak	19	760	4	4	8	7.0	5-S	6	EM	Fair	Part of W113. Pronounced buttress roots.	No works presently required	20+	B2	RET		9.1
W113D	Common Oak	19	500	1.5	3	8	6.0	N/A	6	EM	Fair	Part of W113.	No works presently required	20+	B2	RET		6.0
W113E	Common Oak	19	550	4	5	9	5.0	8-S	6	EM	Fair	Part of W113.	No works presently required	20+	B2	RET		6.6
W113F	Common Oak	19	500	1	4	7	3.0	N/A	6	EM	Fair	Part of W113.	No works presently required	20+	B2	RET		6.0
W113G	Common Oak	19	380	2	2	4	4.0	N/A	6	EM	Fair	Part of W113.	No works presently required	20+	B2	RET		4.6
G114	Goat willow, silver birch, hawthorn	6	350	5	5	5	5.0	N/A	0	Y to M	Fair to good	Linear informal group growing adjacent to stream. Goat willow dominates. Largely multi stem trees. Collapsed stems in places. No active management recorded.	No works presently required	20+	B2	REM	34,051m ² trees to be removed	4.2
W115	Common Oak	20	500	6	6	6	6.0	N/A	0	SM to EM	Good	Broadleaf woodland. Limited to oak varying from semi mature to early mature trees. Relatively uniform vertical structure. Some standing and fallen dead stems. Limited understorey, rare holly. Open. Density of approx. 6trees per 10m2. Rare hawthorn. Water course through centre.	No works presently required	40+	B2	REM	24,118m ² trees to be removed	6.0
G116	Goat willow, oak, hawthorn, poplar	12	250	3.5	3.5	3.5	3.5	N/A	0	Y to SM	Fair to good	Potential lapsed hedgerow. Boundary feature. Single and multi stems recorded. Growing on raised bank. Saturated ground to west. Drawn stems, leans. Some collapsed. No recent management visible.	No works presently required	10+	C2	RET		3.0

Havant Thicket Reservoir Project

Appendix A9.14B: Tree Survey Schedule

Tree ID	Species	Height (m)	Stem Diameter (mm)	Branch spread N (m)	Branch spread E (m)	Branch spread S (m)	Branch spread W (m)	First significant branch height (m)	Canopy height (m)	Life Stage	Vitality	General observations	Preliminary management recommendations	Estimated Remaining Contribution (Years)	Category Grading	Remove/Part Remove/Retain	Quantities for removal	RPA Radius (m)
W117	Goat willow, hazel and silver birch	18	500	5	5	5	5.0	N/A	0	Y to M	Fair to good	Woodland edge habitat with intermittent standard trees. Goat willow, hazel and silver birch dominant. Pine plantation to west. Existing compacted aggregate hard surface access route to east. Single and multi stems. Natural regeneration. Planted standard trees.	No works presently required	20+	B2	RET		6.0
W117A	Common Oak	18	550	6	6	6	6.0	3-N	4	EM	Good	Part of W117. 4m from existing hard surface access route. High crown height.	No works presently required	20+	B2	RET		6.6
W117B	Common Oak	18	500	6	6	6	6.0	3-E	3	SM	Good	Part of W117. 4.5m from existing hard surface access route. Growing on slight raised bank.	No works presently required	20+	B2	RET		6.0
W117C	Turkey Oak	18	480	6	6	6	6.0	3-E	3	SM	Good	Part of W117. 7m from existing access road. Moderate ivy encroachment on main stem.	No works presently required	20+	B2	RET		5.8
W117D	Turkey Oak	18	350	6	6	6	6.0	3-E	3	SM	Good	Part of W117.	No works presently required	20+	B2	RET		4.2
W118	Oak, Hazel, ash, goat willow, elm, hawthorn	18	400	6	6	6	6.0	N/A	0	Y to EM	Good	Broadleaf woodland. Oak abundant. Eastern edge mainly goat willow, hazel and young self sown ash and oak. Occasional elm and hawthorn. Existing shallow wet ditch between trees and existing access road. Large more mature trees set back from road edge 7-10m.	No works presently required	20+	B2	RET		4.8
W118A	Turkey Oak	18	530	6	6	6	6.0	N/A	3	SM	Good	Part of W118.	No works presently required	20+	B2	RET		6.4
W118B	Common Oak	14	500	7.4	7.4	7.4	7.4	4-E	4	SM	Fair	Edge of W118. Existing compacted aggregate hard surface access route to east and south. Small to moderate diameter dead wood within lower crown.	No works presently required	20+	B2	RET		6.0
G119	Goat willow, blackthorn, ash	7	150	2	2	2	2.0	N/A	0	Y to SM	Fair	Intermittent clumps of trees interspersed with bramble scrub. Lapsed hedgerow.	No works presently required	10+	C2	RET		1.8
G120A	Common Oak	17	550	7	7	7	7.0	4-SE	4	SM TO M	Good	Linear group of predominantly oak. Intermittent pines. Existing wet drainage ditch between trees and existing compacted aggregate hard surface access route. Root barriers to growth toward east. Mutually suppressed crowns. Occasional small to moderate diameter dead wood in lower and middle crowns. Likely to be a result of sunlight shading.	No works presently required	40+	B2	RET		6.6
G120B	Common Oak	17	550	7	7	7	7.0	4-SE	4	SM TO M	Good	Part of G120.	No works presently required	40+	B2	RET		6.6
G120C	Common Oak	17	450;400;200	7	7	7	7.0	4-SE	4	SM TO M	Good	Part of G120.	No works presently required	40+	B2	RET		7.6

Havant Thicket Reservoir Project

Appendix A9.14B: Tree Survey Schedule

Tree ID	Species	Height (m)	Stem Diameter (mm)	Branch spread N (m)	Branch spread E (m)	Branch spread S (m)	Branch spread W (m)	First significant branch height (m)	Canopy height (m)	Life Stage	Vitality	General observations	Preliminary management recommendations	Estimated Remaining Contribution (Years)	Category Grading	Remove/Part Remove/Retain	Quantities for removal	RPA Radius (m)
G120D	Common Oak	17	500	7	7	7	7.0	4-SE	4	SM TO M	Good	Part of G120.	No works presently required	40+	B2	RET		6.0
G120E	Pine	17	890	8	8	8	8.0	4-SE	4	SM TO M	Good	Part of G120.	No works presently required	40+	B2	RET		10.7
G120F	Common Oak	17	450	7	7	7	7.0	4-SE	4	SM TO M	Good	Part of G120.	No works presently required	40+	B2	RET		5.4
G120G	Common Oak	17	500	7	7	7	7.0	4-SE	4	SM TO M	Good	Part of G120. Set higher ground. Approximately 1.6m drop to ditch	No works presently required	40+	B2	RET		6.0
G120H	Monterey Pine	17	800	7	7	7	7.0	4-SE	4	SM TO M	Good	Part of G120.	No works presently required	40+	B2	RET		9.6
G120I	Monterey Pine	17	850	7	7	7	7.0	4-SE	4	SM TO M	Good	Part of G120. Basal wound to north east.	No works presently required	40+	B2	RET		10.2
G120J	Monterey Pine	17	750	8.5	8.5	8.5	8.5	4-SE	4	SM TO M	Good	Part of G120. Hanging broken branch to south east	Remove hanging broken branch	40+	B2	RET		9.0
G121	Ash, oak, goat willow, silver birch	10	400	6	6	6	6.0	N/A	0	Y to EM	Fair to good	Intermittent trees. Single and multi stems recorded. Goat willow predominantly multi stems. Small to moderate diameter dead wood present. Ivy encroachment on some stems. Existing compacted aggregate hard surface access route to west. Some collapsed branches.	No works presently required	20+	B2	RET		4.8
G121A	Common Oak	8	400	5	6	5	1.0	1-E	0.5	SM	Fair	Elongated wound on west side of main stem revealing column of internal decay and desiccated white rot. Loss of vitality in upper crown. Small to moderate diameter dead wood present. Existing compacted aggregate hard surface access route to west.	No works presently required	10+	C2	RET		4.8
G121B	Common Oak	9	450	7	7	7	1.0	1.8-E		SM	Fair	Basal stem established to west. Moderate ivy encroachment on main stem and into crown. Existing compacted aggregate access route to west. Slight loss of vitality in middle crown.	No works presently required	20+	B2	RET		5.4

Havant Thicket Reservoir Project

Appendix A9.14B: Tree Survey Schedule

Tree ID	Species	Height (m)	Stem Diameter (mm)	Branch spread N (m)	Branch spread E (m)	Branch spread S (m)	Branch spread W (m)	First significant branch height (m)	Canopy height (m)	Life Stage	Vitality	General observations	Preliminary management recommendations	Estimated Remaining Contribution (Years)	Category Grading	Remove/Part Remove/Retain	Quantities for removal	RPA Radius (m)
G121C	Goat Willow	11	400;400;300;300;250	8	8	8	7.0	5-E	3	OM	Fair	Large multi stem tree. Storm damage recorded in crown. Broken and hanging branches. Dieback in upper crown on some branches. Elongated horizontal splits.	Pollard at approximately 5m.	10+	C2	RET		9.0
W122	Oak, ash, Lombardy poplar, goat willow, holly, hazel.	19	700	8	8	8	8.0	N/A	0	Y to M	Fair to good	Broadleaf woodland. Oak standards abundant, ash occasional, including multi stem stems indicative of past felling and regeneration, frequent hazel. Existing ditch between trees and existing access road. Root barriers to growth.	No works presently required	40+	B2	RET		8.4
W122A	Common Oak	19	800	7	7	7	7.0	4-E	4	M	Good	Existing wet ditch to east. Root barrier to growth.	No works presently required	40+	B2	RET		9.6
W122B	Lime	19	640	7.5	7.5	7.5	7.5	5-E	4	EM	Good	Growing approximately 1.6m higher than base of adjacent ditch.	No works presently required	40+	B2	RET		7.7
W122C	Common Oak	19	800	8	8	8	8.0	6-E	6	M	Good	Growing adjacent to dry ditch. Existing compacted aggregate hard surface access route 2.5m east. Moderate ivy encroachment on main stem and into crown. Hanging broken branch in crown to south west.	No works presently required	40+	A2	RET		9.6
W122D	Common Oak	18	800	8.5	8.5	8.5	8.5	4-NE	4	M	Fair to good	Existing shallow wet ditch and hard surface access route to east between tree and site. Hung-up broken branches in crown from previous storm damage. Light ivy encroachment on main stem.	No works presently required	40+	A2	RET		9.6
W122E	Common Oak	18	400	5	5	5	5.0	3-N	3.5	SM	Fair	Growing within currently wet drainage ditch. Existing hard surface access route 1.5m east. Dead ivy on main stem.	No works presently required	20+	B2	RET		4.8
T123	Common Oak	19	1000	6	9	9	9.0	4-W	4	M	Good	Prominent tree given size. Crown break at approximately 2.5m into three stems. Unions appear sound. Historic wound on south stem, reaction wood on periphery. Desiccated white rot present. Occasional large diameter dead wood in lower crown footpath directly west.	Remove or reduce large diameter dead wood overhanging footpath	40+	A2	RET		12.0
T124	Common Oak	17	690	7	8	7.5	2.0	3-E	2	M	Fair	Dense ivy encroachment on main stem and into crown. Low crown height to east. Crown suppressed to west. Main stem growing on curve to east.	Sever ivy.	20+	B2	RET		8.3
G125	Field maple, elm, hawthorn, oak, goat willow	18	350	3.5	3.5	3.5	3.5	N/A	0	Y to SM	Fair to good	Linear group along boundary. Areas of successional growth into site and some planting. Dead elm in places.	No works presently required	20+	B2	PRG	186m ² trees to be removed	4.2

Havant Thicket Reservoir Project

Appendix A9.14B: Tree Survey Schedule

Tree ID	Species	Height (m)	Stem Diameter (mm)	Branch spread N (m)	Branch spread E (m)	Branch spread S (m)	Branch spread W (m)	First significant branch height (m)	Canopy height (m)	Life Stage	Vitality	General observations	Preliminary management recommendations	Estimated Remaining Contribution (Years)	Category Grading	Remove/Part Remove/Retain	Quantities for removal	RPA Radius (m)
W126	Red oak, common oak, hazel, hawthorn, field maple	16	350	5.5	5.5	5.5	5.5	N/A	0	SM to EM	Good	Planted woodland blocks. Red oak abundant; common oak and ash occasional. Multi stem hazel understorey.	No works presently required	40+	B2	RET		4.2
W127-A	Oak	24	720	10	8	11	11	4	4	M	Good	On earth mound to north of junction of Avenue and secondary path; infrequent 150mm diameter deadwood branches in large crown	Remove larger deadwood if adjacent to proposed works	40+	A2	RET		8.6
W127-B	Oak	20	610	9	4	8	10	6	6	M	Fair to poor	At south end of Avenue, on north side of path; storm damage includes branch tear to south at crown break; light dieback and frequent deadwood branches; mutual crown suppression; mallet sounding and shedding of bark from buttress roots indicative of basal decay	Remove larger deadwood only if adjacent to proposed works	20+	C2	RET		7.3
W127-C	Oak	19	630	12	11	6	6	4-NE	7	M	Good	At south end of Avenue, on north side of path; crown growth suppression by neighbour to south-west; mallet sounding and shedding of bark from buttress roots indicative of basal decay	No works required at time of survey	40+	B2	RET		7.6
W127-D	Oak	20	780	10	10	10	10	2.5-S	2.5	M	Good	Tagged 0048	No works required at time of survey	40+	A2	RET		9.4
W127-E	Oak	20	620	7.5	7.5	7.5	7.5	2.5	2.5	M	Good	(void)	No works required at time of survey	40+	B2	RET		7.4
W127-F	Oak	19	670	9	9	9	9	4-S	4	M	Fair	Occasional large deadwood	Remove larger deadwood if adjacent to proposed works	40+	B2	RET		8.0
W127-G	Yew	16	760	8	8	8	8	2	1	M	Good	3m from Avenue; beneath oaks; some lower branch removal; no dieback observed	No works required at time of survey	40+	B2	RET		9.1
W127-H	Oak	24	760	13	13	13	13	8	8	M	Fair	Occasional large diameter deadwood in large high crown; dieback at crown extents; part-fallen tree propped against stem on north side	Remove larger deadwood if adjacent to proposed works; also remove propped tree	40+	B2	RET		9.1
W127-I	Oak	22	710	9	9	9	9	5	5	M	Good to fair	Straggling crown has occasional large diameter deadwood	Remove larger deadwood if adjacent to proposed works	40+	B2	RET		8.5
W127-J	Beech	20	720	10	10	10	10	1.5	1	M	Good	Occasional storm damage; vertical slit decay cavity low to west	No works required at time of survey	40+	B2	RET		8.6
W127-K	Oak	25	810	12	12	12	12	5	4	M	Fair	Mutual crown suppression; long limb to south-west; branch tears, large diameter deadwood branches	No works required at time of survey	40+	B2	RET		9.7
W127-L	Oak	24	870	15	15	15	15	4	3	M	Good	Locally dominant, regulation quantities of storm damage, deadwood; minor dieback only	Remove larger deadwood only if adjacent to proposed works	40+	A2	RET		10.4
W127-M	Beech	24	690	11	11	11	11	4	3	M	Good	Occasional storm damage - branch tears and associated decay in upper crown	No works required at time of survey	40+	B2	RET		8.3

Havant Thicket Reservoir Project

Appendix A9.14B: Tree Survey Schedule

Tree ID	Species	Height (m)	Stem Diameter (mm)	Branch spread N (m)	Branch spread E (m)	Branch spread S (m)	Branch spread W (m)	First significant branch height (m)	Canopy height (m)	Life Stage	Vitality	General observations	Preliminary management recommendations	Estimated Remaining Contribution (Years)	Category Grading	Remove/Part Remove/Retain	Quantities for removal	RPA Radius (m)
W127-N	Oak	24	780	12	12	12	12	6	6	M	Fair	Light crown dieback	No works required at time of survey	40+	B2	RET		9.4
W127-O	Oak	22	30 + 570 + 41	15	15	15	15	4	4	M	Fair	3no stems growing close to each other; smaller stems	Remove larger deadwood only if adjacent to proposed works	40+	B2	RET		11.4
W127P	Common Oak	19	720	7	7	7	7.0	N/A	0	SM to M	Good	Part of W128.	No works presently required	40+	A2	RET		8.6
W127Q	Common Oak	19	840	8	8	8	8.0	N/A	0	SM to M	Good	Part of W128.	No works presently required	40+	A2	RET		10.1
W127R	Common Oak	19	710	8	8	8	8.0	N/A	0	SM to M	Good	Part of W128.	No works presently required	20+	B2	RET		8.5
W127S	Common Oak	19	1000	8	8	8	8.0	2-SW	2	M	Good	Tag 0049. Pronounced buttress roots. Evidence of storm damage recorded within crown. Frayed wounds to north east.	No works presently required	40+	A2	RET		12.0
W127T	Beech	19	720	7	7	7	7.0	1-SE	4	M	Good	Co-dominant stems from approximately 4m. Compression fork, however, natural bracing above.	No works presently required	20+	B2	RET		8.6
W127U	Common Oak	19	680	5	5	5	5.0	2.5-NW	10	M	Fair	Tag 1612. Dieback and large diameter dead wood in crown. Desiccated white rot present.	No works presently required	40+	A2	RET		8.2
W127V	Common Oak	19	930	14	12	8	12.0	6-E	6	M	Fair	Tag 0051. Evidence of storm damage recorded within upper crown. Large diameter branches failed and hung-up. Moderate ivy encroachment on main stem and into crown. Moderate diameter dead wood in lower and middle crown.	No works presently required	40+	A2	RET		11.2
W127W	Common Oak	19	520	8	8	8	8.0	9-W	12	M	Fair	Tag 0052. Co-dominant stems from approximately 6m. Union appears sound. Small to moderate diameter dead wood in upper crown.	No works presently required	20+	B2	RET		6.2
W127X	Common Oak	19	750	7	4	7	8.0	5-W	4	M	Fair to good	Moderate ivy encroachment on main stem. Co-dominant stems from approximately 4m.	No works presently required	40+	A2	REM		9.0
W127Y	Common Oak	19	1000	9	9	9	9.0	N/A		M	Fair	Storm damage. Unoccluded wounds. Desiccated white rot. Small to moderate diameter dead wood in lower and middle crown	No works presently required	40+	A2	REM		12.0
W128	Oak, Sweet Chestnut, Birch, holly	19	500	7	7	7	7.0	N/A	0	SM to M	Good	Broadleaf dominated woodland. Oak abundant as standards. Occasional sweet chestnut and birch. understorey of occasional holly and yew.	No works presently required	40+	A2	PRG	79,928m ² trees to be removed	6.0
W128A	Common Oak	19	550	7	7	7	7.0	N/A	0	SM to M	Good	Part of W128.	No works presently required	20+	B2	RET		6.6
W128B	Common Oak	19	400	6	6	6	6.0	N/A	0	SM to M	Good	Part of W128.	No works presently required	20+	B2	RET		4.8

Appendix A9.14B: Tree Survey Schedule

Tree ID	Species	Height (m)	Stem Diameter (mm)	Branch spread N (m)	Branch spread E (m)	Branch spread S (m)	Branch spread W (m)	First significant branch height (m)	Canopy height (m)	Life Stage	Vitality	General observations	Preliminary management recommendations	Estimated Remaining Contribution (Years)	Category Grading	Remove/Part Remove/Retain	Quantities for removal	RPA Radius (m)
W128C	Common Oak	19	640	8	8	8	8.0	N/A	0	SM to M	Good	Part of W128. Sweet chestnut to south, elongated basal wound.	No works presently required	20+	B2	RET		7.7
W128D	Common Oak	19	540	7	7	7	7.0	N/A	0	SM to M	Good	Part of W128.	No works presently required	20+	B2	RET		6.5
W128E	Common Oak	19	640	8	8	8	8.0	N/A	0	SM to M	Good	Part of W128.	No works presently required	20+	B2	RET		7.7
W128F	Common Oak	19	350	7	7	7	7.0	N/A	0	SM to M	Good	Part of W128.	No works presently required	20+	B2	RET		4.2
W128G	Common Oak	19	550	7.5	7.5	7.5	7.5	N/A	0	SM to M	Good	Part of W128.	No works presently required	20+	B2	RET		6.6
W128H	Common Oak	19	580	7.5	7.5	7.5	7.5	N/A	0	SM to M	Good	Part of W128.	No works presently required	20+	B2	RET		7.0
W128I	Common Oak	19	540	6	6	6	6.0	N/A	0	SM to M	Good	Part of W128.	No works presently required	20+	B2	RET		6.5
W128J	Common Oak	19	550	6	6	6	6.0	N/A	0	SM to M	Good	Part of W128.	No works presently required	20+	B2	RET		6.6
W128K	Common Oak	19	700	8	8	8	8.0	N/A	0	SM to M	Good	Part of W128.	No works presently required	20+	B2	RET		8.4
W128L	Common Oak	19	540	7	7	7	7.0	N/A	0	SM to M	Good	Part of W128.	No works presently required	20+	B2	RET		6.5
W128M	Common Oak	19	600	6	6	6	6.0	N/A	0	SM to M	Good	Part of W128.	No works presently required	20+	B2	RET		7.2
W128N	Common Oak	19	600	6	6	6	6.0	N/A	0	SM to M	Good	Part of W128.	No works presently required	20+	B2	RET		7.2

Appendix A9.14B: Tree Survey Schedule

Tree ID	Species	Height (m)	Stem Diameter (mm)	Branch spread N (m)	Branch spread E (m)	Branch spread S (m)	Branch spread W (m)	First significant branch height (m)	Canopy height (m)	Life Stage	Vitality	General observations	Preliminary management recommendations	Estimated Remaining Contribution (Years)	Category Grading	Remove/Part Remove/Retain	Quantities for removal	RPA Radius (m)
W128O	Common Oak	19	650	9	9	9	9.0	N/A	0	SM to M	Good	Part of W128.	No works presently required	20+	B2	RET		7.8
W128P	Common Oak	19	650	9	9	9	9.0	N/A	0	SM to M	Good	Part of W128.	No works presently required	20+	B2	RET		7.8
W128Q	Common Oak	19	600	7	7	7	7.0	N/A	0	SM to M	Good	Part of W128.	No works presently required	20+	B2	RET		7.2
W128R	Common Oak	19	800	10	10	10	10.0	N/A	0	SM to M	Good	Part of W128.	No works presently required	20+	B2	RET		9.6
W128S	Common Oak	19	800	8	8	8	8.0	N/A	0	SM to M	Good	Part of W128.	No works presently required	20+	B2	RET		9.6
W128T	Common Oak	19	760	8	8	8	8.0	N/A	0	SM to M	Good	Part of W128.	No works presently required	20+	B2	RET		9.1
W128U	Common Oak	19	680	8	8	8	8.0	N/A	0	SM to M	Good	Part of W128.	No works presently required	20+	B2	RET		8.2
W128V	Common Oak	19	550	8	8	8	8.0	N/A	0	SM to M	Good	Part of W128.	No works presently required	20+	B2	RET		6.6
W128W	Common Oak	19	540	8	8	8	8.0	N/A	0	SM to M	Good	Part of W128.	No works presently required	20+	B2	RET		6.5
W128X	Common Oak	19	550	7	7	7	7.0	N/A	0	SM to M	Good	Part of W128.	No works presently required	20+	B2	RET		6.6
W128Y	Common Oak	19	600	8	8	8	8.0	N/A	0	SM to M	Good	Part of W128.	No works presently required	20+	B2	RET		7.2
W128Z	Common Oak	19	360;300	7	7	7	7.0	N/A	0	SM to M	Good	Part of W128.	No works presently required	20+	B2	RET		5.6
G129	Poplar, oak and goat willow	17	350	6	6	6	6.0	N/A	3	SM	Fair	Intermittent line of trees growing approximately 1m back from woodland fence line. Poplar, oak and goat willow. Drawn stems. Leans. Allow 3m offset from fence line for root zones.	No works presently required	10+	C2	RET		4.2
G129A	Poplar	17	200;200;200	6	6	6	6.0	N/A	3	SM	Fair	Part of G129.	No works presently required	10+	C2	RET		4.2
G129B	Poplar	17	200;200;200	6	6	6	6.0	N/A	3	SM	Fair	Part of G129.	No works presently required	10+	C2	RET		4.2
G129C	Poplar	17	200;200;200	6	6	6	6.0	N/A	3	SM	Fair	Part of G129.	No works presently required	10+	C2	RET		4.2

Havant Thicket Reservoir Project

Appendix A9.14B: Tree Survey Schedule

Tree ID	Species	Height (m)	Stem Diameter (mm)	Branch spread N (m)	Branch spread E (m)	Branch spread S (m)	Branch spread W (m)	First significant branch height (m)	Canopy height (m)	Life Stage	Vitality	General observations	Preliminary management recommendations	Estimated Remaining Contribution (Years)	Category Grading	Remove/Part Remove/Retain	Quantities for removal	RPA Radius (m)
G129D	Poplar	17	200;200;200	6	6	6	6.0	N/A	3	SM	Fair	Part of G129.	No works presently required	10+	C2	RET		4.2
G129E	Oak	16	200;200;100;100	6	6	6	6.0	N/A	3	SM	Fair	Part of G129.	No works presently required	20+	B2	RET		4.2
G129F	Birch	16	200;200;200	6	6	6	6.0	N/A	3	SM	Fair	Part of G129.	No works presently required	10+	C2	RET		4.2
G129G	Oak	15	200;200;200	6	6	6	6.0	N/A	3	SM	Fair	Part of G129.	No works presently required	20+	B2	RET		4.2
G129H	Oak	15	500	7	7	2	7.0	6-NW	4	SM	Fair	Crown suppressed to south. Hanging broken branch to north separate from woodland by existing track. Moderate ivy encroachment on main stem.	Remove hanging broken branch	20+	B2	RET		6.0
G129I	Oak	16	450	7	7	4	7.0	4-N	4	SM	Fair	Ground compaction around tree. Small to moderate diameter dead wood in middle and lower crown.	No works presently required	20+	B2	RET		5.4
T130	Yew	7	250;380	4	4	4	4.0	1.5-N	0.5	EM	Fair	Growing on top of historic ditch. Co-dominant stems from approximately 500mm. Small to moderate diameter dead wood in lower and middle crown. Crown suppression.	No works presently required	20+	B2	REM		5.5
T131	Yew	6	340;340;400	5	5	5	5.0	1.5-N	0.5	EM	Fair	Growing on bank face of historic ditch. Three stems from ground level. Small to moderate diameter dead wood in lower and middle crown.	No works presently required	20+	B2	RET		7.5
T132	Yew	16	820	6	6	6	6.0	1.5-NE	0.5	M	Good	Main stem trifurcates at approximately 1.8m. Unions appear sound. Small to moderate diameter dead wood in lower crown.	No works presently required	40+	A2	RET		9.8
T133	Yew	15	600	6	6	6	6.0	N/A		M	Fair	Growing on top of historic ditch. Small to moderate diameter dead wood in lower crown.	No works presently required	40+	A2	RET		7.2
T134	Common Oak	17	280;370;150	8	2	2.5	8.0	1-N	4	EM	Fair	Three stems from approximately 200-400mm. Crown suppression to east and south. Stems growing on sweeping curve to north west.	No works presently required	20+	B2	RET		5.9
T135	Silver Birch	19	540	5	5	5	5.0	7-W	7	M	Good	Tall drawn specimen. Crown formed at height. Pronounced buttress roots.	No works presently required	20+	B2	REM		6.5
T136	Common Oak	19	460;460	5	5	6	6.0	9-N	8	EM	Good	Two stems from ground level. Potential for two separate trees. Drawn stems. Crowns formed at height. Light ivy encroachment on east stem.	No works presently required	20+	B2	RET		7.8
T137	Yew	6	450	4	4	4	4.0	N/A	0.5	EM	Dead	No live growth present at time of survey. Good saprophytic habitat value	No works presently required	20+	C3	REM		5.4
T138	Common Oak	14	370	6	4.5	6	6.0	1.8-S	2	SM	Good	Growing approximately 2m from existing hard surface ride. Occasional small diameter dead wood in lower crown.	No works presently required	20+	B1	RET		4.4
T139	Yew	8	600	5	5	5	5.0	1.8-N	1	M	Fair	Slight loss of vitality. Snapped and hanging branches. Small to moderate diameter dead wood.	No works presently required	20+	B2	RET		7.2
T140	Yew	12	550;550	6	6	6	6.0	2-N	1.5	M	Fair	Loss of vitality throughout crown. Small to large diameter dead wood present.	No works presently required	20+	B3	RET		9.3

Havant Thicket Reservoir Project

Appendix A9.14B: Tree Survey Schedule

Tree ID	Species	Height (m)	Stem Diameter (mm)	Branch spread N (m)	Branch spread E (m)	Branch spread S (m)	Branch spread W (m)	First significant branch height (m)	Canopy height (m)	Life Stage	Vitality	General observations	Preliminary management recommendations	Estimated Remaining Contribution (Years)	Category Grading	Remove/Part Remove/Retain	Quantities for removal	RPA Radius (m)
W141	A Woodland	6	150	3	3	3	3.0	N/A	0	Y to EM	Fair to good	Silver birch regeneration abundant. Occasional holly. Occasional Yew, Turkey Oak. Wet ditch in places. Trees set up on banks further to south. Goat willow self sown vegetation in places.	No works presently required	20+	B2	RET		1.8
T142	Yew	8	380;400	4	4	4	4.0	2-NW	1.5	M	Fair	Loss of vitality. Live growth mainly epicormic in habit, some chlorotic needles. Co-dominant stems from approximately 300mm. Natural bracing above union.	No works presently required	20+	C3	RET		6.6
T143	Yew	9	740	4	3	4	4.0	4-N	1	M	Good	Multi stems from approximately 1m. Occasional small diameter dead wood in lower crown.	No works presently required	20+	B2	RET		8.9
G144A	Silver Birch	17	440	5	5	5	5.0	2.5-N	2	SM to M	Fair to good	Extensive basal decay to west. Hollowing main stem. Increased risk of structural failure.	Monolith at approximately 5m	<10	U	RET		5.3
G144B	Common Oak	17	400	5	5	5	5.0	N/A	2	SM to M	Fair to good	Part of G144.	No works presently required	20+	B2	RET		4.8
G144C	Silver Birch	17	430	4	4	4	4.0	N/A	2	SM to M	Fair to good	Part of G144.	No works presently required	20+	B2	RET		5.2
G144D	Silver Birch	17	400	4.5	4.5	4.5	4.5	N/A	2	SM to M	Fair to good	Part of G144.	No works presently required	20+	B2	RET		4.8
T145	Common Oak	16	630	8.5	8.5	8.5	8.5	2-W	4	M	Good	Occasional large diameter dead wood in lower crown. Light ivy encroachment on main stem.	No works presently required	20+	B2	RET		7.6
T146	Common Oak	16	630	10	10	10	10.0	2-W	4	M	Good	Growing on top of historic earth mound. Large crown spread. Set approximately 1.5m above level of adjacent verge.	No works presently required	40+	A2	RET		7.6
W147	A Woodland	20	1000	8	8	8	8.0	N/A	0	Y to OM	Fair to good	Silver birch abundant, including mature trees. Occasional oak, yew, hazel. Some multi stem Hazel . Rare ash and sweet chestnut. Some collapsed stems. Young birch regeneration.	No works presently required	40+	B2	PRG	2,405m ² trees to be removed	12.0
G148A	Turkey Oak	18	500	7	7	7	7.0	N/A	8	EM	Good	Growing adjacent to highway verge on raised earth bank. Mutually suppressed crowns. Evidence of past branch failures. Frayed wounds remaining. High crown heights.	No works presently required	20+	B2	REM		6.0
G148B	Turkey Oak	18	500	7	7	7	7.0	N/A	8	EM	Good	Growing adjacent to highway verge on raised earth bank. Mutually suppressed crowns. Evidence of past branch failures. Frayed wounds remaining. High crown heights.	No works presently required	20+	B2	REM		6.0
G148C	Turkey Oak	18	500	7	7	7	7.0	N/A	8	EM	Good	Growing adjacent to highway verge on raised earth bank. Mutually suppressed crowns. Evidence of past branch failures. Frayed wounds remaining. High crown heights.	No works presently required	20+	B2	REM		6.0

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Appendix A9.14B: Tree Survey Schedule

Tree ID	Species	Height (m)	Stem Diameter (mm)	Branch spread N (m)	Branch spread E (m)	Branch spread S (m)	Branch spread W (m)	First significant branch height (m)	Canopy height (m)	Life Stage	Vitality	General observations	Preliminary management recommendations	Estimated Remaining Contribution (Years)	Category Grading	Remove/Part Remove/Retain	Quantities for removal	RPA Radius (m)
G148D	Turkey Oak	18	500	7	7	7	7.0	N/A	8	EM	Good	Growing adjacent to highway verge on raised earth bank. Mutually suppressed crowns. Evidence of past branch failures. Frayed wounds remaining. High crown heights.	No works presently required	20+	B2	REM		6.0
G149	Hawthorn, ash, goat willow, common oak	16	600	6	6	6	6.0	N/A	0	Y to M	Fair to good	Linear group of trees and shrubs. Lapsed hedgerow. Dry deep ditch at centre. Single and multi stems recorded. Suggesting past felling and regeneration.	No works presently required	20+	C2	PRG	603m ² trees to be removed	7.2
G150A	Turkey Oak	17	620	5	7	5	5.0	4-E	5	M	Fair	Loss of vitality. Stunted growth. Tree growing within highway verge. Small to large diameter dead wood within lower and middle crown.	Remove dead wood.	10+	C2	REM		7.4
G150B	Common Oak	17	400;500	5	5	5	5.0	8-E	7	M	Good	Growing within highway verge. Deep dry ditch to west. Co-dominant stems from approximately 1m. Union appears sound. Stems fused above union. Moderate ivy encroachment on main stem and into crown.	No works presently required	40+	B1	REM		7.7
G150C	Common Oak	16	500	6	6	6	6.0	2.5-N	5	M	Good	Pronounced basal swelling. Deep dry ditch to west. Decay entry points at old branch failures on main stem.	No works presently required	40+	B1	REM		6.0
G150D	Turkey Oak	16	600	6.5	6.5	6.5	6.5	4-SE	4	M	Good	Deep dry ditch to west. Moderate ivy encroachment on main stem.	No works presently required	20+	B2	REM		7.2
G151	Common oak, ash, hazel, hawthorn	18	500	6	6	6	6.0	N/A	0	Y to M	Good	Linear group of trees and shrubs. Screen function. Mutually suppressed crowns.	No works presently required	20+	B2	RET		6.0
T152	Common Oak	19	1100	10	10	10	10.0	4-S	3	M	Fair to good	Potential old pollard. Multi stems from approximately 4m. Veteran habitat features. Frayed desiccated white rot branch wounds. Developing heartwood decay visible at large diameter wounds. Dense ivy encroachment on main stem.	No works presently required	40+	A3	RET		13.2
T154	Common Oak	20	1250	11	11	11	11.0	3-NE	3	Vet	Good	Veteran tree. Basal cavity to east revealing hollowing main stem and decayed heartwood. Remnants of wood decay fungal bracket around cavity. Potential Ganoderma or fistulina. Pronounced buttress roots. Occasional small to moderate diameter dead wood in lower middle crown. Saprophytic wood decay fungi visible. Existing pathway to north.	PiCUS sonic tomograph to determine extent of internal decay and inform any management	40+	A3	RET		15.0

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Appendix A9.14B: Tree Survey Schedule

Tree ID	Species	Height (m)	Stem Diameter (mm)	Branch spread N (m)	Branch spread E (m)	Branch spread S (m)	Branch spread W (m)	First significant branch height (m)	Canopy height (m)	Life Stage	Vitality	General observations	Preliminary management recommendations	Estimated Remaining Contribution (Years)	Category Grading	Remove/Part Remove/Retain	Quantities for removal	RPA Radius (m)
T155	Common Oak	15	700	6	8	3	6.0	3-N	3	M	Fair	Growing within grass verge. Loss of vitality evident in east crown extents. Aligning with wood decay fungi present at base to east. Potential Ganoderma. Not clearly identifiable as its decayed.	PiCUS sonic tomograph to determine extent of internal decay and inform any management	10+	C3	RET		8.4
G156	Common Oak	17	900	8	8	8	8.0	N/A	3	M	Good	Prominent line of oak trees. Growing within grass verge, average offset from Highclere Avenue being approximately 3m. Existing kerning and hard surface parking bays providing root barrier to growth.	No works presently required	40+	A2	RET		10.8
T157	Common Oak	11	1300	6	6	6	6.0	4-N	3.5	Vet	Fair	Veteran. Crown extensively reduced. Dense epicormic growths regenerated. Tree works undertaken given basal decay and wood decay fungi Ganoderma spp. present. Extensive heartwood decay. Potential former pollard given crown break at 3m into multi stems.	No works presently required	40+	A3	RET		15.6
G158	Hybrid black poplar, alder and goat willow	20	450	6	6	6	6.0	N/A	0	SM to M	Good	Informal group. Individual trees not plotted. Dense ivy encroachment on stems. Bases not accessible.	No works presently required	20+	B2	RET		5.4
T159	Common Oak	16	800	10	4	8	10.0	3-N	1.5	M	Good	Part of line of oaks. Desiccated white rot visible at historic wounds on main stem. Pronounced reaction wood on periphery of wounds. Occasional small diameter dead wood in lower crown.	No works presently required	40+	A2	RET		9.6
T160	Common Oak	18	1300	12	12	12	12.0	4-N	2	Vet	Good	Veteran tree. Large stem circumference. Prominent tree in group given size. Extensive hard surfacing within root zone. Potential for some root barrier to growth. Dead ivy on main stem. Dense epicormic growths.	No works presently required	40+	A3	RET		15.6
G161	Common Oak	17	800	7	7	7	7.0	2	2.5	M-OM	Good	Pair of open-grown specimens in mown grass area; historic crown lifting.	No works presently required	40+	A2	RET		9.4
G162	A group	8 ave.	250	4.5	4.5	4.5	4.5	0.5	0	EM	Good	Naturalistic informal group at rear of houses providing valuable screening for residents; species include goat willow, hawthorn, field maple, elm; mown grass on east side; little or no management	No works presently required	20+	B2	RET		3.0
G163	Hybrid black poplar	14	350	4.5	4.5	4.5	4.5	2	1.5	EM	Good	2no upright poplar specimens, with shrubby goat willow adjacent	No works presently required	20+	B2	RET		4.2

Havant Thicket Reservoir Project

Appendix A9.14B: Tree Survey Schedule

Tree ID	Species	Height (m)	Stem Diameter (mm)	Branch spread N (m)	Branch spread E (m)	Branch spread S (m)	Branch spread W (m)	First significant branch height (m)	Canopy height (m)	Life Stage	Vitality	General observations	Preliminary management recommendations	Estimated Remaining Contribution (Years)	Category Grading	Remove/Part Remove/Retain	Quantities for removal	RPA Radius (m)
T164	Common Oak	17	740	8	8	8	8.0	2.5	2	M	Good	Open-grown specimen in mown grass area; historic crown lifting	No works presently required	40+	A2	RET		8.9
T165	Common Oak	17	1000	11	11	11	11.0	3	3	M	Good	Open-grown specimen in mown grass area; historic crown lifting	No works presently required	40+	A2	RET		12.0
G166	A group	6 ave.	150	4	4	4	4.0	0	0	EM	Good to fair	Unmanaged riverside shrub vegetation, hawthorn and elm	No works presently required	10+	C2	RET		1.8
G167-A	Common Oak	18	680	7.5	7.5	7.5	7.5	4	3	M	Good	3no oak trees growing in grassed area along fence line to east of path; western tree upright, eastern tree more compact; central tree has veteran characteristics, extensive crown dieback	No works presently required	40+	B2	REM		8.2
G167-B	Common Oak	16	740	7	7	7	7	4	3	OM	Fair	See G167-A	No works presently required	40+	B3	RET		8.9
G167-C	Common Oak	13	540	6	6	6	6	1.5	1.5	M	Good	See G167-A	No works presently required	40+	B2	RET		6.5
G168-A	Common Oak	15	700	6.5	6.5	6.5	6.5	2	1.5	M	Good	Pair in mown grass, 6m apart; mutual crown suppression	No works presently required	40+	B2	RET		8.4
G168-B	Common Oak	18	900	7.5	7.5	7.5	7.5	2	1.5	M	Good	See G168-A	No works presently required	40+	B2	RET		10.8
G169	White willow	to 20	800	10	10	10	10.0	1.5	0.5	M	Good	Large trees to east of stream; no apparent size management; occasional branch or larger limb failures likely	Size and deadwood management likely to be required if adjacent to proposed works	20+	B2	RET		9.6
G170	A group	8 ave.	280	4	4	4	4.0	0	0	EM	Good	Unmanaged, dense shrub vegetation on both sides of stream; includes larger specimens of white and crack willow, hybrid black poplar, among lower-growing hawthorn, goat willow, etc.; high biodiversity and habitat value	Management of deadwood and occasional branch / limb failures likely to be required if adjacent to proposed works	20+	B2	PRG	78m ² trees to be removed	3.4
G171	A group	8 ave.	250	4.5	4.5	4.5	4.5	0.5	0	EM	Good	Naturalistic informal groups at rear of houses providing valuable screening for residents; principal species goat willow; also, hawthorn, field maple, elm, bramble; mown grass on north/east sides; little or no management	No works presently required	20+	B2	RET		3.0
T172	Common Oak	20	1200	11	11	11	11	2	2	M	Good	Open-grown tree, locally dominant	No works presently required	40+	A2	RET		14.4
T173	Common Oak	19	1000	10	10	10	10	2	2	M	Good	Open-grown tree in mown grass area, close to path, locally dominant	No works presently required	40+	A2	REM		12.0

Havant Thicket Reservoir Project

Appendix A9.14B: Tree Survey Schedule

Tree ID	Species	Height (m)	Stem Diameter (mm)	Branch spread N (m)	Branch spread E (m)	Branch spread S (m)	Branch spread W (m)	First significant branch height (m)	Canopy height (m)	Life Stage	Vitality	General observations	Preliminary management recommendations	Estimated Remaining Contribution (Years)	Category Grading	Remove/Part Remove/Retain	Quantities for removal	RPA Radius (m)
T174	Common Oak	17	800	8	8	8	8	2	2	M	Good	Open-grown tree	No works presently required	40+	A2	RET		9.6
T175	Common Oak	17	800	8	8	8	8	2	2	M	Good	Open-grown tree in mown grass area, locally dominant	No works presently required	40+	A2	RET		9.6
G176	Ash	15	320	4.5	4.5	4.5	4.5	2	1.5	SM	Good to fair	Pair of trees in open ground on mown grass either side of footpath; crown lifting on path side; fair crown vitality	No works presently required	10+	C2	RET		3.8
G177	A group	8 ave.	250	4	4	4	4.0	0	0	EM	Good	Unmanaged, dense shrub vegetation on both sides of stream; goat willow prominent, also hawthorn, blackthorn; occasional larger individual trees recorded separately, etc.; biodiversity and habitat value	No works presently required	20+	B2	RET		3.0
G178	A group	8 ave.	250	4.5	4.5	4.5	4.5	0.5	0	EM	Good	Scrub vegetation with intermittent trees at rear of houses providing useful screening for residents; species include goat willow, hawthorn; individual specimens of ash and lime near Barncroft Way; much bramble; little or no management.	No works presently required	10+	C2	PRG	356m ² trees to be removed	3.0
G179	A group	19	700 ave.	6.5	6.5	6.5	6.5	2	2	M	Good	Group of specimen trees in mown grass area with parkland feel; high amenity value; predominantly common lime with mutual crown suppression and plentiful basal growth; 1no over-mature oak with some crown dieback; younger lime and oak included in group.	Some deadwood management likely to be required if adjacent to proposed works	40+	A2	RET		8.4
G180	Common Oak	17	800	8	8	8	8	2	2	M	Good	Trees growing at edge of streamside scrub vegetation; some mutual crown suppression.	No works presently required	40+	A2	RET		9.6
G181	Cedar	16	500	6.5	6.5	6.5	6.5	2	2	EM	Good	2no cedars on mown grass verge, 1no blue Atlas cedar and 1no Deodar; crowns lifted; Deodar crown suppressed by adjacent holly; utilities trench runs along adjacent pavement; blue cedar at 1m from pavement, root activity pushing up surface.	No works presently required	20+	B2	RET		6.0
G182	Lime	11	350	4	4	4	4.0	1.5	1.5	SM-EM	Good	Pair of trees growing in hedge at edge of tarmac playground area,	No works presently required	20+	B2	PRG	1no tree	4.2
T183	Plane	19	820	9.5	9.5	9.5	9.5	3	2	M	Good	Growing by hedge at boundary of school playing field; crown lifting,	No works presently required	40+	A2	RET		9.8

Havant Thicket Reservoir Project

Appendix A9.14B: Tree Survey Schedule

Tree ID	Species	Height (m)	Stem Diameter (mm)	Branch spread N (m)	Branch spread E (m)	Branch spread S (m)	Branch spread W (m)	First significant branch height (m)	Canopy height (m)	Life Stage	Vitality	General observations	Preliminary management recommendations	Estimated Remaining Contribution (Years)	Category Grading	Remove/Part Remove/Retain	Quantities for removal	RPA Radius (m)
G184	A group	to 8	to 280	3	3	3	3.0	0	0	SM	Good	Dense ornamental shrub planting, well maintained, with semi-mature trees at rear - field maple, cherry, eucalyptus; group includes pair of staked planted trees in grass area to west of vehicle turning ,	No works presently required	20+	B2	PRG	130m ² trees to be removed	3.4
G185	A group	16	450	7	7	7	7.0	0.5	0.5	M	Fair to poor	4no trees to south of railway line at edge of field subject to seasonal mowing; one tree displaying poor vitality, with significant deadwood in straggling crown; mutual crown suppression,	Inspection required to determine management requirements if adjacent to proposed works	10+	C2	PRG	146m ² trees to be removed	5.4
G186	Goat willow	7	300	4.5	4.5	4.5	4.5	0	0	EM	Good	Shrubby vegetation on both sides of footbridge over stream; some cherry,	No works presently required	20+	B2	PRG	98m ² trees to be removed	3.6
T187	Common lime	18	800	7.5	7.5	7.5	7.5	2	2	M	Good	On small mown green among housing - high amenity value; some dieback in eastern crown; cut back from telegraph pole to north-east, no other size management apparent,	No works presently required	40+	A2	RET		9.6
G188	Hornbeam	17	440	5	5	5	5.0	2.5	3	M	Good	High crown lifted, 6no stems at 2m spacings forming dense canopy,	No works presently required	20+	B2	RET		5.3
G189	Norway maple	to 16	460	7	7	7	7.0	2.5	2	M	Good	Pair of trees on broad mown grass area between roads; foliage of large-crowned northern tree mostly at crown extents,	No works presently required	20+	B2	RET		5.5

Appendix C. Glossary of terms

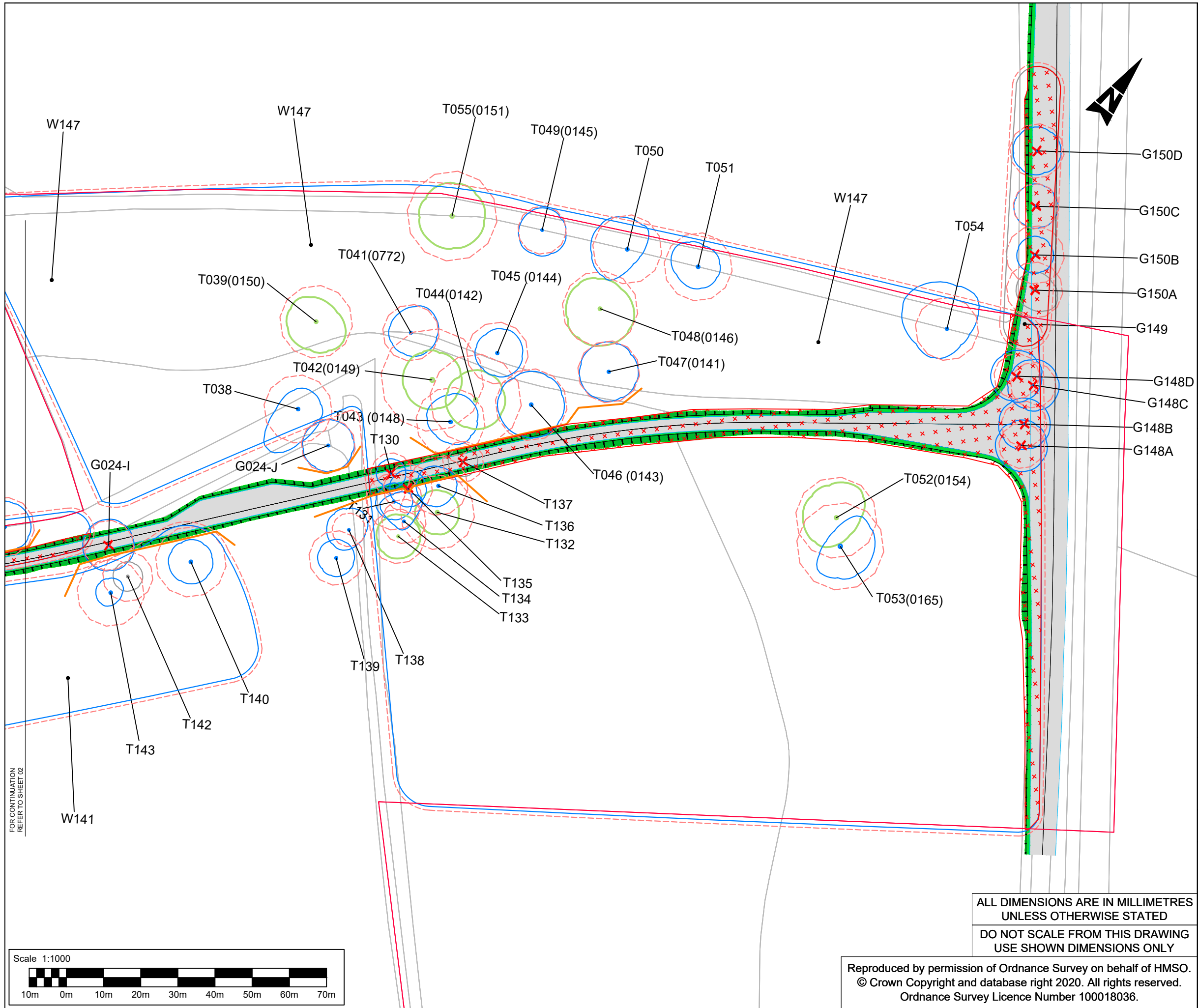
Table C-1 Glossary Table

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

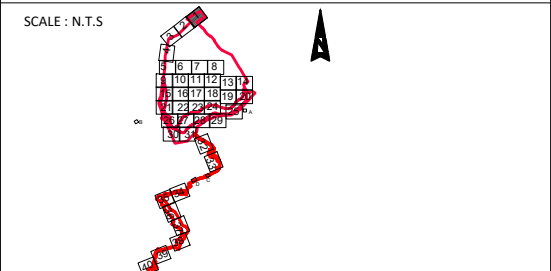
Term	Description
Wound Wood	Wood with atypical anatomical features, formed in the vicinity of a wound and a term to describe the occluding tissues around a wound as opposed to the ambiguous term “callus.”

Appendix D. Tree Protection Plans



KEY (not to scale)

- CATEGORY A TREE
- CATEGORY B TREE
- CATEGORY U TREE
- CATEGORY C TREE
- ROOT PROTECTION AREA (RPA)
- T/G/H001 TREE/GROUP/HEDGE REFERENCE NUMBER
- TREE GROUP OR HEDGE - COLOUR ACCORDING TO BS CATEGORY
- PROPOSED WORKS
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- VETERAN TREES



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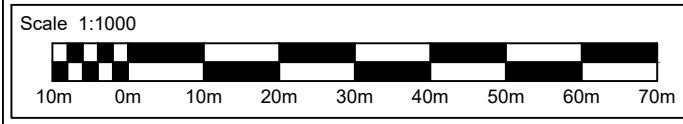
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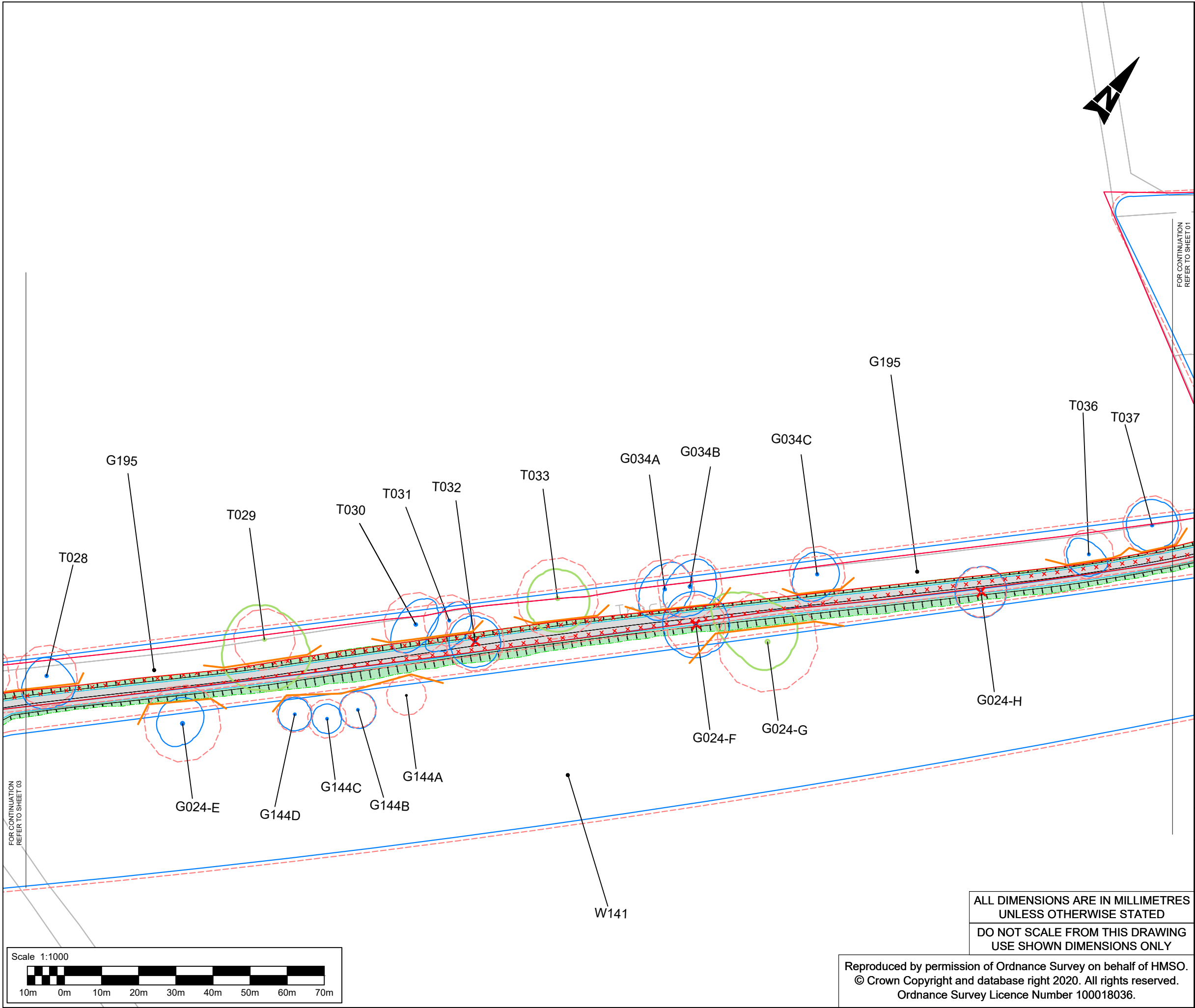
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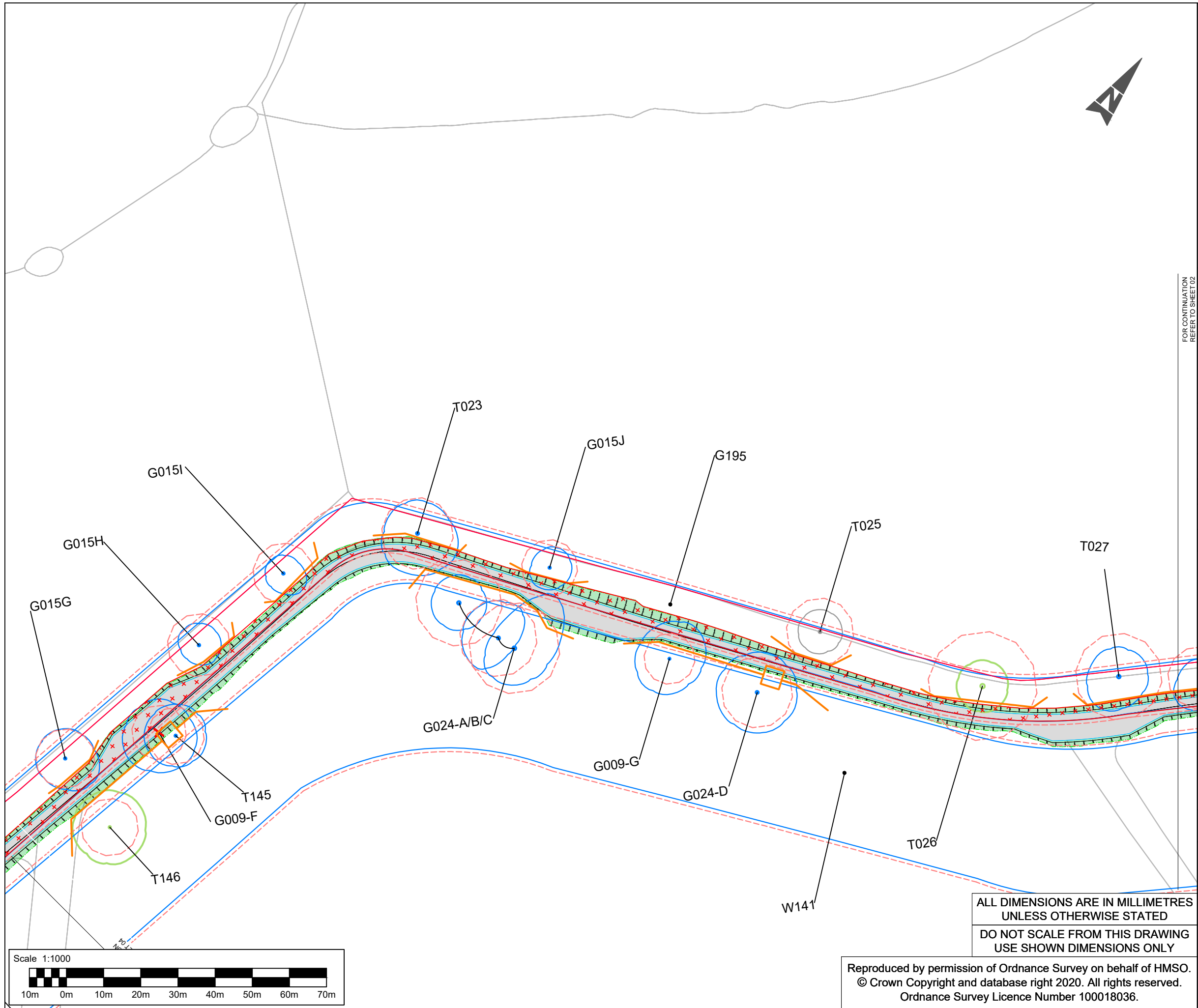
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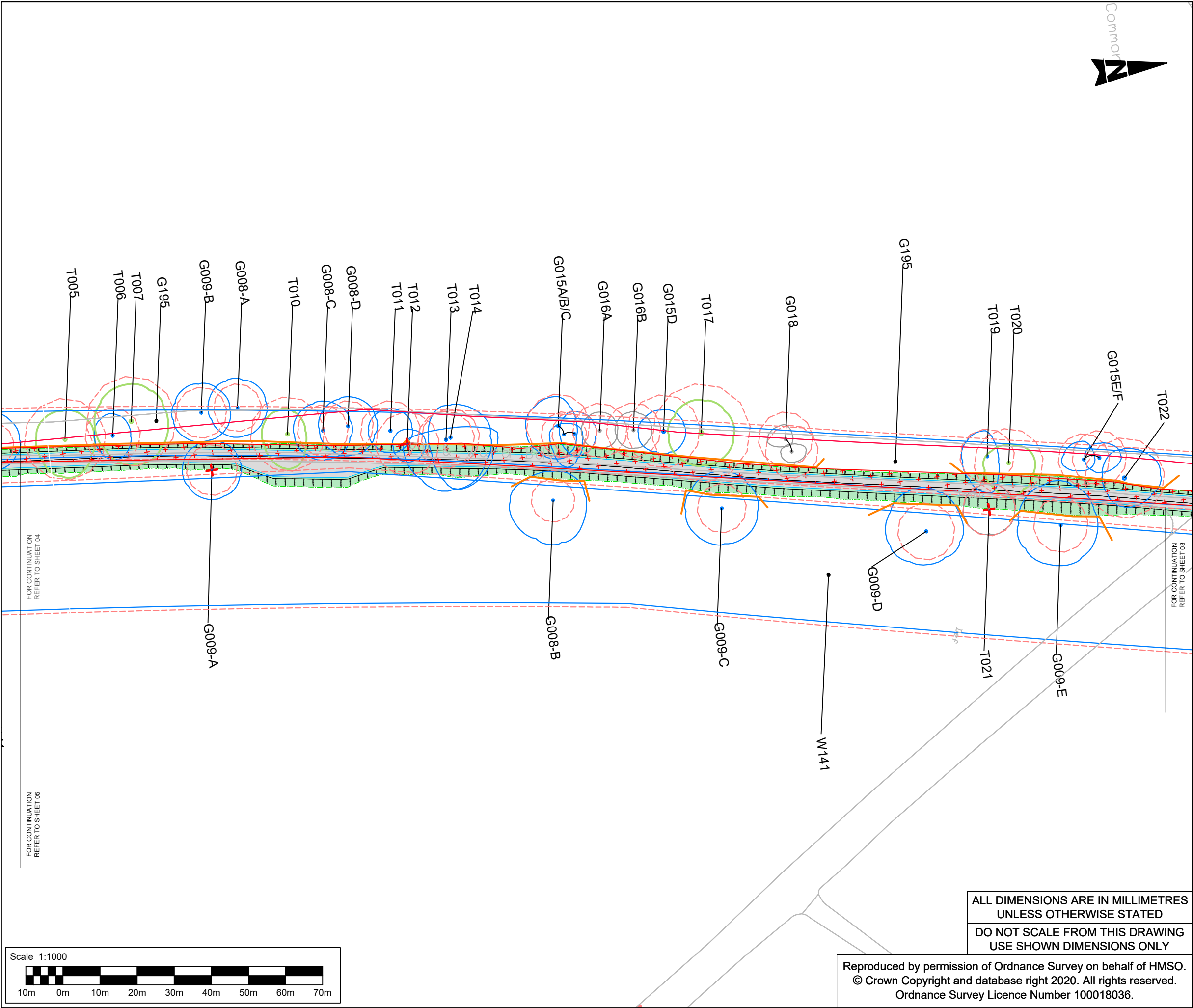
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Project Ref. No:	Sheet:	Scale:	Sheet Size:
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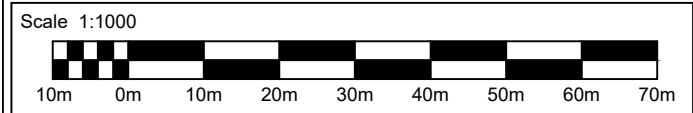
Project Title:
HAVANT THICKET RESERVOIR

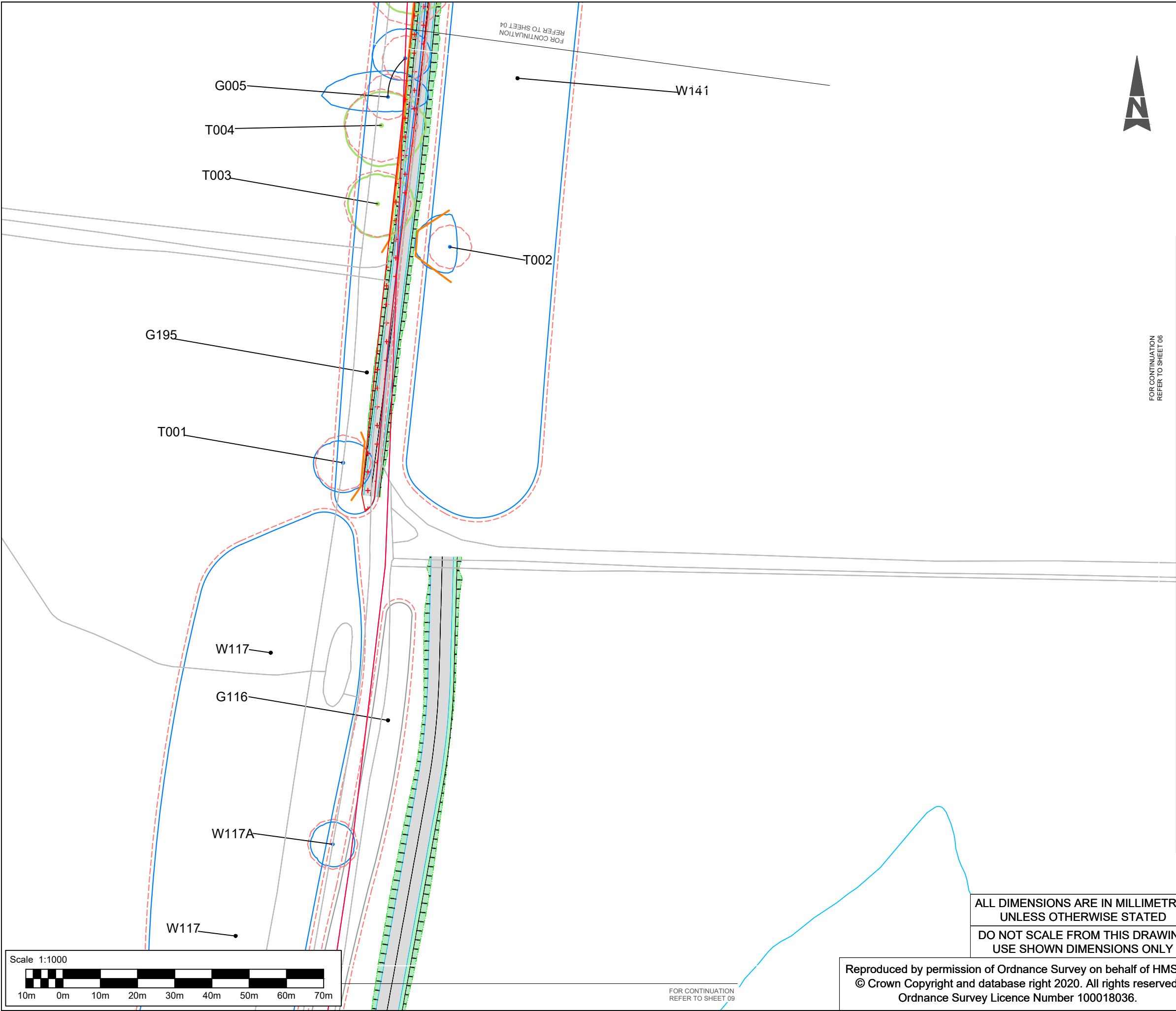
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**TREE PROTECTION PLAN
SHEET 4 OF 40**

Portsmouth Water Drawing Number:	Rev:
	P01.1

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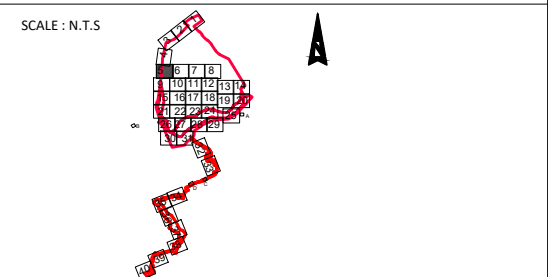
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KEY (not to scale)

- CATEGORY A TREE
- CATEGORY B TREE
- CATEGORY U TREE
- CATEGORY C TREE
- ROOT PROTECTION AREA (RPA)
- T/G/H001 TREE/GROUP/HEDGE REFERENCE NUMBER
- TREE GROUP OR HEDGE - COLOUR ACCORDING TO BS CATEGORY
- PROPOSED WORKS
- TREE TO BE REMOVED AS PART OF WORKS
- TREE AT RISK OF REMOVAL AS PART OF WORKS
- TREE GROUP TO BE REMOVED AS PART OF WORKS
- PROTECTIVE FENCING (INDICATIVE LOCATION ONLY)
- VETERAN TREES



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Drawing Suitability:	Status:
Initial non-contractual code	B1

Contractors Drawing Number:					
HTR	-	ATK	-	RZ	-
Project	Originator	Volume	Location	Type	Role
					Number

Telephone: Havant (023) 9249 9888
Fax: Havant (023) 9245 3632
Website: www.portsmouthwater.co.uk
Registered Office: PO Box 8 West Street
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Portsmouth Water

Project Ref. No:	Sheet:	Scale:	Sheet Size:
HTR	5 of 40	1:1000	A3

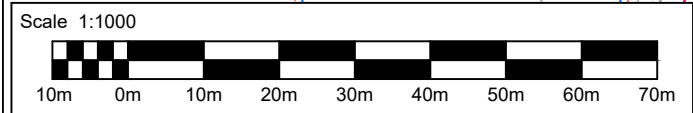
Project Title:
HAVANT THICKET RESERVOIR

Drawing Title:
TREE PROTECTION PLAN SHEET 5 OF 40

Portsmouth Water Drawing Number:	Rev:
	P01.1

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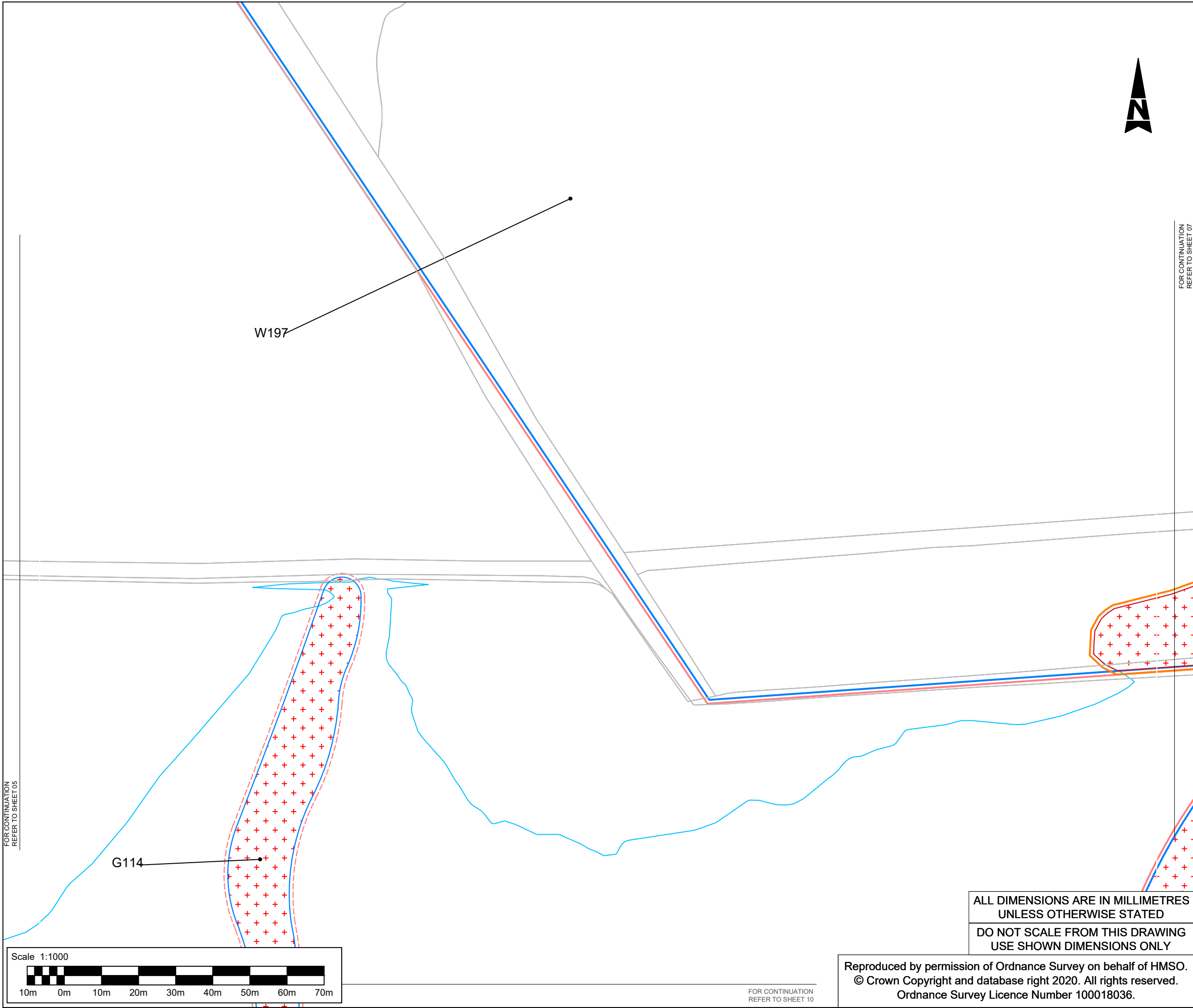
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FOR CONTINUATION
REFER TO SHEET 09

FOR CONTINUATION
REFER TO SHEET 06

FOR CONTINUATION
REFER TO SHEET 04



KEY (not to scale)

- CATEGORY A TREE
- CATEGORY B TREE
- CATEGORY U TREE
- CATEGORY C TREE
- ROOT PROTECTION AREA (RPA)
- T/G/H001 TREE/GROUP/HEDGE REFERENCE NUMBER
- TREE GROUP OR HEDGE - COLOUR ACCORDING TO BS CATEGORY
- PROPOSED WORKS
- TREE TO BE REMOVED AS PART OF WORKS
- TREE AT RISK OF REMOVAL AS PART OF WORKS
- TREE GROUP TO BE REMOVED AS PART OF WORKS
- PROTECTIVE FENCING (INDICATIVE LOCATION ONLY)
- VETERAN TREES

SCALE : N.T.S.

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Drawing Suitability:	Status:
Initial non-contractual code	B1

Contractors Drawing Number:						
HTR	-	ATK	-	RZ	-	RE - DR - L -1106
Project		Originator		Volume		Location Type Role Number

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Fax: Havant (023) 9245 3632
Website: www.portsmouthwater.co.uk
Registered Office: PO Box 8 West Street
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Project Ref. No:	Sheet:	Scale:	Sheet Size:
HTR	6 of 40	1:1000	A3

Project Title:
HAVANT THICKET RESERVOIR

Drawing Title:
TREE PROTECTION PLAN SHEET 6 OF 40

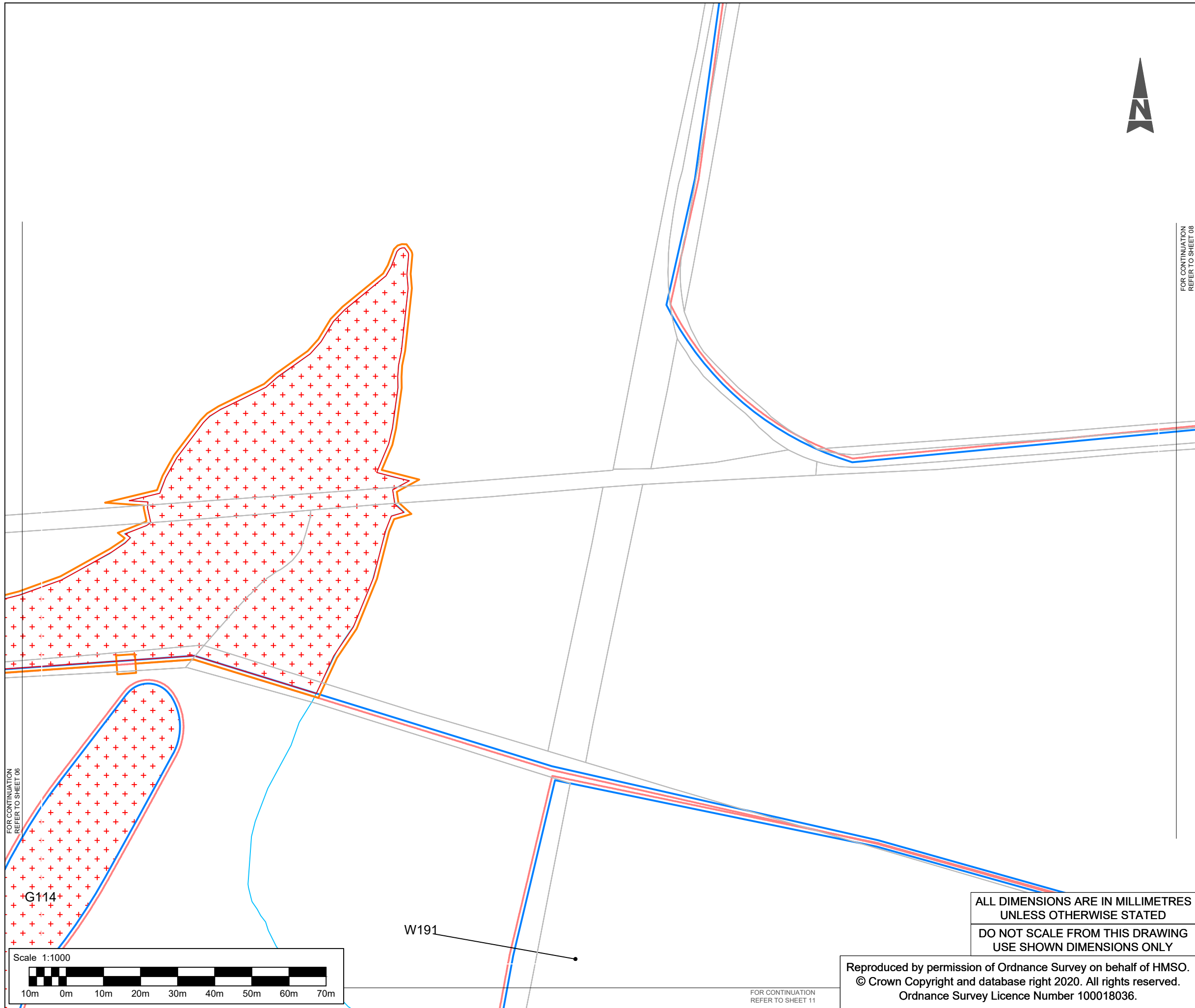
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	P01.1

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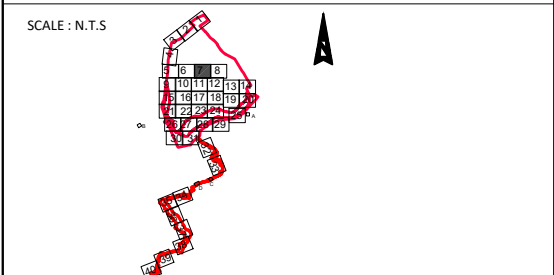
FOR CONTINUATION
REFER TO SHEET 05

FOR CONTINUATION
REFER TO SHEET 10



KEY (not to scale)

- CATEGORY A TREE
- CATEGORY B TREE
- CATEGORY U TREE
- CATEGORY C TREE
- ROOT PROTECTION AREA (RPA)
- T/G/H001 TREE/GROUP/HEDGE REFERENCE NUMBER
- TREE GROUP OR HEDGE - COLOUR ACCORDING TO BS CATEGORY
- PROPOSED WORKS
- TREE TO BE REMOVED AS PART OF WORKS
- TREE AT RISK OF REMOVAL AS PART OF WORKS
- TREE GROUP TO BE REMOVED AS PART OF WORKS
- PROTECTIVE FENCING (INDICATIVE LOCATION ONLY)
- VETERAN TREES



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Drawing Suitability:	Status:
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Contractors Drawing Number:
HTR - ATK - RZ - RE - DR - L -1107
Project Originator Volume Location Type Role Number

Telephone: Havant (023) 9249 9888
Fax: Havant (023) 9245 3632
Website: www.portsmouthwater.co.uk
Registered Office: PO Box 8 West Street
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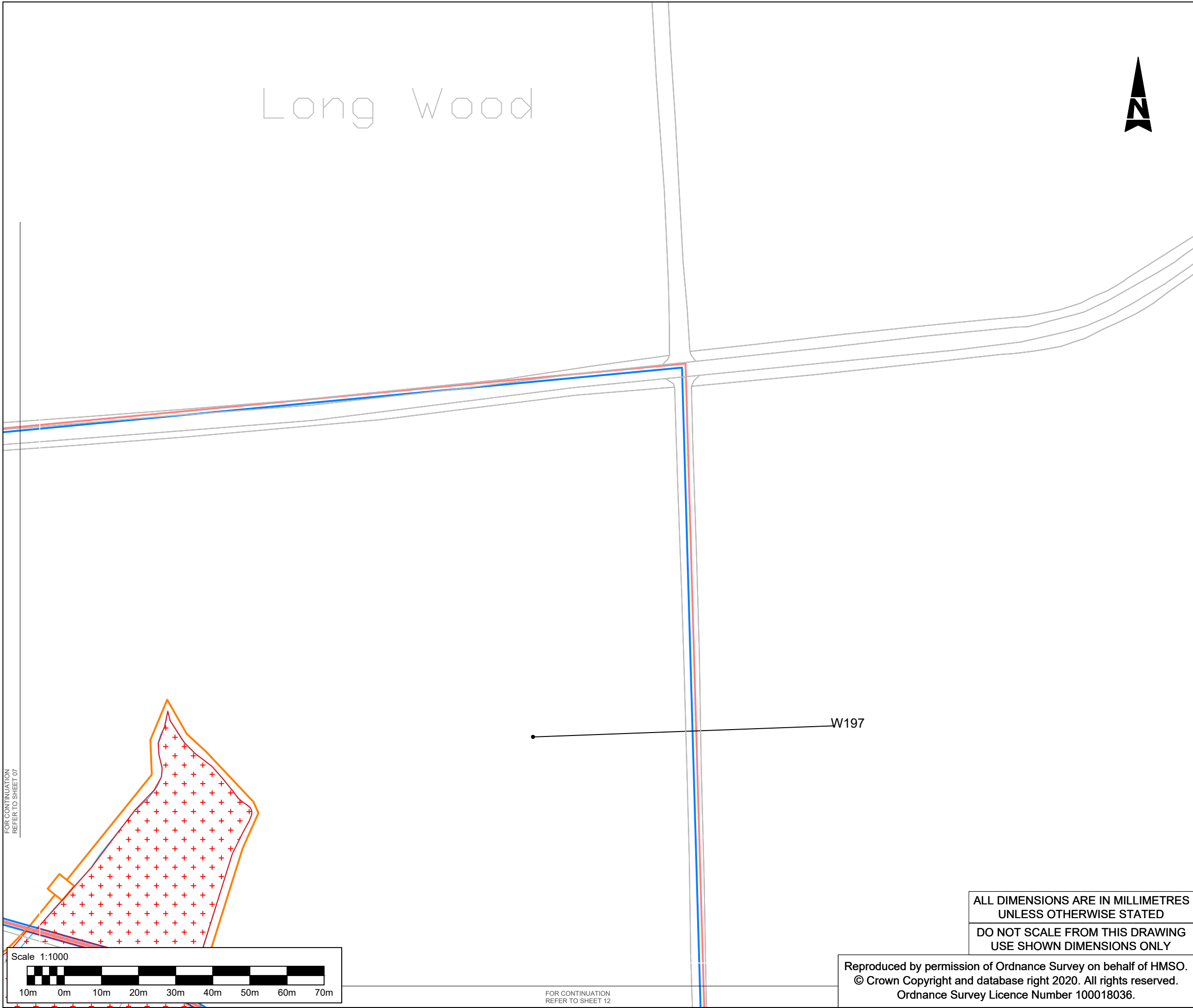
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HTR	7 of 40	1:1000	A3

Project Title:
HAVANT THICKET RESERVOIR

Drawing Title:
TREE PROTECTION PLAN SHEET 7 OF 40

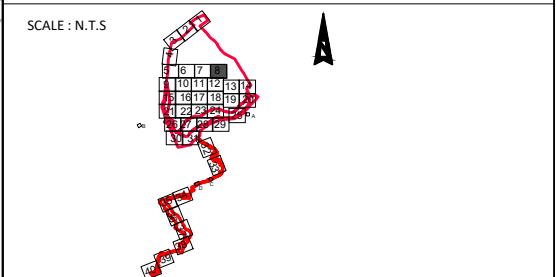
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- CATEGORY A TREE
- CATEGORY B TREE
- CATEGORY U TREE
- CATEGORY C TREE
- ROOT PROTECTION AREA (RPA)
- T/G/H001 TREE/GROUP/HEDGE REFERENCE NUMBER
- TREE GROUP OR HEDGE - COLOUR ACCORDING TO BS CATEGORY
- PROPOSED WORKS
- TREE TO BE REMOVED AS PART OF WORKS
- TREE AT RISK OF REMOVAL AS PART OF WORKS
- TREE GROUP TO BE REMOVED AS PART OF WORKS
- PROTECTIVE FENCING (INDICATIVE LOCATION ONLY)
- VETERAN TREES



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Project	Originator Volume Location Type Role Number

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Website: www.portsmouthwater.co.uk
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Project Ref. No: HTR	Sheet: 8 of 40	Scale: 1:1000	Sheet Size: A3
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Project Title: HAVANT THICKET RESERVOIR

Drawing Title: TREE PROTECTION PLAN SHEET 8 OF 40

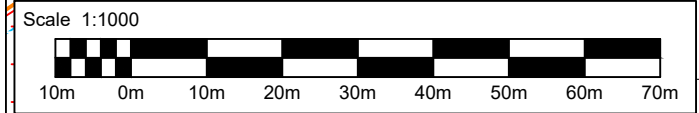
Portsmouth Water Drawing Number:	Rev: P01.1
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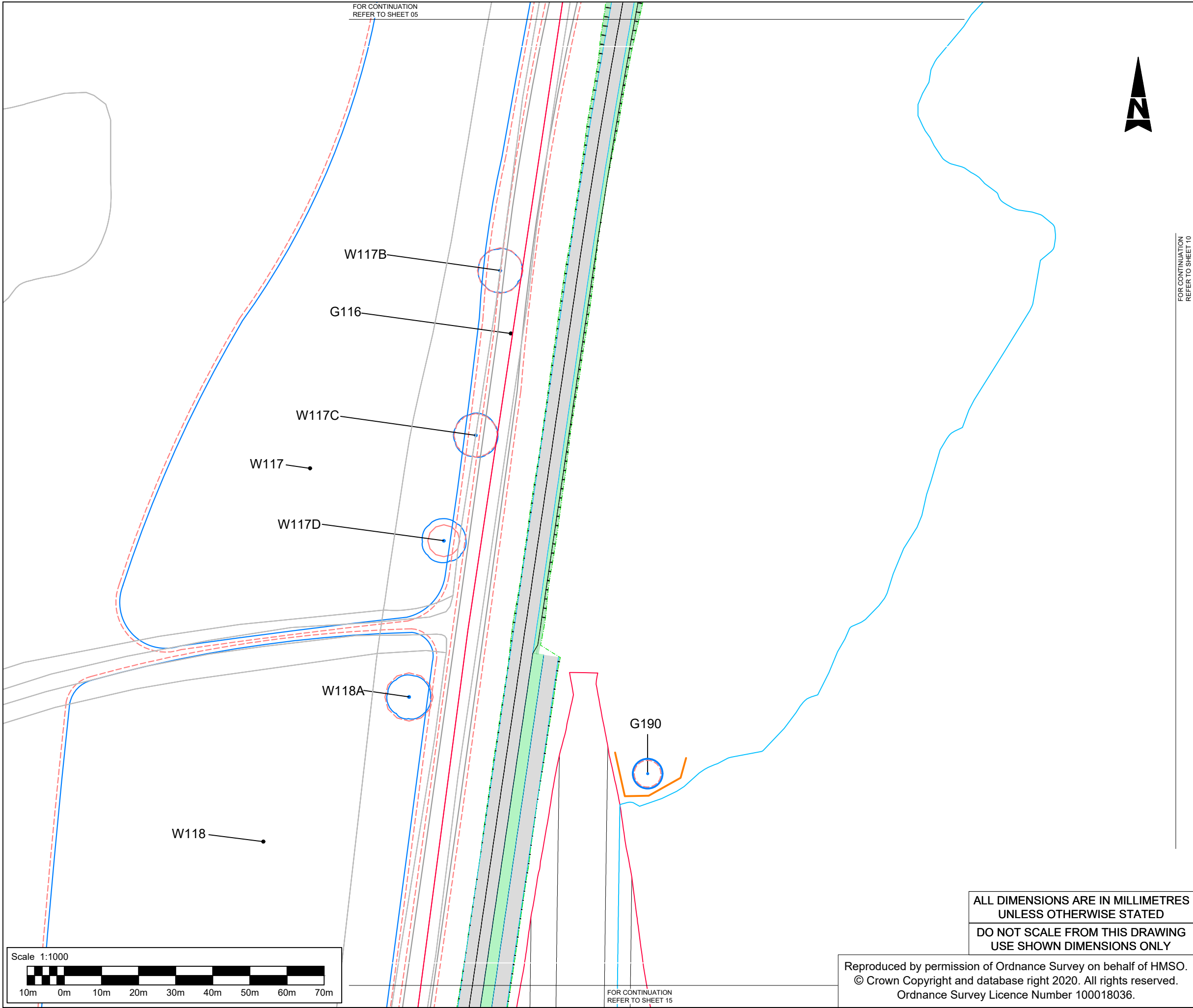
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FOR CONTINUATION
REFER TO SHEET 07





KEY (not to scale)

- CATEGORY A TREE
- CATEGORY B TREE
- CATEGORY U TREE
- CATEGORY C TREE
- ROOT PROTECTION AREA (RPA)
- T/G/H001 TREE/GROUP/HEDGE REFERENCE NUMBER
- TREE GROUP OR HEDGE - COLOUR ACCORDING TO BS CATEGORY
- PROPOSED WORKS
- TREE TO BE REMOVED AS PART OF WORKS
- TREE AT RISK OF REMOVAL AS PART OF WORKS
- TREE GROUP TO BE REMOVED AS PART OF WORKS
- PROTECTIVE FENCING (INDICATIVE LOCATION ONLY)
- VETERAN TREES

SCALE : N.T.S

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Contractors Drawing Number:

HTR - ATK - RZ - RE - DR - L -1109

Project | Originator | Volume | Location | Type | Role | Number

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Website: www.portsmouthwater.co.uk
Registered Office: PO Box 8 West Street
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Project Ref. No: HTR	Sheet: 9 of 40	Scale: 1:1000	Sheet Size: A3
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Project Title:

HAVANT THICKET RESERVOIR

Drawing Title:

TREE PROTECTION PLAN
SHEET 9 OF 40

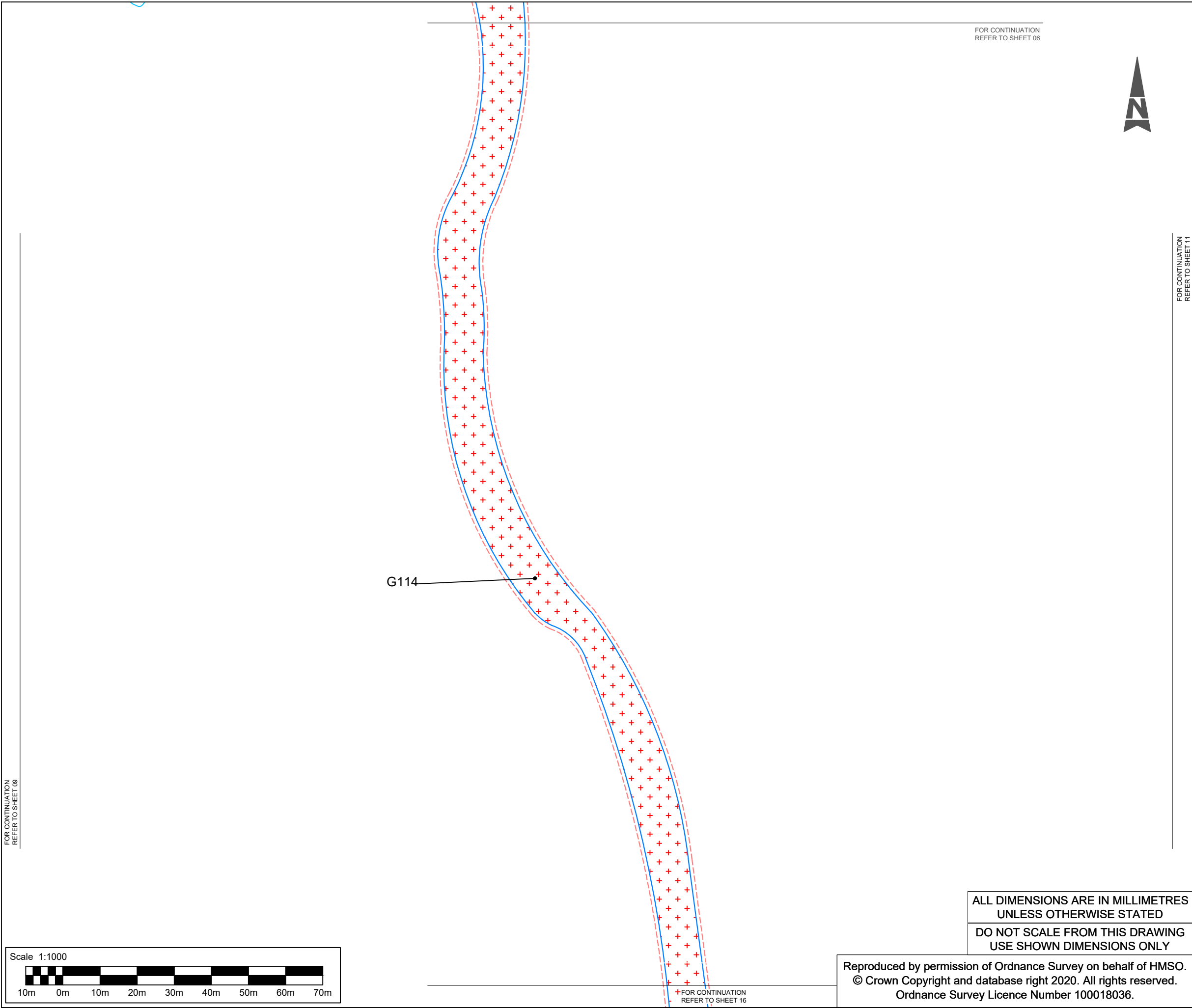
Portsmouth Water Drawing Number:

Rev:
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KEY (not to scale)

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- CATEGORY B TREE
- CATEGORY U TREE
- CATEGORY C TREE
- ROOT PROTECTION AREA (RPA)
- T/G/H001 TREE/GROUP/HEDGE REFERENCE NUMBER
- TREE GROUP OR HEDGE - COLOUR ACCORDING TO BS CATEGORY
- PROPOSED WORKS
- TREE TO BE REMOVED AS PART OF WORKS
- TREE AT RISK OF REMOVAL AS PART OF WORKS
- TREE GROUP TO BE REMOVED AS PART OF WORKS
- PROTECTIVE FENCING (INDICATIVE LOCATION ONLY)
- VETERAN TREES

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Contractors Drawing Number:

HTR - ATK - RZ - RE - DR - L -1110

Project	Originator	Volume	Location	Type	Role	Number
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Website: www.portsmouthwater.co.uk
Registered Office: PO Box 8 West Street
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Project Ref. No: HTR	Sheet: 10 of 40	Scale: 1:1000	Sheet Size: A3
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Project Title:

HAVANT THICKET
RESERVOIR

Drawing Title:

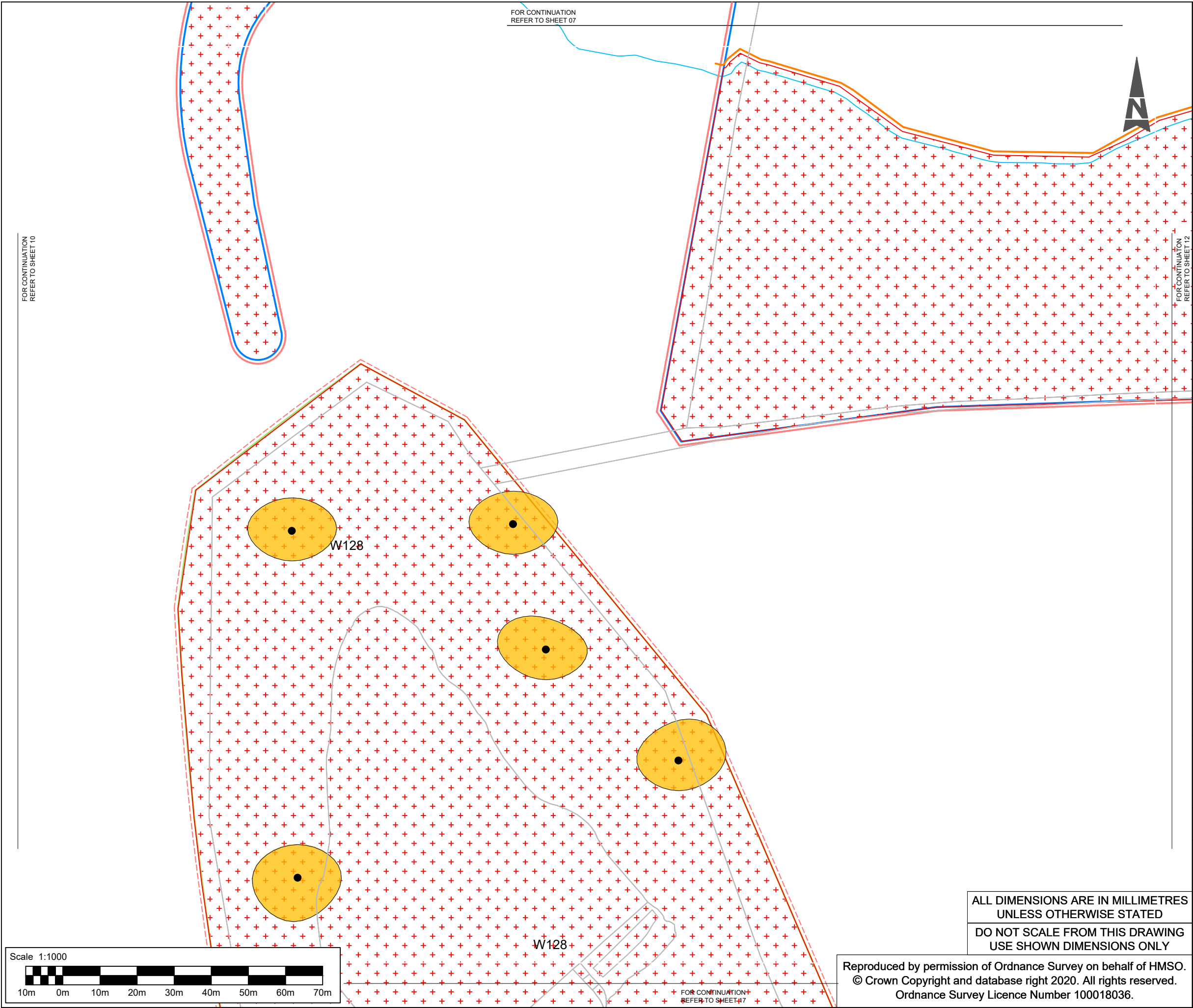
TREE PROTECTION PLAN
SHEET 10 OF 40

Portsmouth Water Drawing Number:	Rev: P01.1
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KEY (not to scale)

- CATEGORY A TREE
- CATEGORY B TREE
- CATEGORY U TREE
- CATEGORY C TREE
- ROOT PROTECTION AREA (RPA)
- T/G/H001 TREE/GROUP/HEDGE REFERENCE NUMBER
- TREE GROUP OR HEDGE - COLOUR ACCORDING TO BS CATEGORY
- PROPOSED WORKS
- TREE TO BE REMOVED AS PART OF WORKS
- TREE AT RISK OF REMOVAL AS PART OF WORKS
- TREE GROUP TO BE REMOVED AS PART OF WORKS
- PROTECTIVE FENCING (INDICATIVE LOCATION ONLY)
- VETERAN TREES

SCALE : N.T.S.

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Contractors Drawing Number:

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Project		Originator		Volume		Location		Type		Role		Number

Telephone: Havant (023) 9249 9888
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Website: www.portsmouthwater.co.uk
Registered Office: PO Box 8 West Street
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Project Ref. No: HTR	Sheet: 11 of 40	Scale: 1:1000	Sheet Size: A3
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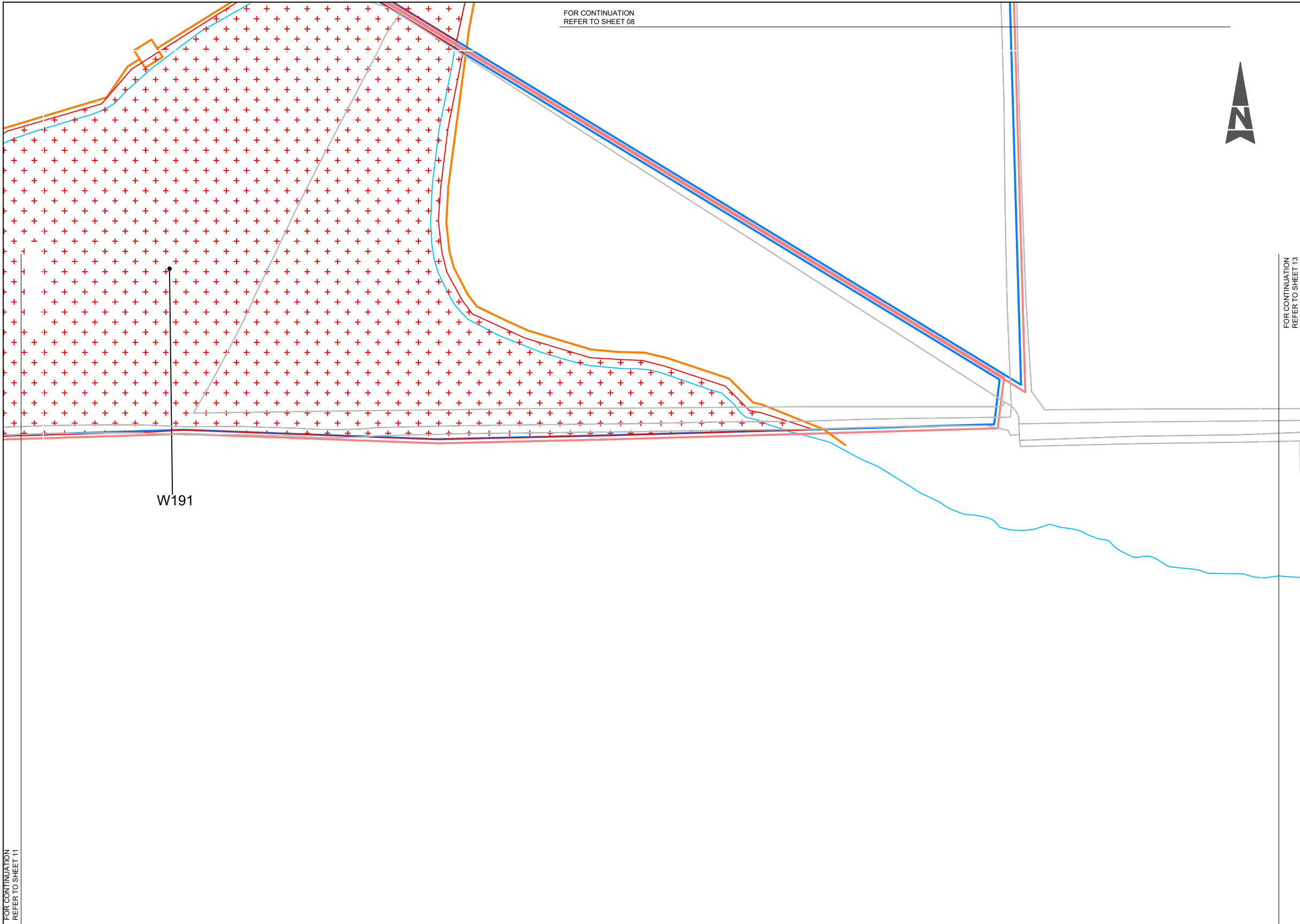
Project Title:
HAVANT THICKET RESERVOIR

Drawing Title:
**TREE PROTECTION PLAN
SHEET 11 OF 40**

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KEY (not to scale)

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- CATEGORY B TREE
- CATEGORY U TREE
- CATEGORY C TREE
- ROOT PROTECTION AREA (RPA)
- T/G/H001 TREE/GROUP/HEDGE REFERENCE NUMBER
- TREE GROUP OR HEDGE - COLOUR ACCORDING TO BS CATEGORY
- PROPOSED WORKS
- TREE TO BE REMOVED AS PART OF WORKS
- TREE AT RISK OF REMOVAL AS PART OF WORKS
- TREE GROUP TO BE REMOVED AS PART OF WORKS
- PROTECTIVE FENCING (INDICATIVE LOCATION ONLY)
- VETERAN TREES

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Contractors Drawing Number:	HTR - ATK - RZ - RE - DR - L - 1112
Project	Originator Volume Location Type Role Number

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Website: www.portsmouthwater.co.uk
Registered Office: PO Box 8 West Street
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REGISTERED IN ENGLAND No. 2536455

Portsmouth Water

Project Ref. No: HTR	Sheet: 12 of 40	Scale: 1:1000	Sheet Size: A3
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Project Title: HAVANT THICKET RESERVOIR

Drawing Title: TREE PROTECTION PLAN SHEET 12 OF 40
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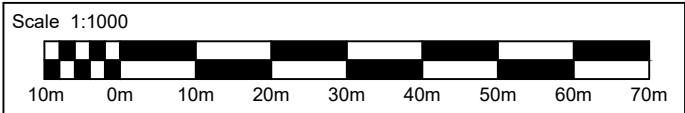
Portsmouth Water Drawing Number:	Rev: P01.1
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FOR CONTINUATION
REFER TO SHEET 08

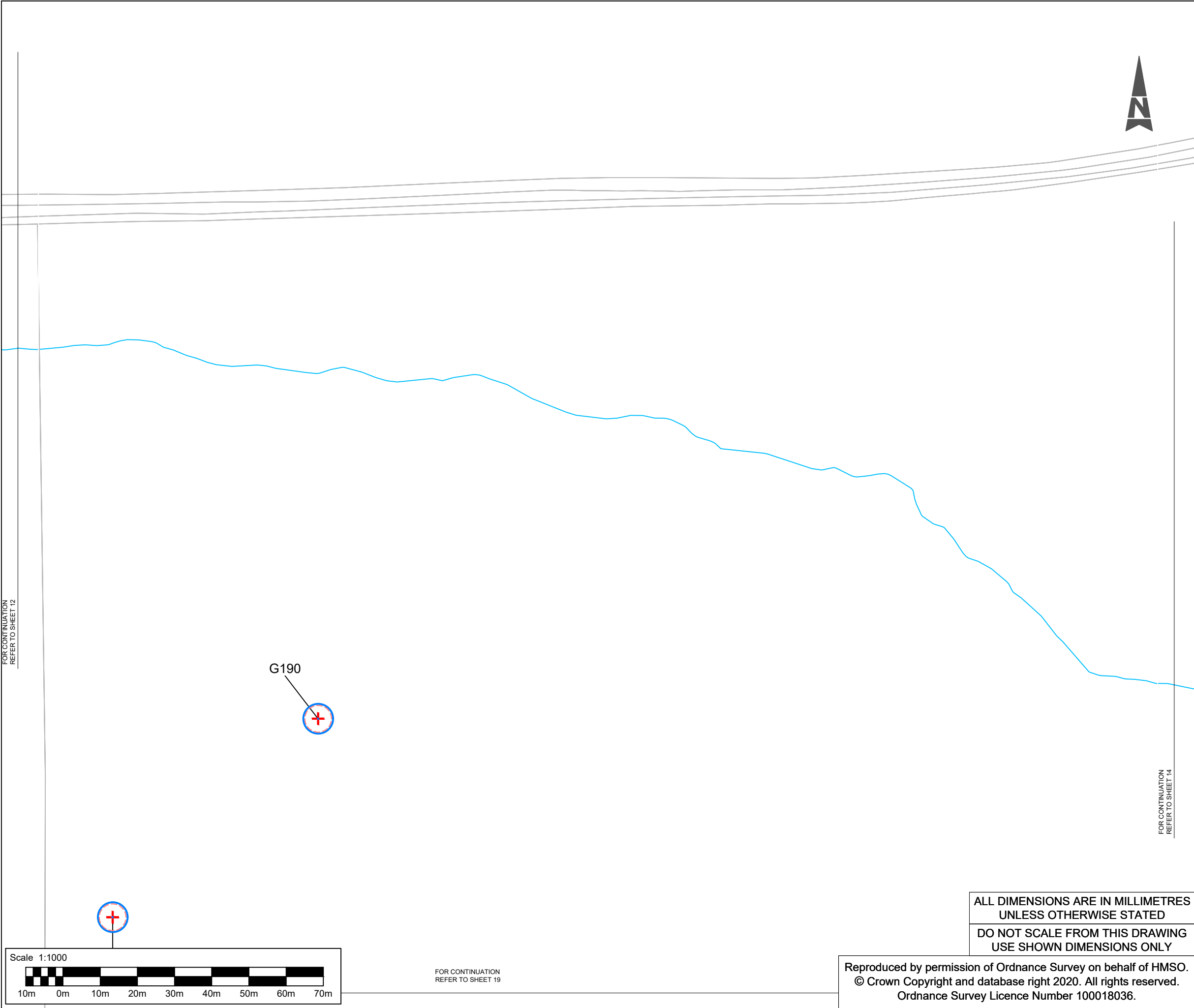
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FOR CONTINUATION
REFER TO SHEET 18



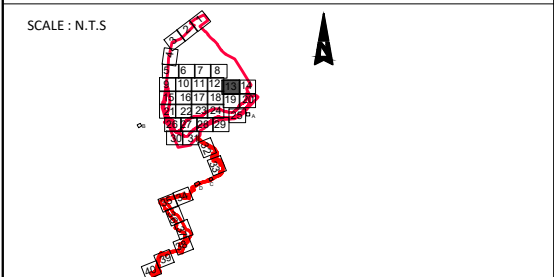
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KEY (not to scale)

- CATEGORY A TREE
- CATEGORY B TREE
- CATEGORY U TREE
- CATEGORY C TREE
- ROOT PROTECTION AREA (RPA)
- T/G/H001 TREE/GROUP/HEDGE REFERENCE NUMBER
- TREE GROUP OR HEDGE - COLOUR ACCORDING TO BS CATEGORY
- PROPOSED WORKS
- TREE TO BE REMOVED AS PART OF WORKS
- TREE AT RISK OF REMOVAL AS PART OF WORKS
- TREE GROUP TO BE REMOVED AS PART OF WORKS
- PROTECTIVE FENCING (INDICATIVE LOCATION ONLY)
- VETERAN TREES



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Contractors Drawing Number:						
HTR	-	ATK	-	RZ	-	RE - DR - L -1113
Project		Originator		Volume		Location Type Role Number

Telephone: Havant (023) 9249 9888
Fax: Havant (023) 9245 3632
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Registered Office: PO Box 8 West Street
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Portsmouth Water

Project Ref. No: HTR	Sheet: 13 of 40	Scale: 1:1000	Sheet Size: A3
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Project Title: HAVANT THICKET RESERVOIR

Drawing Title: TREE PROTECTION PLAN SHEET 13 OF 40
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Portsmouth Water Drawing Number:	Rev: P01.1
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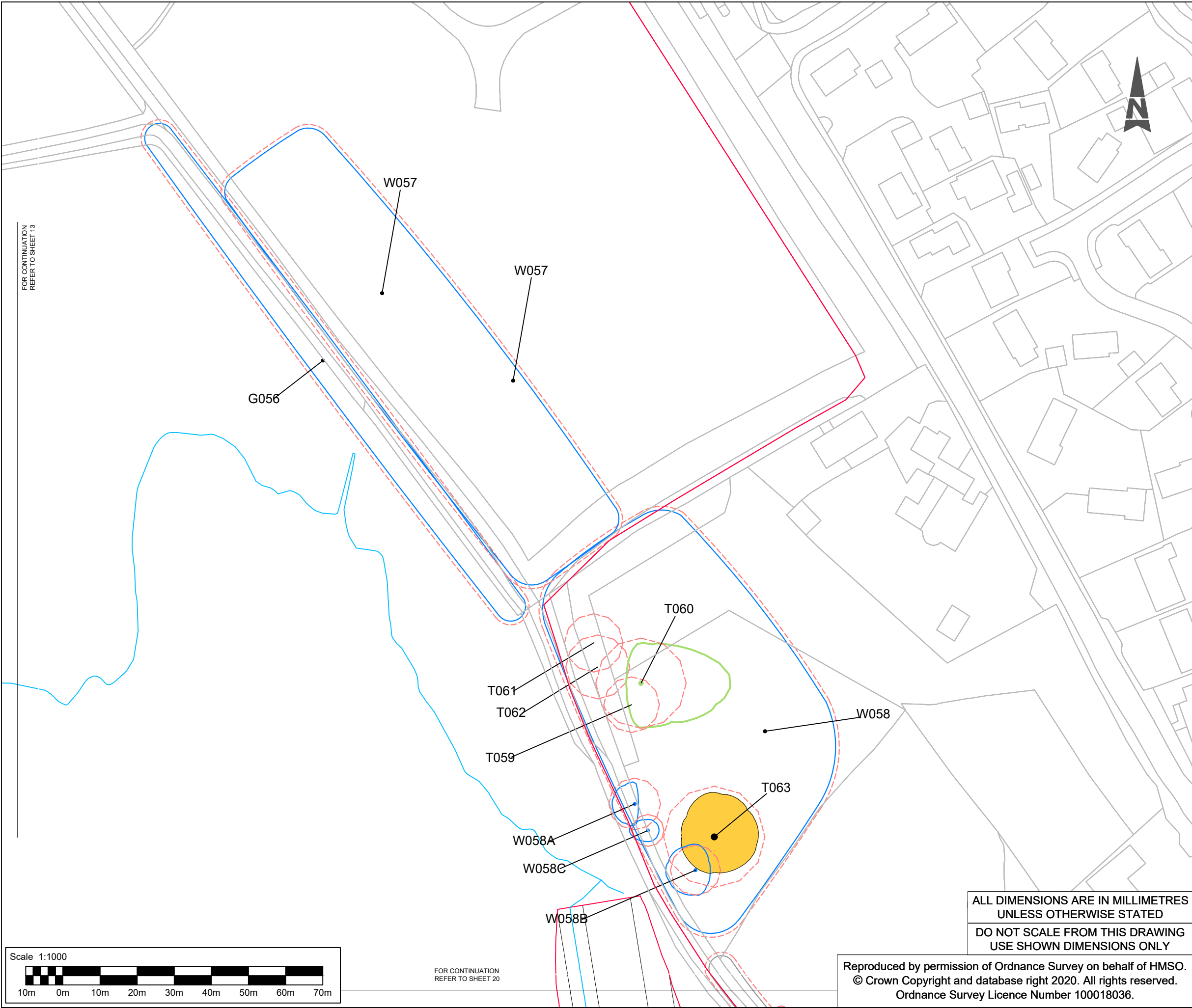
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FOR CONTINUATION
REFER TO SHEET 14

FOR CONTINUATION
REFER TO SHEET 19



KEY (not to scale)

- CATEGORY A TREE
- CATEGORY B TREE
- CATEGORY U TREE
- CATEGORY C TREE
- ROOT PROTECTION AREA (RPA)
- T/G/H001 TREE/GROUP/HEDGE REFERENCE NUMBER
- TREE GROUP OR HEDGE - COLOUR ACCORDING TO BS CATEGORY
- PROPOSED WORKS
- TREE TO BE REMOVED AS PART OF WORKS
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- TREE GROUP TO BE REMOVED AS PART OF WORKS
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- VETERAN TREES

SCALE : N.T.S.

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Drawing Suitability:	Status:
Initial non-contractual code	B1

Contractors Drawing Number:
HTR - ATK - RZ - RE - DR - L -1114
Project Originator Volume Location Type Role Number

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 Ref. No:	Sheet:	Scale:	Sheet Size:
HTR	14 of 40	1:1000	A3

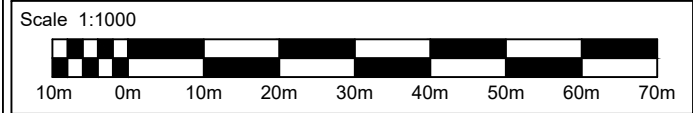
Project Title:
HAVANT THICKET RESERVOIR

Drawing Title:
TREE PROTECTION PLAN SHEET 14 OF 40

Portsmouth Water Drawing Number:	Rev:
	P01.1

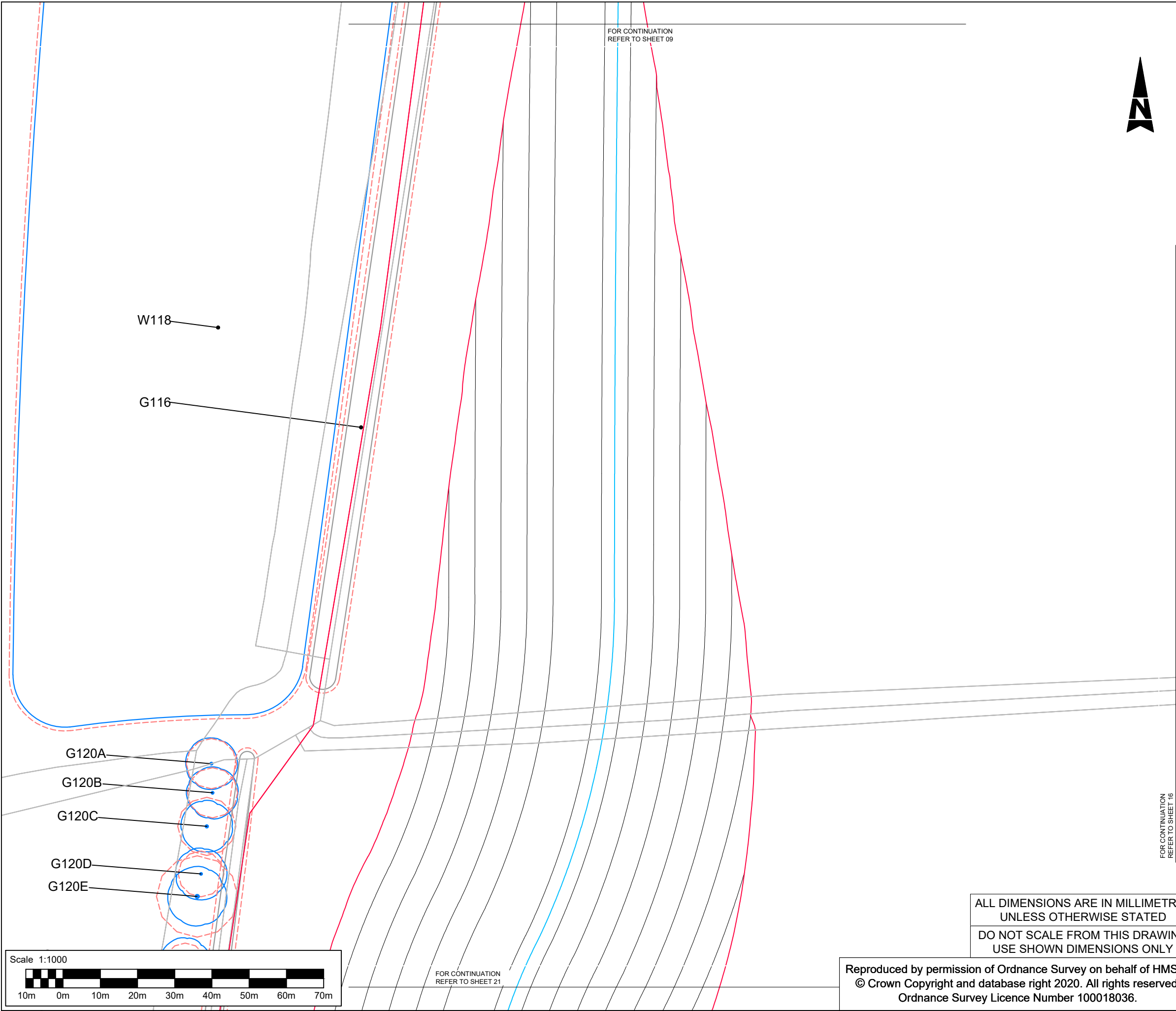
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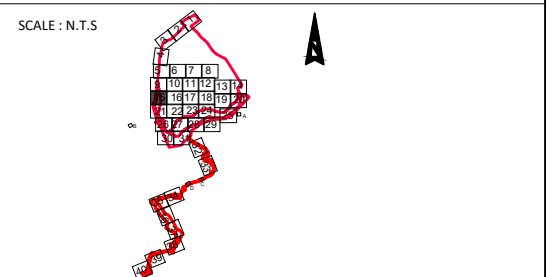
FOR CONTINUATION
REFER TO SHEET 20

FOR CONTINUATION
REFER TO SHEET 13



KEY (not to scale)

- CATEGORY A TREE
- CATEGORY B TREE
- CATEGORY U TREE
- CATEGORY C TREE
- ROOT PROTECTION AREA (RPA)
- T/G/H001 TREE/GROUP/HEDGE REFERENCE NUMBER
- TREE GROUP OR HEDGE - COLOUR ACCORDING TO BS CATEGORY
- PROPOSED WORKS
- TREE TO BE REMOVED AS PART OF WORKS
- TREE AT RISK OF REMOVAL AS PART OF WORKS
- TREE GROUP TO BE REMOVED AS PART OF WORKS
- PROTECTIVE FENCING (INDICATIVE LOCATION ONLY)
- VETERAN TREES



P01.1 B1	SS	TD	LJB	LJB	First Issue	04/09/20
Rev. Status	Drn By	Ckd By	Rev By	Auth By	Description	Date

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Drawing Suitability: Initial non-contractual code	Status: B1
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Contractors Drawing Number:	HTR - ATK - RZ - RE - DR - L -1115
Project	Originator Volume Location Type Role Number

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Havant Hampshire PO9 1LG
REGISTERED IN ENGLAND No. 2536455

Portsmouth Water

Project Ref. No: HTR	Sheet: 15 of 40	Scale: 1:1000	Sheet Size: A3
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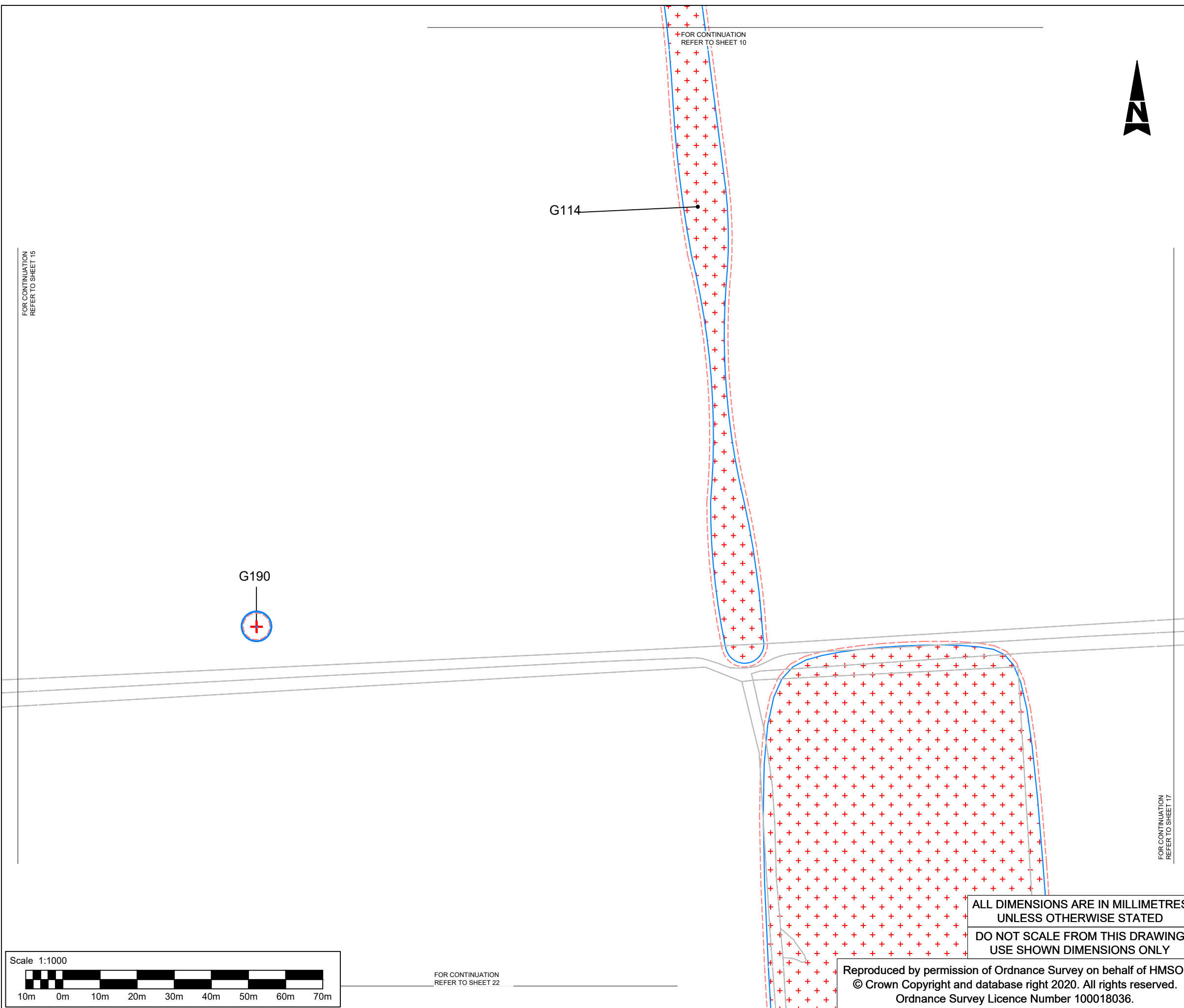
Project Title: HAVANT THICKET RESERVOIR

Drawing Title: TREE PROTECTION PLAN SHEET 15 OF 40
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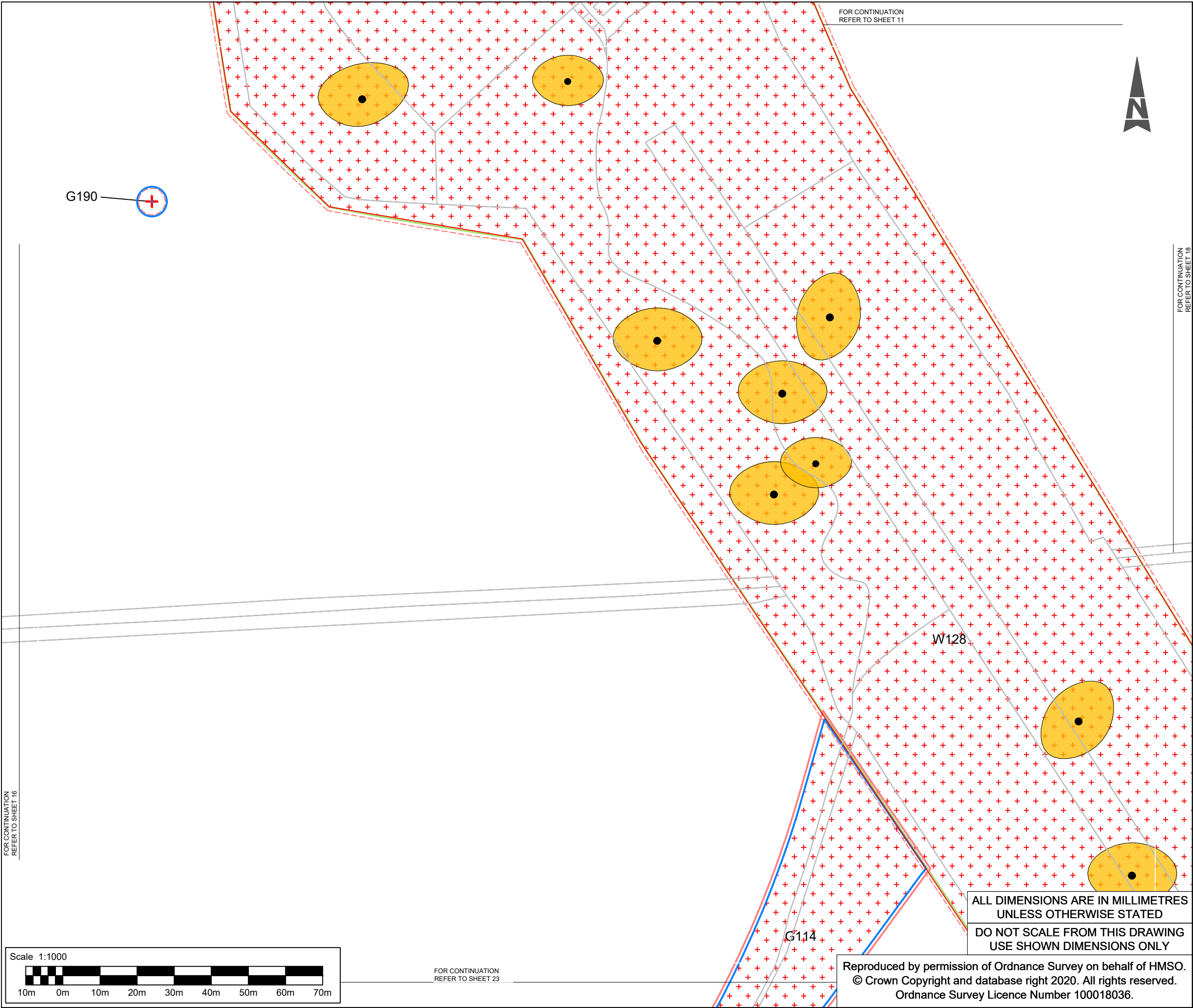
Portsmouth Water Drawing Number:	Rev: P01.1
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KEY (not to scale)

- CATEGORY A TREE
- CATEGORY B TREE
- CATEGORY U TREE
- CATEGORY C TREE
- ROOT PROTECTION AREA (RPA)
- T/G/H001 TREE/GROUP/HEDGE REFERENCE NUMBER
- TREE GROUP OR HEDGE - COLOUR ACCORDING TO BS CATEGORY
- PROPOSED WORKS
- TREE TO BE REMOVED AS PART OF WORKS
- TREE AT RISK OF REMOVAL AS PART OF WORKS
- TREE GROUP TO BE REMOVED AS PART OF WORKS
- PROTECTIVE FENCING (INDICATIVE LOCATION ONLY)
- VETERAN TREES

SCALE : N.T.S.

P01.1 B1	SS	TD	LJB	LJB	First Issue	04/09/20
Rev. Status	Drm By	Ckd By	Rev By	Auth By	Description	Date

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Drawing Suitability: Initial non-contractual code		Status: B1
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Contractors Drawing Number:

HTR	- ATK	- RZ	- RE	- DR	- L	- 1117
Project	Originator	Volume	Location	Type	Role	Number

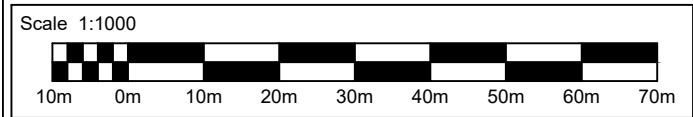
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Havant Hampshire PO9 1LG
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Project Ref. No: HTR	Sheet: 17 of 40	Scale: 1:1000	Sheet Size: A3
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Project Title:
HAVANT THICKET RESERVOIR

Drawing Title:
**TREE PROTECTION PLAN
SHEET 17 OF 40**

Portsmouth Water Drawing Number:	Rev: P01.1
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- KEY** (not to scale)
- CATEGORY A TREE
 - CATEGORY B TREE
 - CATEGORY U TREE
 - CATEGORY C TREE
 - ROOT PROTECTION AREA (RPA)
 - T/G/H001 TREE/GROUP/HEDGE REFERENCE NUMBER
 - TREE GROUP OR HEDGE - COLOUR ACCORDING TO BS CATEGORY
 - PROPOSED WORKS
 - TREE TO BE REMOVED AS PART OF WORKS
 - TREE AT RISK OF REMOVAL AS PART OF WORKS
 - TREE GROUP TO BE REMOVED AS PART OF WORKS
 - PROTECTIVE FENCING (INDICATIVE LOCATION ONLY)
 - VETERAN TREES

SCALE : N.T.S



G190



G114

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Initial non-contractual code	B1

Contractors Drawing Number:
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Project Originator Volume Location Type Role Number

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Project Title:
HAVANT THICKET RESERVOIR

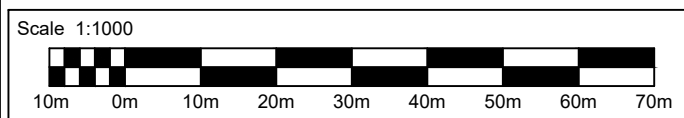
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Portsmouth Water Drawing Number:	Rev:
	P01.1

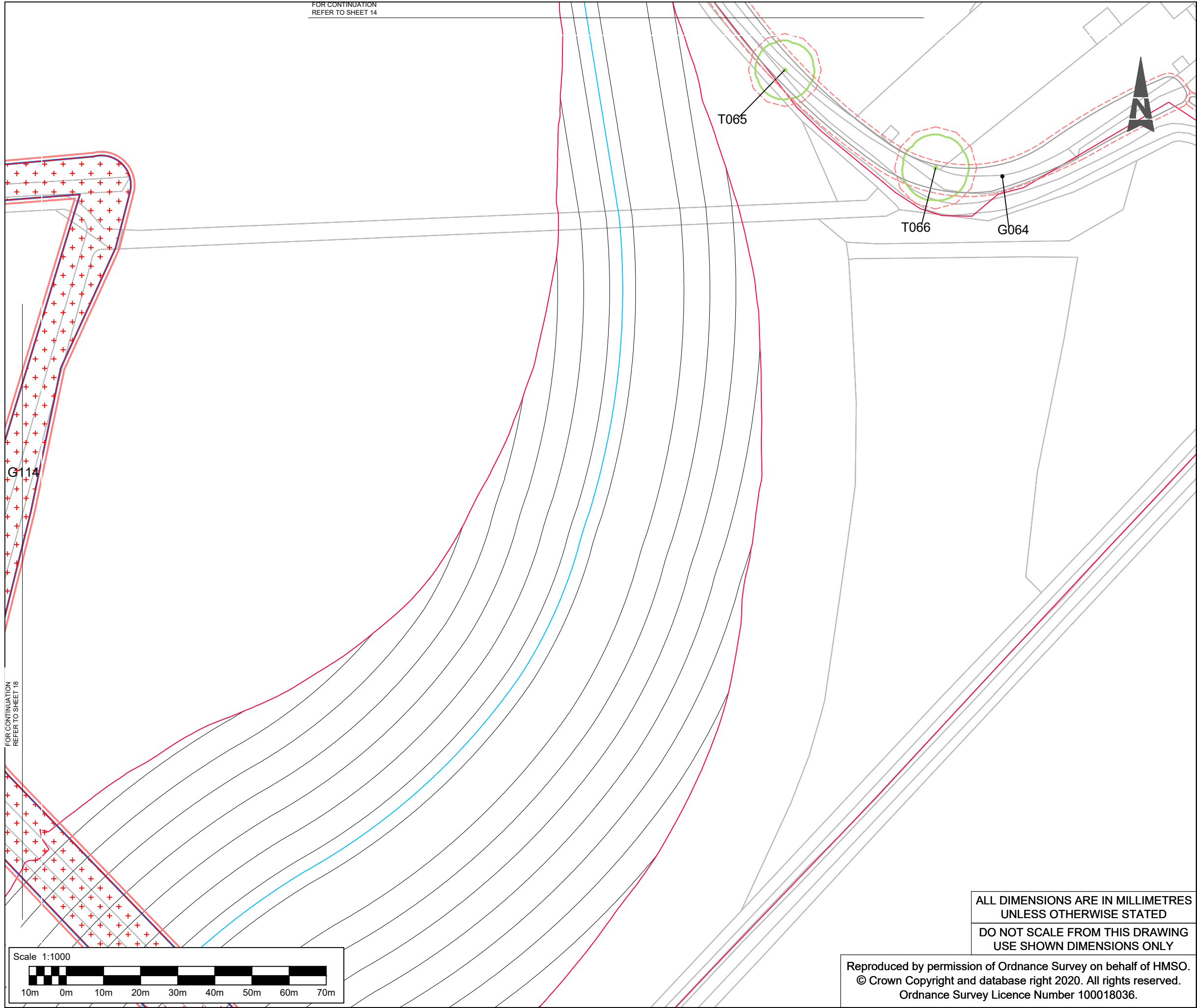
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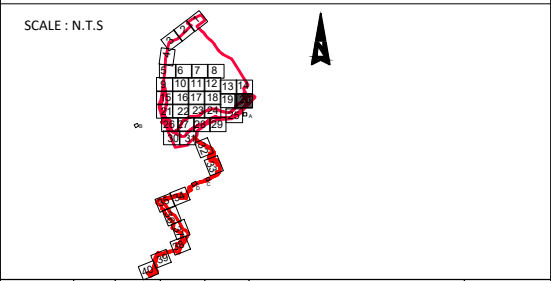


FOR CONTINUATION
REFER TO SHEET 14



KEY (not to scale)

- CATEGORY A TREE
- CATEGORY B TREE
- CATEGORY U TREE
- CATEGORY C TREE
- ROOT PROTECTION AREA (RPA)
- T/G/H001 TREE/GROUP/HEDGE REFERENCE NUMBER
- TREE GROUP OR HEDGE - COLOUR ACCORDING TO BS CATEGORY
- PROPOSED WORKS
- TREE TO BE REMOVED AS PART OF WORKS
- TREE AT RISK OF REMOVAL AS PART OF WORKS
- TREE GROUP TO BE REMOVED AS PART OF WORKS
- PROTECTIVE FENCING (INDICATIVE LOCATION ONLY)
- VETERAN TREES



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Rev. Status	Drn By	Ckd By	Rev By	Auth By	Description	Date

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Project Originator Volume Location Type Role Number

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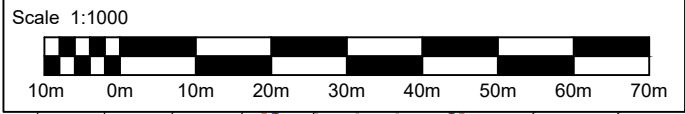
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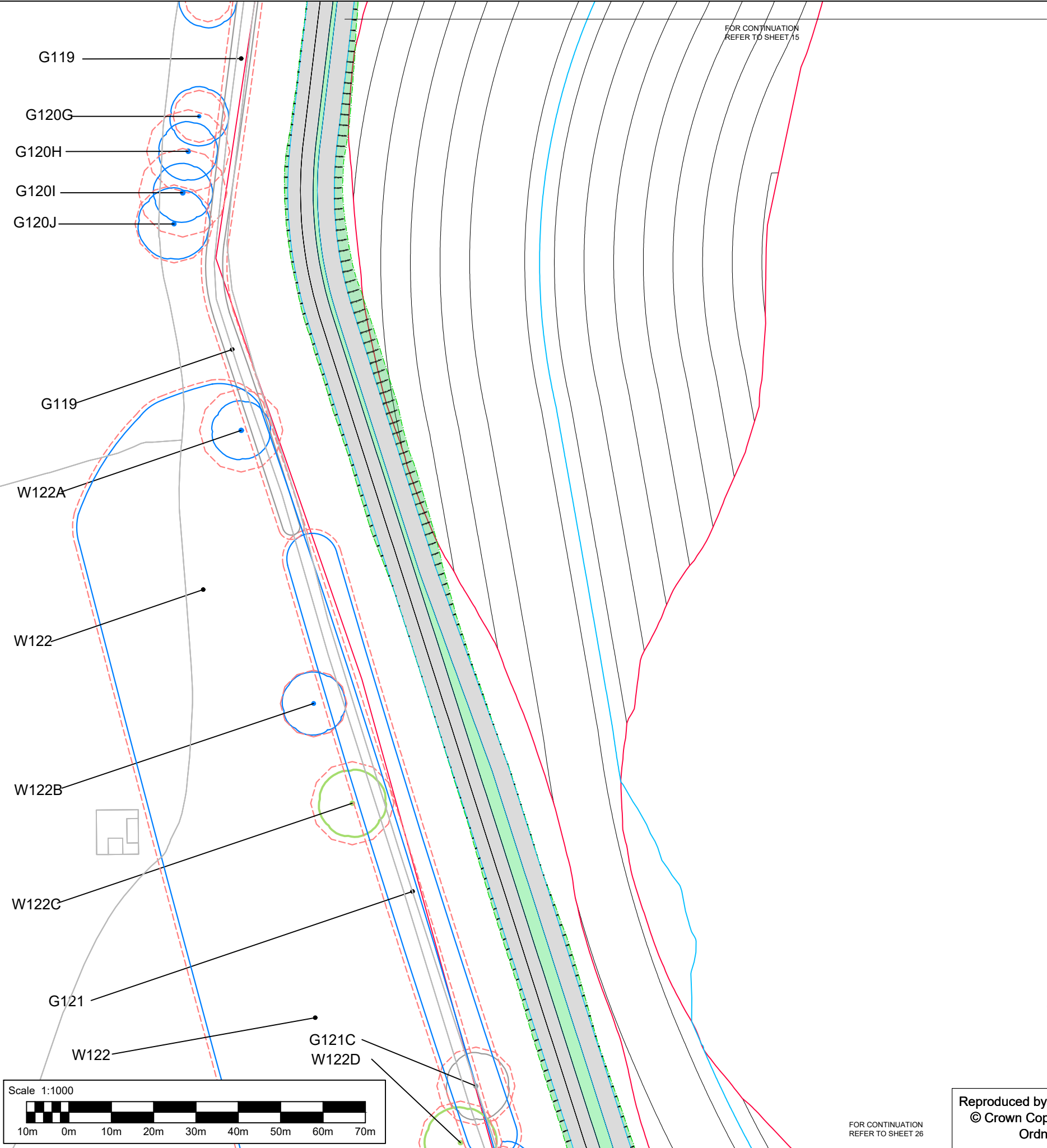
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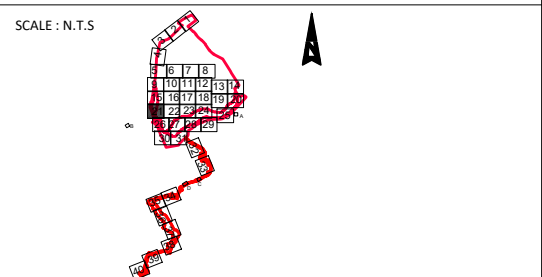
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KEY (not to scale)

- CATEGORY A TREE
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- VETERAN TREES



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Initial non-contractual code	B1

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Project Originator Volume Location Type Role Number

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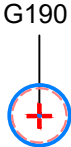
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Project Ref. No:	Sheet:	Scale:	Sheet Size:
HTR	21 of 40	1:1000	A3

Project Title:
HAVANT THICKET RESERVOIR

Drawing Title:
TREE PROTECTION PLAN SHEET 21 OF 40

Portsmouth Water Drawing Number:	Rev:
	P01.1



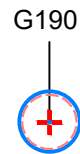
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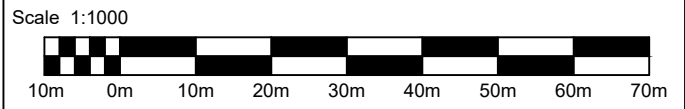
FOR CONTINUATION
REFER TO SHEET 26

FOR CONTINUATION
REFER TO SHEET 16

FOR CONTINUATION
REFER TO SHEET 21



G190



FOR CONTINUATION
REFER TO SHEET 27

W115

Middle
Clearing



KEY (not to scale)

- CATEGORY A TREE
- CATEGORY B TREE
- CATEGORY U TREE
- CATEGORY C TREE
- ROOT PROTECTION AREA (RPA)
- TREE/GROUP/HEDGE REFERENCE NUMBER
- TREE GROUP OR HEDGE - COLOUR ACCORDING TO BS CATEGORY
- PROPOSED WORKS
- TREE TO BE REMOVED AS PART OF WORKS
- TREE AT RISK OF REMOVAL AS PART OF WORKS
- TREE GROUP TO BE REMOVED AS PART OF WORKS
- PROTECTIVE FENCING (INDICATIVE LOCATION ONLY)
- VETERAN TREES

SCALE : N.T.S



P01.1 B1	SS	TD	LJB	LJB	First Issue	04/09/20
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Project	Originator Volume Location Type Role Number

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Havant Hampshire PO9 1LG
REGISTERED IN ENGLAND No. 2536455

Project Ref. No: HTR	Sheet: 22 of 40	Scale: 1:1000	Sheet Size: A3
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Project Title: HAVANT THICKET RESERVOIR

Drawing Title: TREE PROTECTION PLAN SHEET 22 OF 40
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Portsmouth Water Drawing Number:	Rev: P01.1
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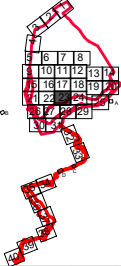
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FOR CONTINUATION
REFER TO SHEET 17

KEY (not to scale)

- CATEGORY A TREE
- CATEGORY B TREE
- CATEGORY U TREE
- CATEGORY C TREE
- ROOT PROTECTION AREA (RPA)
- T/G/H001 TREE/GROUP/HEDGE REFERENCE NUMBER
- TREE GROUP OR HEDGE - COLOUR ACCORDING TO BS CATEGORY
- PROPOSED WORKS
- TREE TO BE REMOVED AS PART OF WORKS
- TREE AT RISK OF REMOVAL AS PART OF WORKS
- TREE GROUP TO BE REMOVED AS PART OF WORKS
- PROTECTIVE FENCING (INDICATIVE LOCATION ONLY)
- VETERAN TREES

SCALE : N.T.S



P01.1	SS	TD	LJB	LJB	First Issue	04/09/20
B1						
Rev. Status	Drn By	Ckd By	Rev By	Auth By	Description	Date

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Contractors Drawing Number:
HTR - ATK - RZ - RE - DR - L - 1123
Project Originator Volume Location Type Role Number

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Portsmouth Water

Project Ref. No:	Sheet:	Scale:	Sheet Size:
HTR	23 of 40	1:1000	A3

Project Title:
HAVANT THICKET RESERVOIR

Drawing Title:
TREE PROTECTION PLAN SHEET 23 OF 40

Portsmouth Water Drawing Number:	Rev:
	P01.1

G190



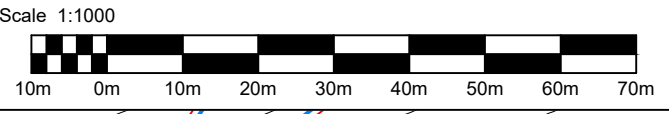
G114

G114

G190

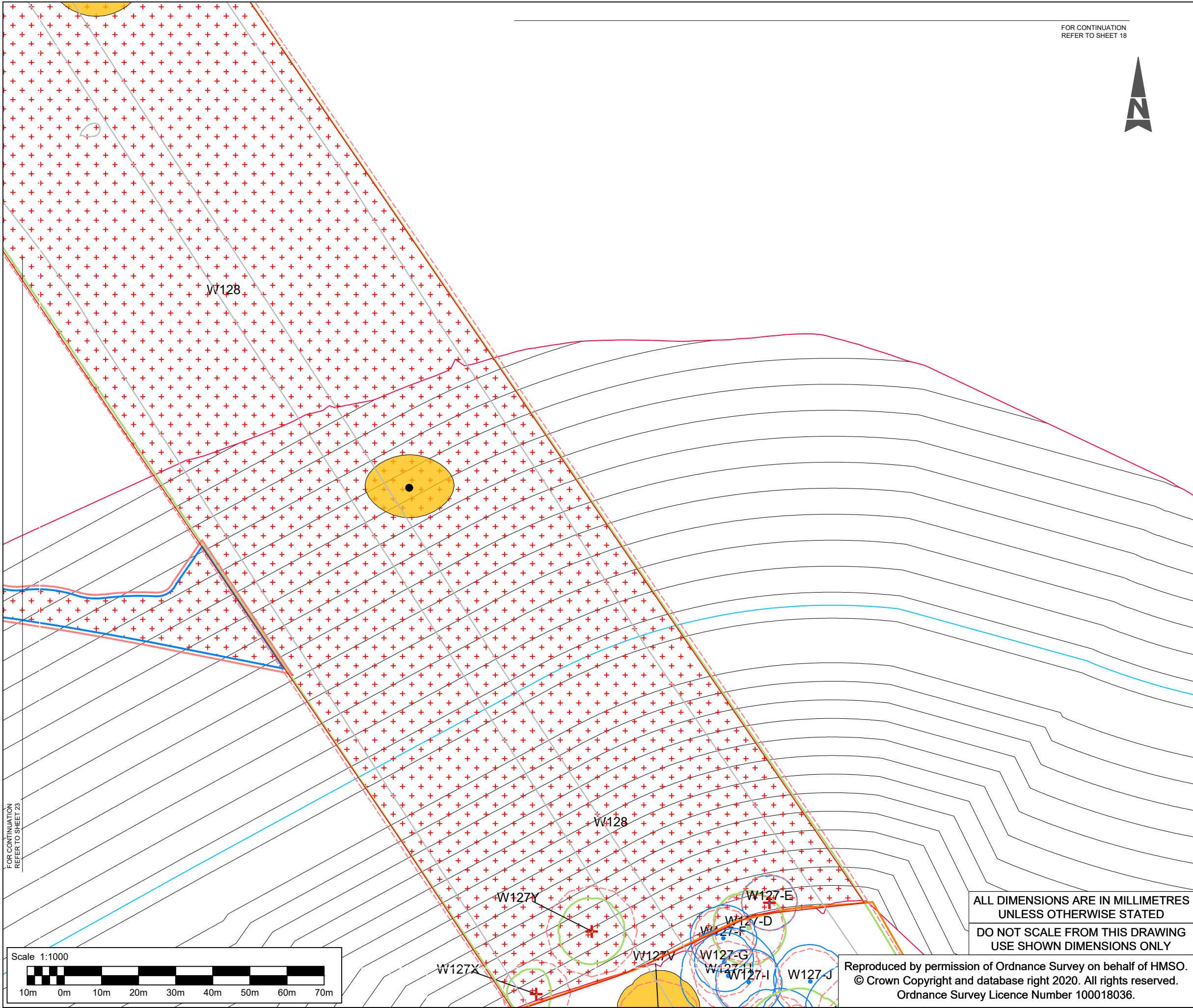


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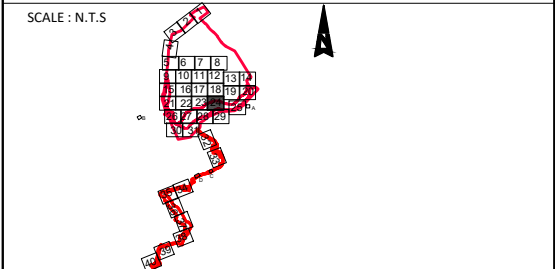
FOR CONTINUATION
REFER TO SHEET 28

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KEY (not to scale)

- CATEGORY A TREE
- CATEGORY B TREE
- CATEGORY U TREE
- CATEGORY C TREE
- ROOT PROTECTION AREA (RPA)
- T/G/H001 TREE/GROUP/HEDGE REFERENCE NUMBER
- TREE GROUP OR HEDGE - COLOUR ACCORDING TO BS CATEGORY
- PROPOSED WORKS
- TREE TO BE REMOVED AS PART OF WORKS
- TREE AT RISK OF REMOVAL AS PART OF WORKS
- TREE GROUP TO BE REMOVED AS PART OF WORKS
- PROTECTIVE FENCING (INDICATIVE LOCATION ONLY)
- VETERAN TREES



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Contractors Drawing Number:
HTR - ATK - RZ - RE - DR - L -1124
Project Originator Volume Location Type Role Number

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Website: www.portsmouthwater.co.uk
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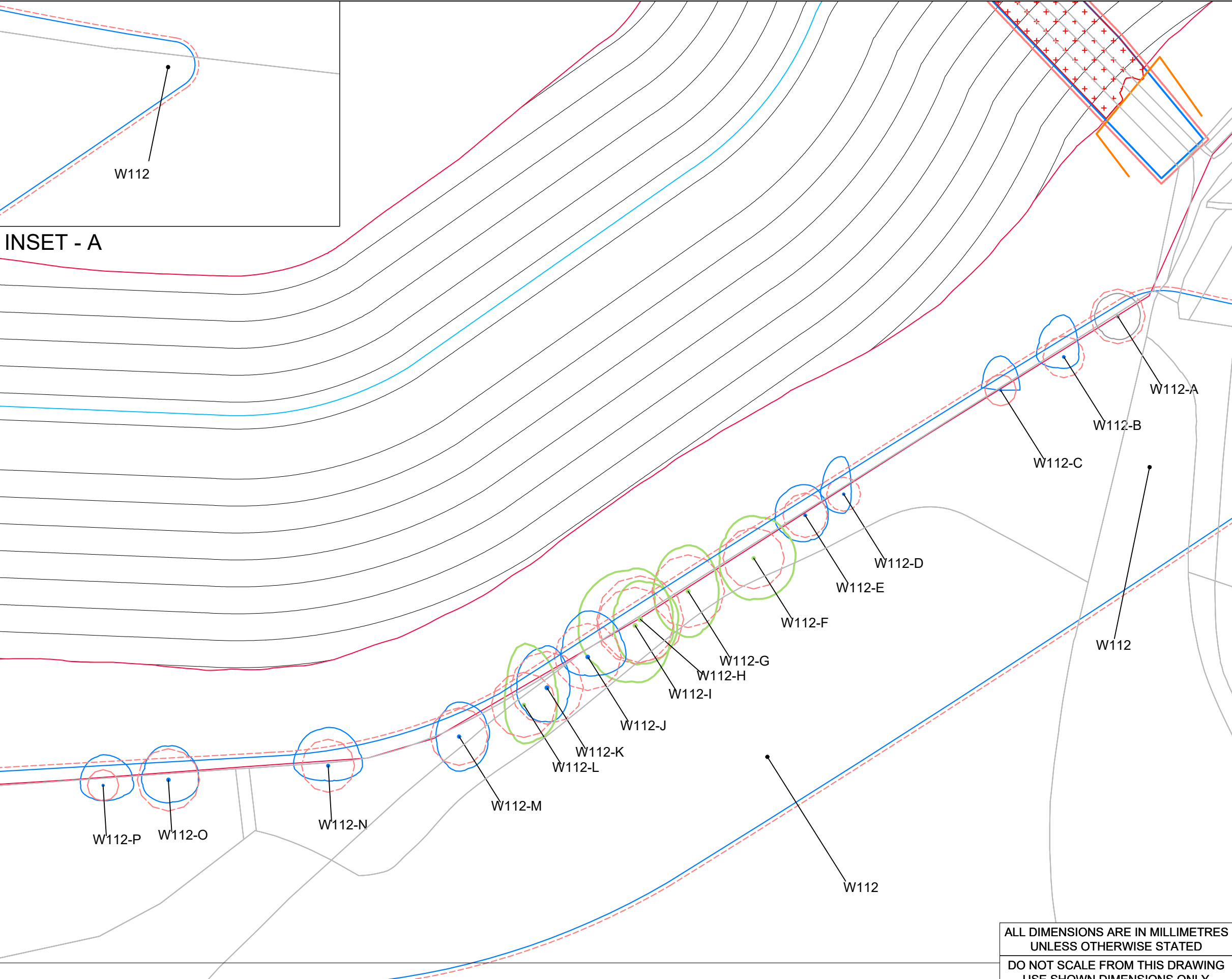
Portsmouth Water

Project Ref. No:	Sheet:	Scale:	Sheet Size:
HTR	24 of 40	1:1000	A3

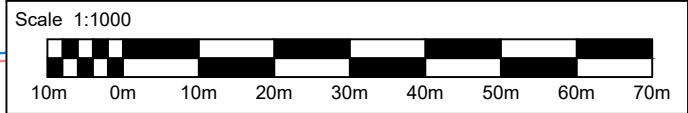
Project Title:
HAVANT THICKET RESERVOIR

Drawing Title:
TREE PROTECTION PLAN SHEET 24 OF 40

Portsmouth Water Drawing Number:	Rev:
	P01.1



INSET - A



KEY (not to scale)

- CATEGORY A TREE
- CATEGORY B TREE
- CATEGORY U TREE
- CATEGORY C TREE
- ROOT PROTECTION AREA (RPA)
- T/G/H001 TREE/GROUP/HEDGE REFERENCE NUMBER
- TREE GROUP OR HEDGE - COLOUR ACCORDING TO BS CATEGORY
- PROPOSED WORKS
- TREE TO BE REMOVED AS PART OF WORKS
- TREE AT RISK OF REMOVAL AS PART OF WORKS
- TREE GROUP TO BE REMOVED AS PART OF WORKS
- PROTECTIVE FENCING (INDICATIVE LOCATION ONLY)
- VETERAN TREES

SCALE : N.T.S.

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Contractors Drawing Number:

HTR - ATK - RZ - RE - DR - L -1125

Project	Originator	Volume	Location	Type	Role	Number
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Project Ref. No: HTR	Sheet: 25 of 40	Scale: 1:1000	Sheet Size: A3
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Project Title:

HAVANT THICKET
RESERVOIR

Drawing Title:

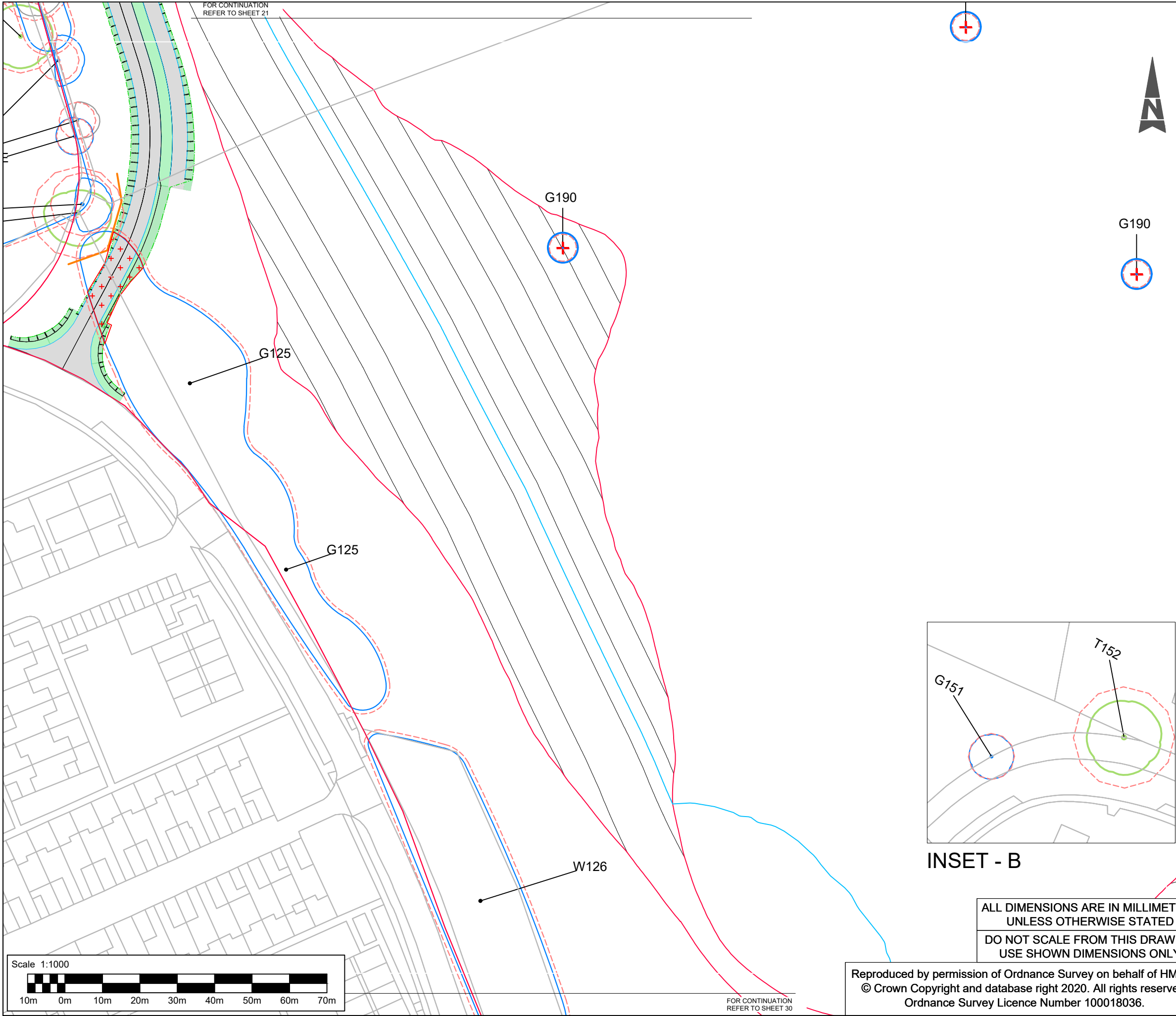
TREE PROTECTION PLAN
SHEET 25 OF 40

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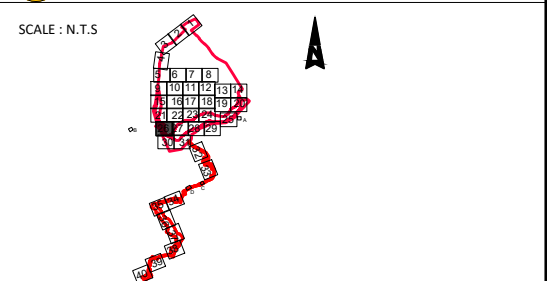
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KEY (not to scale)

- CATEGORY A TREE
- CATEGORY B TREE
- CATEGORY U TREE
- CATEGORY C TREE
- ROOT PROTECTION AREA (RPA)
- T/G/H001 TREE/GROUP/HEDGE REFERENCE NUMBER
- TREE GROUP OR HEDGE - COLOUR ACCORDING TO BS CATEGORY
- PROPOSED WORKS
- TREE TO BE REMOVED AS PART OF WORKS
- TREE AT RISK OF REMOVAL AS PART OF WORKS
- TREE GROUP TO BE REMOVED AS PART OF WORKS
- PROTECTIVE FENCING (INDICATIVE LOCATION ONLY)
- VETERAN TREES



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Project Originator Volume Location Type Role Number

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Website: www.portsmouthwater.co.uk
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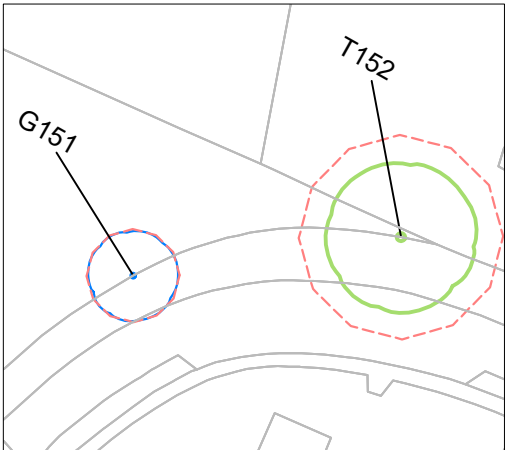
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Project Ref. No:	Sheet:	Scale:	Sheet Size:
HTR	26 of 40	1:1000	A3

Project Title:
HAVANT THICKET RESERVOIR

Drawing Title:
TREE PROTECTION PLAN SHEET 26 OF 40

Portsmouth Water Drawing Number:	Rev:
	P01.1



INSET - B

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REFER TO SHEET 26

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KEY (not to scale)

 CATEGORY A TREE

 CATEGORY B TREE

 CATEGORY U TREE

 CATEGORY C TREE

Diagram illustrating the Root Protection Area (RPA) around a tree. The RPA is defined as the area within which the tree's roots are protected, extending from the trunk to the edge of the root system.

T/G/H001	TREE/GROUP/HEDGE REFERENCE NUMBER
----------	-----------------------------------

TREE GROUP OR HEDGE - COLOUR ACCORDING TO BS CATEGORY

 PROPOSED WORKS

+ TREE TO BE REMOVED AS PART OF WORKS

 TREE AT RISK OF REMOVAL AS PART OF WORKS

 TREE GROUP TO BE REMOVED AS PART OF WORKS

 PROTECTIVE FENCING (INDICATIVE LOCATION ONLY)

VETERAN TREES

SCALE : N.T.S

SCALE : N.T.S

Figure 1 shows a schematic representation of the DNA template and the 120 bp DNA fragment. The DNA template is shown as a double helix with a red line indicating the path of the DNA fragment. The fragment is labeled 'DNA' and '120 bp'. A scale bar indicates 'SCALE : N.T.S'.

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Status:	B1
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Contractors Drawing Number:

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Project		Originator		Volume		Location		Type		Role		Number

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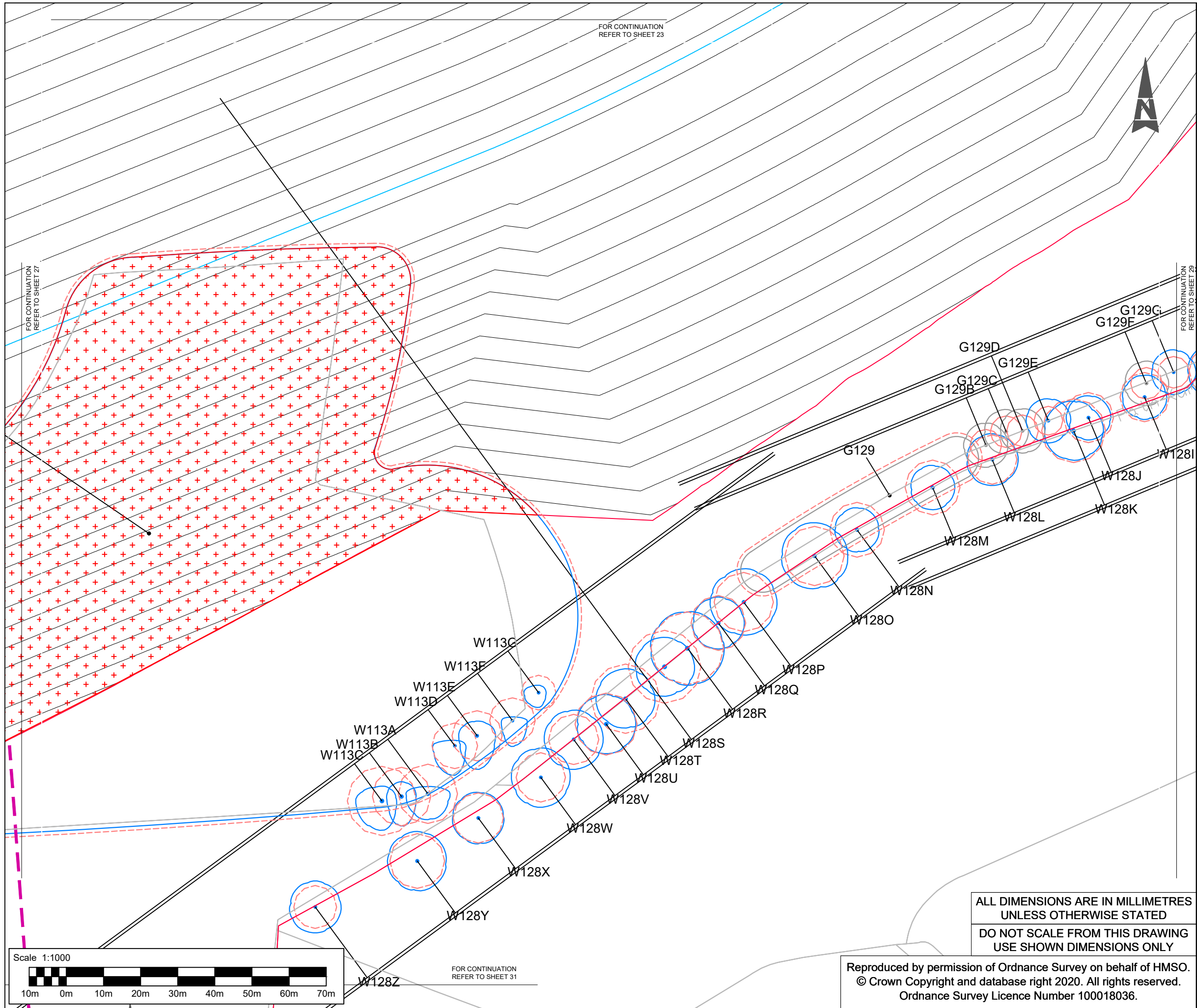


Project Ref. No: HTR	Sheet: 27 of 40	Scale: 1:1000	Sheet Size: A3
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Project Title: **HAVANT THICKET
RESERVOIR**

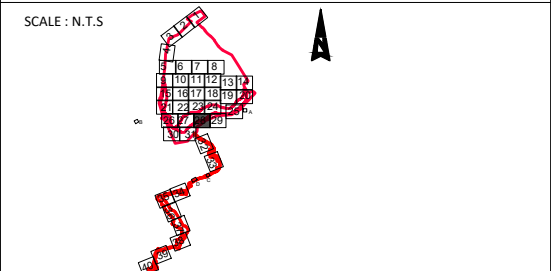
S	Drawing Title:
	TREE PROTECTION PLAN SHEET 27 OF 40

Portsmouth Water Drawing Number:	Rev: P01.1
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KEY (not to scale)

- CATEGORY A TREE
- CATEGORY B TREE
- CATEGORY U TREE
- CATEGORY C TREE
- ROOT PROTECTION AREA (RPA)
- T/G/H001 TREE/GROUP/HEDGE REFERENCE NUMBER
- TREE GROUP OR HEDGE - COLOUR ACCORDING TO BS CATEGORY
- PROPOSED WORKS
- TREE TO BE REMOVED AS PART OF WORKS
- TREE AT RISK OF REMOVAL AS PART OF WORKS
- TREE GROUP TO BE REMOVED AS PART OF WORKS
- PROTECTIVE FENCING (INDICATIVE LOCATION ONLY)
- VETERAN TREES



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Project Originator Volume Location Type Role Number

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Project Ref. No:	Sheet:	Scale:	Sheet Size:
HTR	28 of 40	1:1000	A3

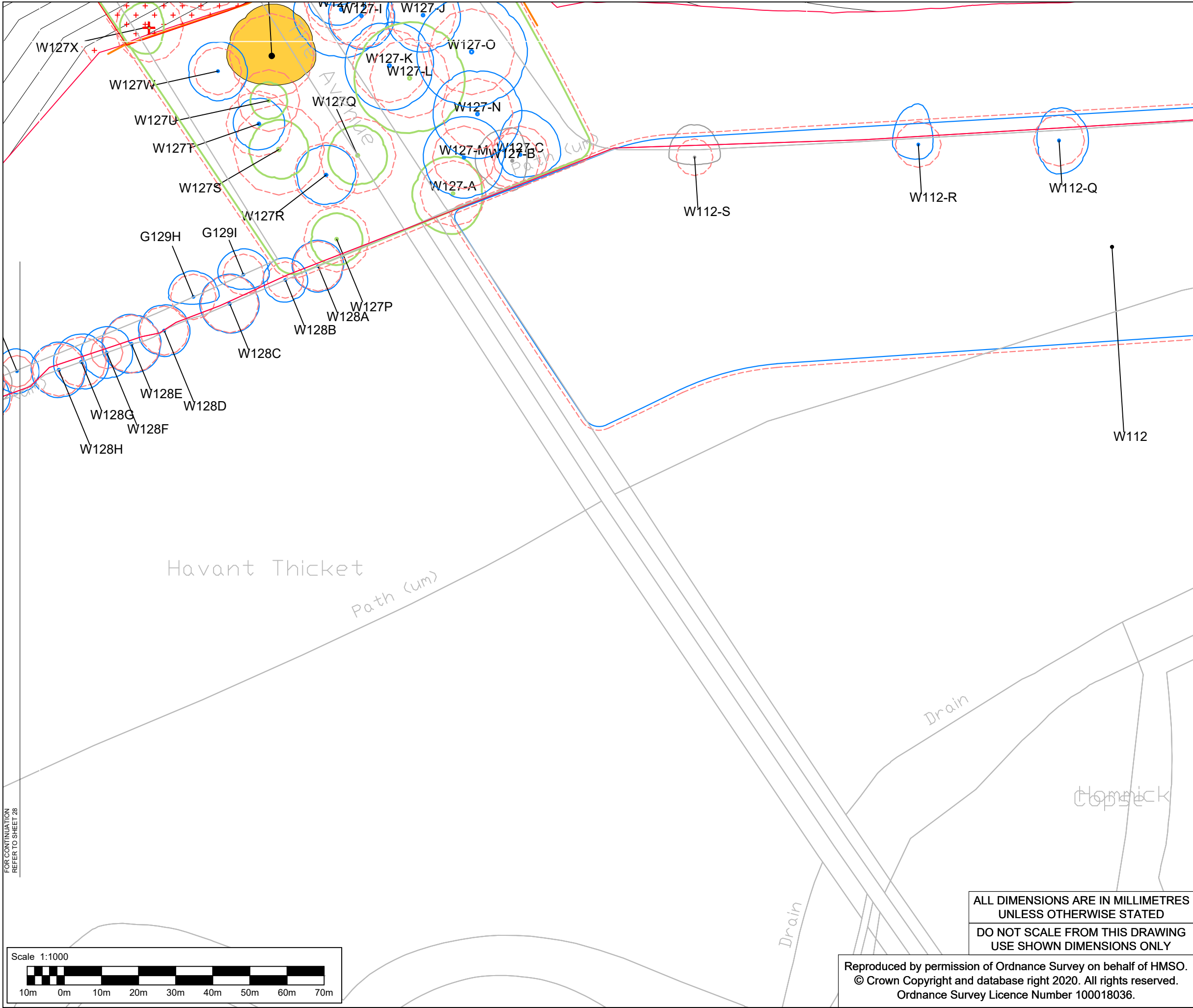
Project Title:
HAVANT THICKET RESERVOIR

Drawing Title:
TREE PROTECTION PLAN SHEET 28 OF 40

Portsmouth Water Drawing Number:	Rev:
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KEY (not to scale)

- CATEGORY A TREE
- CATEGORY B TREE
- CATEGORY U TREE
- CATEGORY C TREE
- ROOT PROTECTION AREA (RPA)
- T/G/H001 TREE/GROUP/HEDGE REFERENCE NUMBER
- TREE GROUP OR HEDGE - COLOUR ACCORDING TO BS CATEGORY
- PROPOSED WORKS
- TREE TO BE REMOVED AS PART OF WORKS
- TREE AT RISK OF REMOVAL AS PART OF WORKS
- TREE GROUP TO BE REMOVED AS PART OF WORKS
- PROTECTIVE FENCING (INDICATIVE LOCATION ONLY)
- VETERAN TREES

SCALE : N.T.S.

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Project	Originator	Volume	Location	Type	Role	Number

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Project Ref. No: HTR	Sheet: 29 of 40	Scale: 1:1000	Sheet Size: A3
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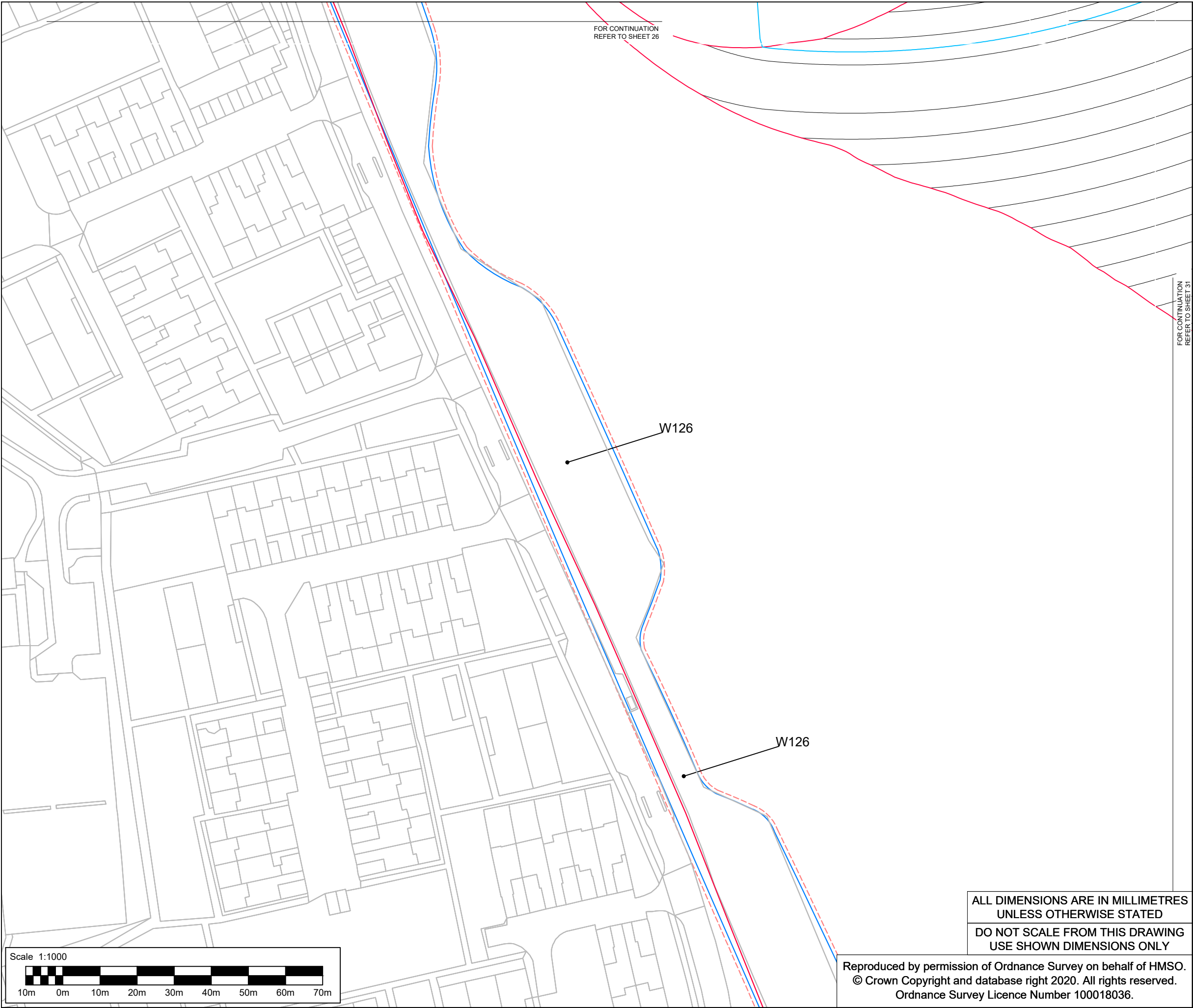
Project Title:
HAVANT THICKET RESERVOIR

Drawing Title:
**TREE PROTECTION PLAN
SHEET 29 OF 40**

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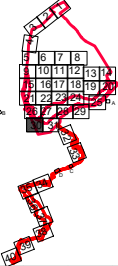


FOR CONTINUATION
REFER TO SHEET 26

FOR CONTINUATION
REFER TO SHEET 31

- KEY** (not to scale)
- CATEGORY A TREE
 - CATEGORY B TREE
 - CATEGORY U TREE
 - CATEGORY C TREE
 - ROOT PROTECTION AREA (RPA)
 - T/G/H001 TREE/GROUP/HEDGE REFERENCE NUMBER
 - TREE GROUP OR HEDGE - COLOUR ACCORDING TO BS CATEGORY
 - PROPOSED WORKS
 - TREE TO BE REMOVED AS PART OF WORKS
 - TREE AT RISK OF REMOVAL AS PART OF WORKS
 - TREE GROUP TO BE REMOVED AS PART OF WORKS
 - PROTECTIVE FENCING (INDICATIVE LOCATION ONLY)
 - VETERAN TREES

SCALE : N.T.S



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Project		Originator		Volume		Location Type Role Number

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Project Ref. No: HTR	Sheet: 30 of 40	Scale: 1:1000	Sheet Size: A3
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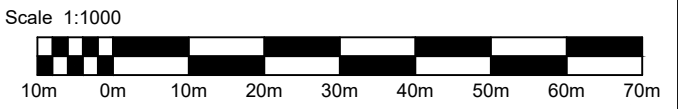
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Drawing Title: TREE PROTECTION PLAN SHEET 30 OF 40
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G114



KEY (not to scale)

- CATEGORY A TREE
- CATEGORY B TREE
- CATEGORY U TREE
- CATEGORY C TREE
- ROOT PROTECTION AREA (RPA)
- T/G/H001 TREE/GROUP/HEDGE REFERENCE NUMBER
- TREE GROUP OR HEDGE - COLOUR ACCORDING TO BS CATEGORY
- PROPOSED WORKS
- TREE TO BE REMOVED AS PART OF WORKS
- TREE AT RISK OF REMOVAL AS PART OF WORKS
- TREE GROUP TO BE REMOVED AS PART OF WORKS
- PROTECTIVE FENCING (INDICATIVE LOCATION ONLY)
- VETERAN TREES

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Project	Originator	Volume	Location	Type	Role
					Number

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Fax: Havant (023) 9245 3632
Website: www.portsmouthwater.co.uk
Registered Office: PO Box 8 West Street
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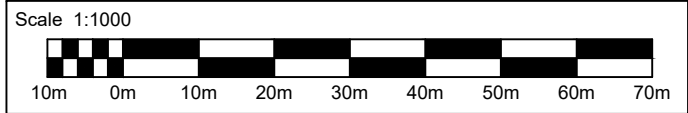
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HTR	31 of 40	1:1000	A3

Project Title:
HAVANT THICKET RESERVOIR

Drawing Title:
TREE PROTECTION PLAN SHEET 31 OF 40

Portsmouth Water Drawing Number:	Rev:
	P01.1

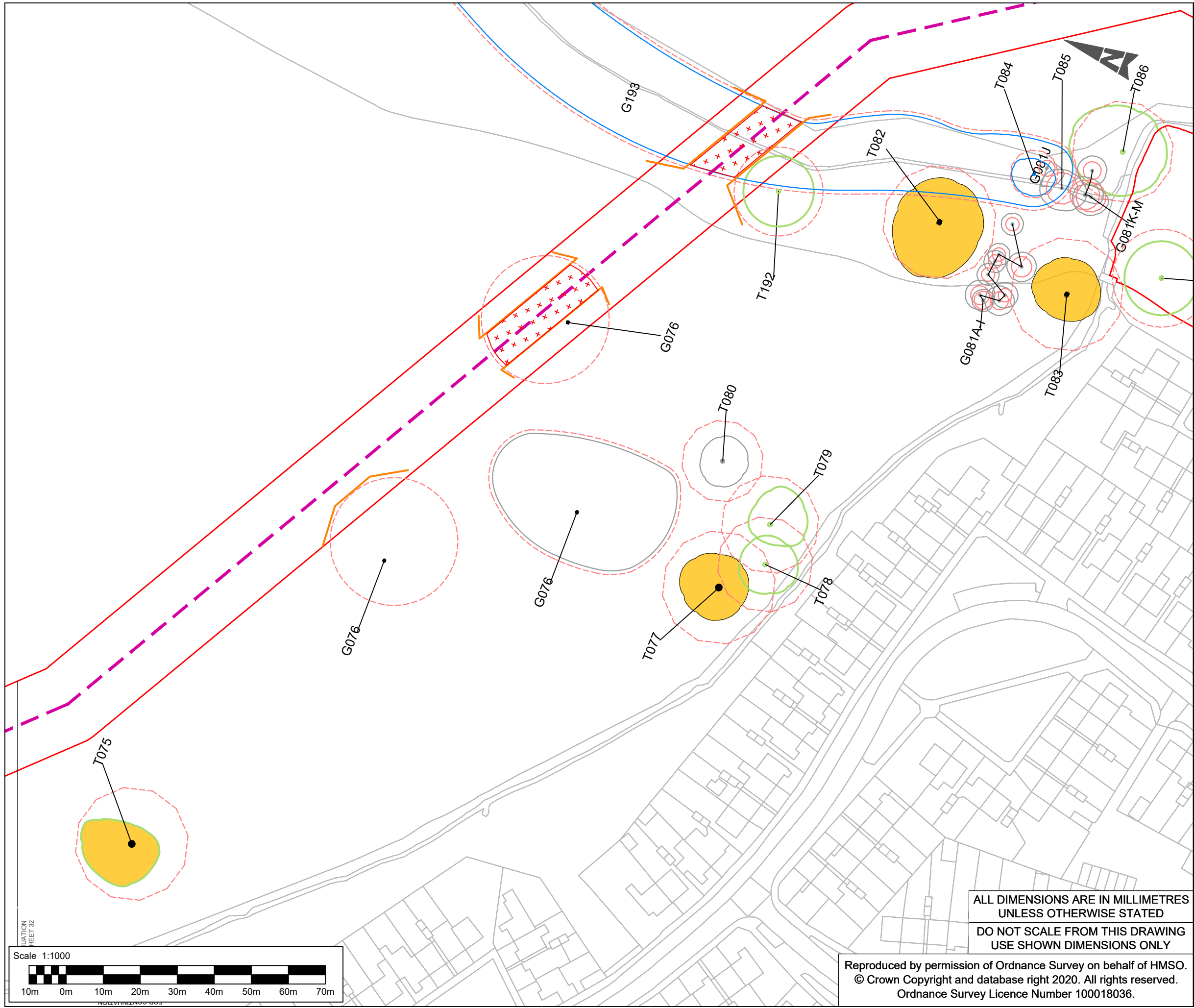
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REFER TO SHEET 30



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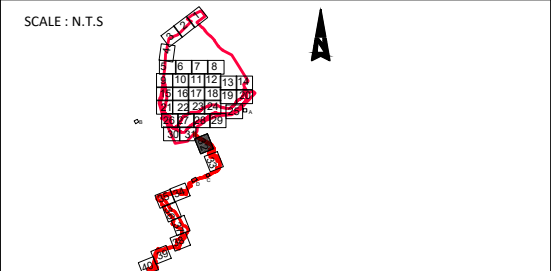
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FOR CONTINUATION
REFER TO SHEET 32



KEY (not to scale)

- CATEGORY A TREE
- CATEGORY B TREE
- CATEGORY U TREE
- CATEGORY C TREE
- ROOT PROTECTION AREA (RPA)
- T/G/H001 TREE/GROUP/HEDGE REFERENCE NUMBER
- TREE GROUP OR HEDGE - COLOUR ACCORDING TO BS CATEGORY
- PROPOSED WORKS
- TREE TO BE REMOVED AS PART OF WORKS
- TREE AT RISK OF REMOVAL AS PART OF WORKS
- TREE GROUP TO BE REMOVED AS PART OF WORKS
- PROTECTIVE FENCING (INDICATIVE LOCATION ONLY)
- VETERAN TREES



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Rev. Status	Drn By	Ckd By	Rev By	Auth By	Description	Date

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Contractors Drawing Number:
HTR - ATK - RZ - RE - DR - L - 1132
Project Originator Volume Location Type Role Number

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Website: www.portsmouthwater.co.uk
Registered Office: PO Box 8 West Street
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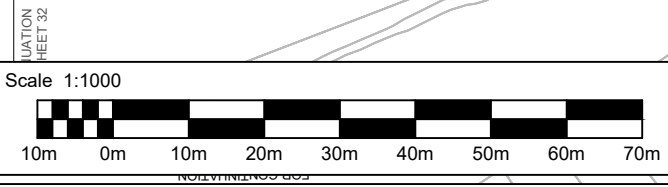
Portsmouth Water

Project Ref. No:	Sheet:	Scale:	Sheet Size:
HTR	32 of 40	1:1000	A3

Project Title:
HAVANT THICKET RESERVOIR

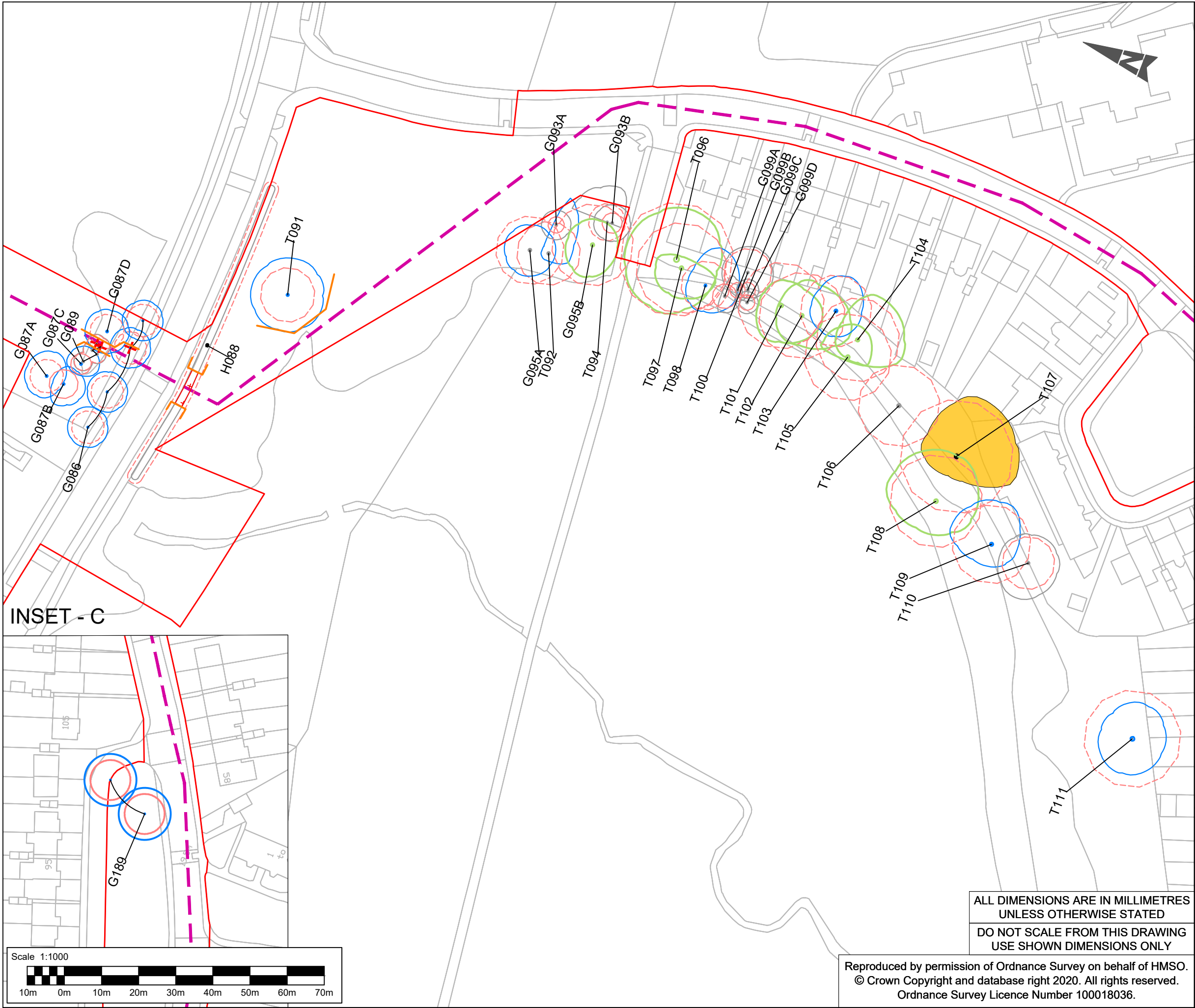
Drawing Title:
TREE PROTECTION PLAN SHEET 32 OF 40

Portsmouth Water Drawing Number:	Rev:
	P01.1

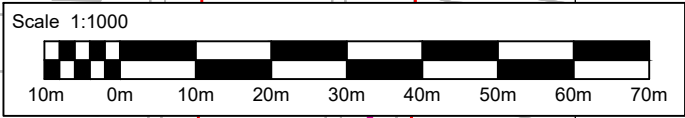
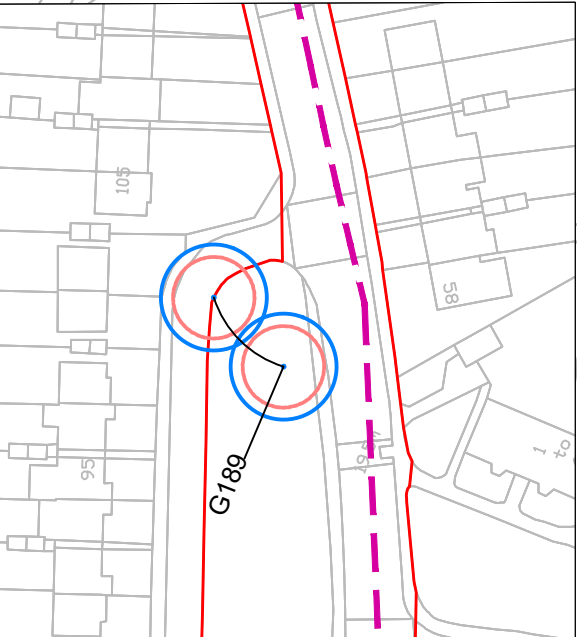


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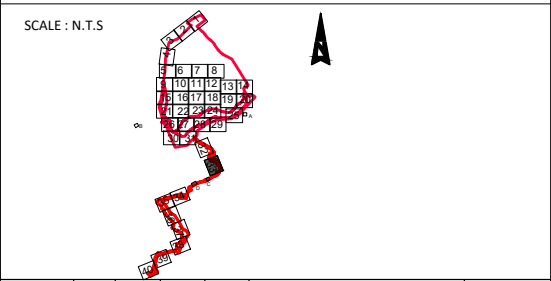


INSET - C



KEY (not to scale)

- CATEGORY A TREE
- CATEGORY B TREE
- CATEGORY U TREE
- CATEGORY C TREE
- ROOT PROTECTION AREA (RPA)
- T/G/H001 TREE/GROUP/HEDGE REFERENCE NUMBER
- TREE GROUP OR HEDGE - COLOUR ACCORDING TO BS CATEGORY
- PROPOSED WORKS
- TREE TO BE REMOVED AS PART OF WORKS
- TREE AT RISK OF REMOVAL AS PART OF WORKS
- TREE GROUP TO BE REMOVED AS PART OF WORKS
- PROTECTIVE FENCING (INDICATIVE LOCATION ONLY)
- VETERAN TREES



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Drawing Suitability:	Status:
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Contractors Drawing Number:
HTR - ATK - RZ - RE - DR - L -1133
Project Originator Volume Location Type Role Number

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Project Ref. No:	Sheet:	Scale:	Sheet Size:
HTR	33 of 40	1:1000	A3

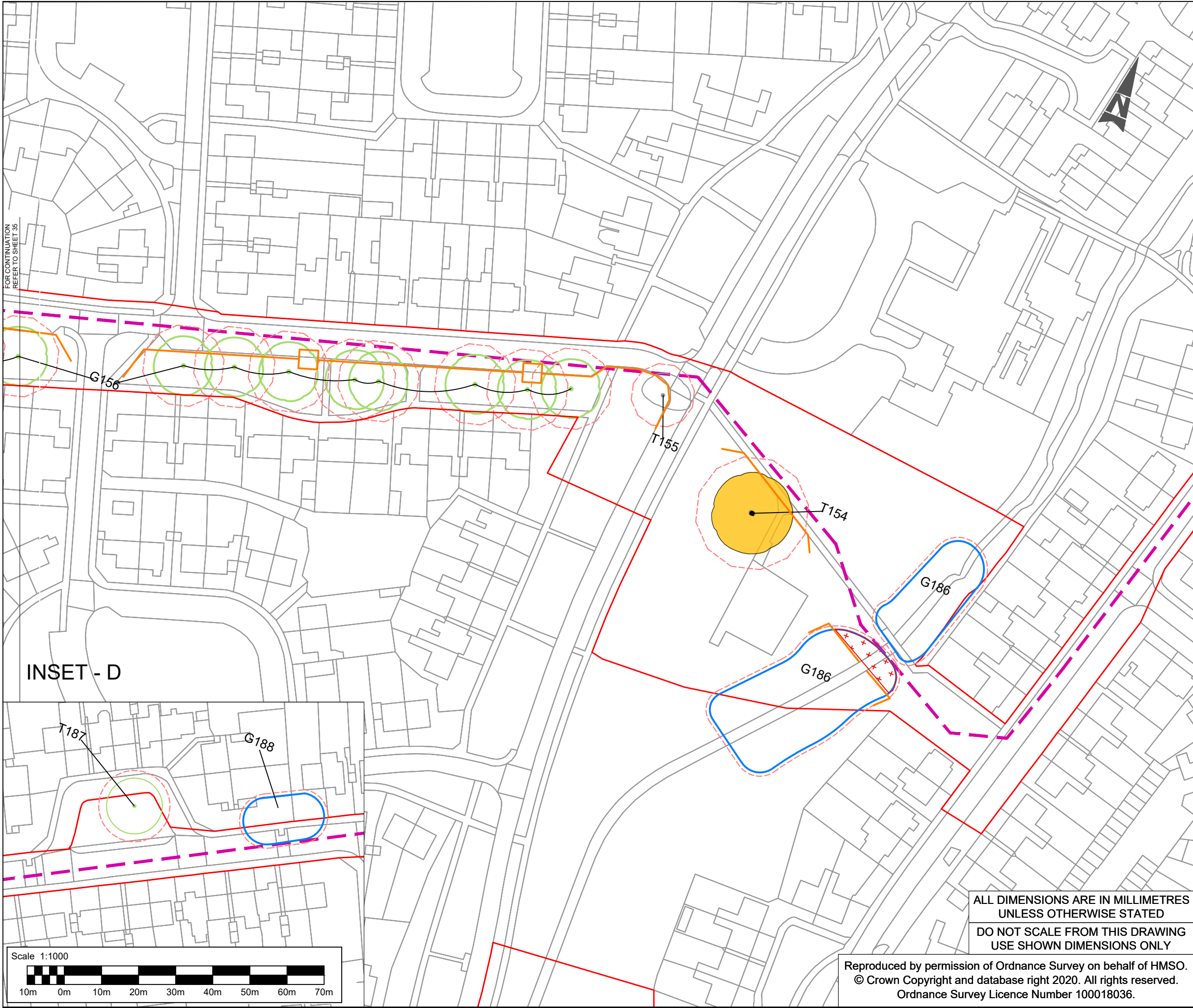
Project Title:
HAVANT THICKET RESERVOIR

Drawing Title:
TREE PROTECTION PLAN SHEET 33 OF 40

Portsmouth Water Drawing Number:	Rev:
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KEY (not to scale)

- CATEGORY A TREE
- CATEGORY B TREE
- CATEGORY U TREE
- CATEGORY C TREE
- ROOT PROTECTION AREA (RPA)
- T/G/H001 TREE/GROUP/HEDGE REFERENCE NUMBER
- TREE GROUP OR HEDGE - COLOUR ACCORDING TO BS CATEGORY
- PROPOSED WORKS
- TREE TO BE REMOVED AS PART OF WORKS
- TREE AT RISK OF REMOVAL AS PART OF WORKS
- TREE GROUP TO BE REMOVED AS PART OF WORKS
- PROTECTIVE FENCING (INDICATIVE LOCATION ONLY)
- VETERAN TREES

SCALE : N.T.S.

P01.1	SS	TD	LJB	LJB	First Issue	04/09/20
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Contractors Drawing Number:

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Project | Originator | Volume | Location | Type | Role | Number

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Project Ref. No:	Sheet:	Scale:	Sheet Size:
HTR	34 of 40	1:1000	A3

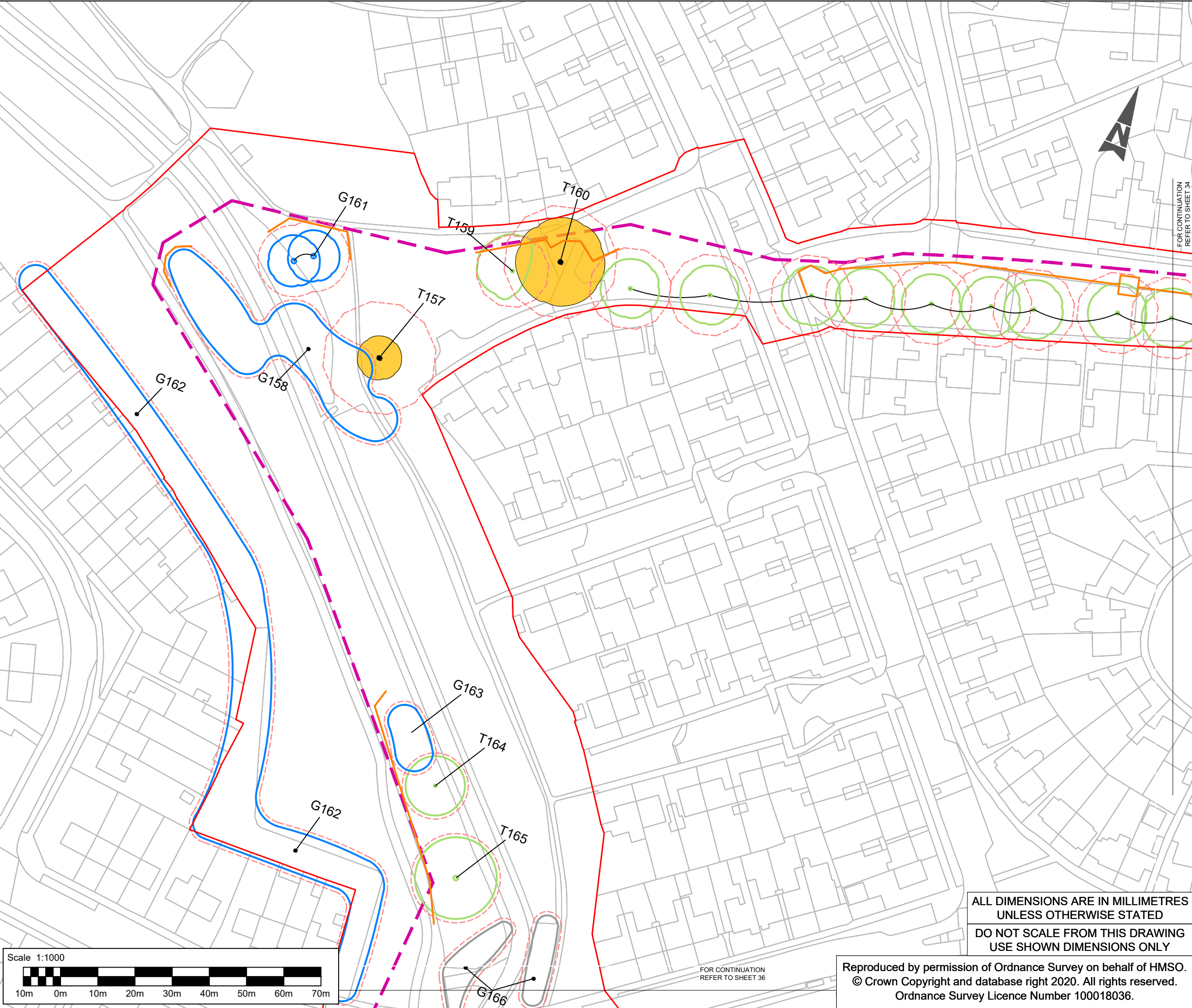
Project Title:

HAVANT THICKET RESERVOIR

Drawing Title:

TREE PROTECTION PLAN
SHEET 34 OF 40

Portsmouth Water Drawing Number:	Rev:
	P01.1



KEY (not to scale)

- CATEGORY A TREE
- CATEGORY B TREE
- CATEGORY U TREE
- CATEGORY C TREE
- ROOT PROTECTION AREA (RPA)
- T/G/H001 TREE/GROUP/HEDGE REFERENCE NUMBER
- TREE GROUP OR HEDGE - COLOUR ACCORDING TO BS CATEGORY
- PROPOSED WORKS
- TREE TO BE REMOVED AS PART OF WORKS
- TREE AT RISK OF REMOVAL AS PART OF WORKS
- TREE GROUP TO BE REMOVED AS PART OF WORKS
- PROTECTIVE FENCING (INDICATIVE LOCATION ONLY)
- VETERAN TREES

SCALE : N.T.S.

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Contractors Drawing Number:

HTR - ATK - RZ - RE - DR - L -1135
Project | Originator | Volume | Location | Type | Role | Number

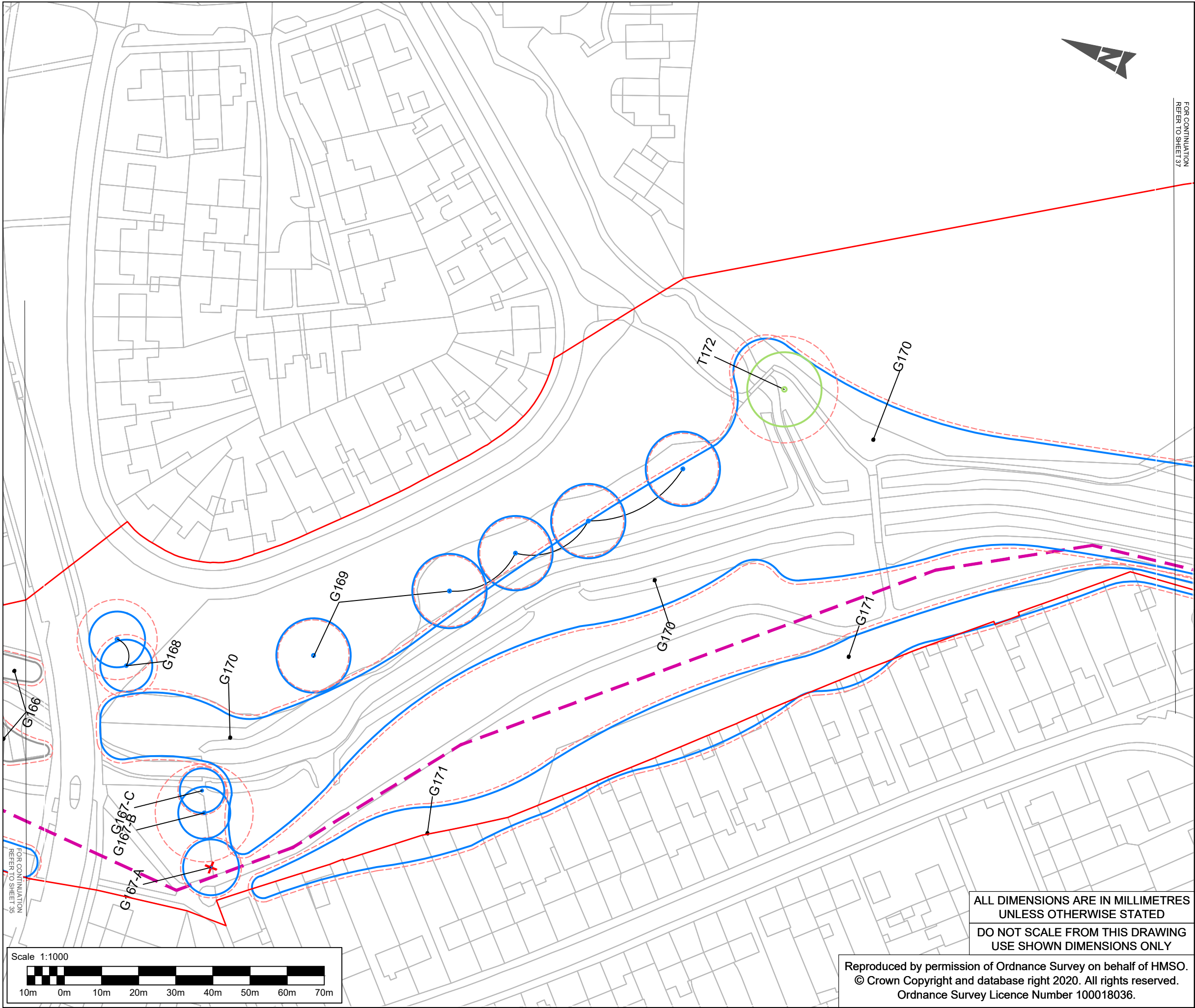
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Project Ref. No: HTR	Sheet: 35 of 40	Scale: 1:1000	Sheet Size: A3
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Project Title:
HAVANT THICKET RESERVOIR

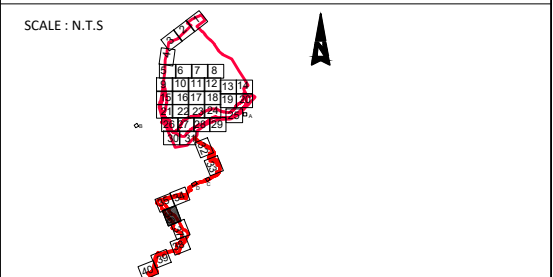
Drawing Title:
**TREE PROTECTION PLAN
SHEET 35 OF 40**

Portsmouth Water Drawing Number:	Rev: P01.1
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KEY (not to scale)

- CATEGORY A TREE
- CATEGORY B TREE
- CATEGORY U TREE
- CATEGORY C TREE
- ROOT PROTECTION AREA (RPA)
- T/G/H001 TREE/GROUP/HEDGE REFERENCE NUMBER
- TREE GROUP OR HEDGE - COLOUR ACCORDING TO BS CATEGORY
- PROPOSED WORKS
- TREE TO BE REMOVED AS PART OF WORKS
- TREE AT RISK OF REMOVAL AS PART OF WORKS
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- VETERAN TREES



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Project Originator Volume Location Type Role Number

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Project Ref. No:	Sheet:	Scale:	Sheet Size:
HTR	36 of 40	1:1000	A3

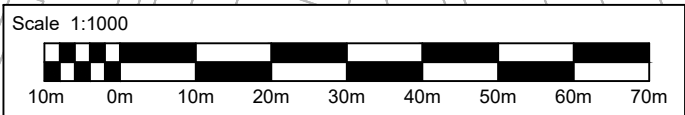
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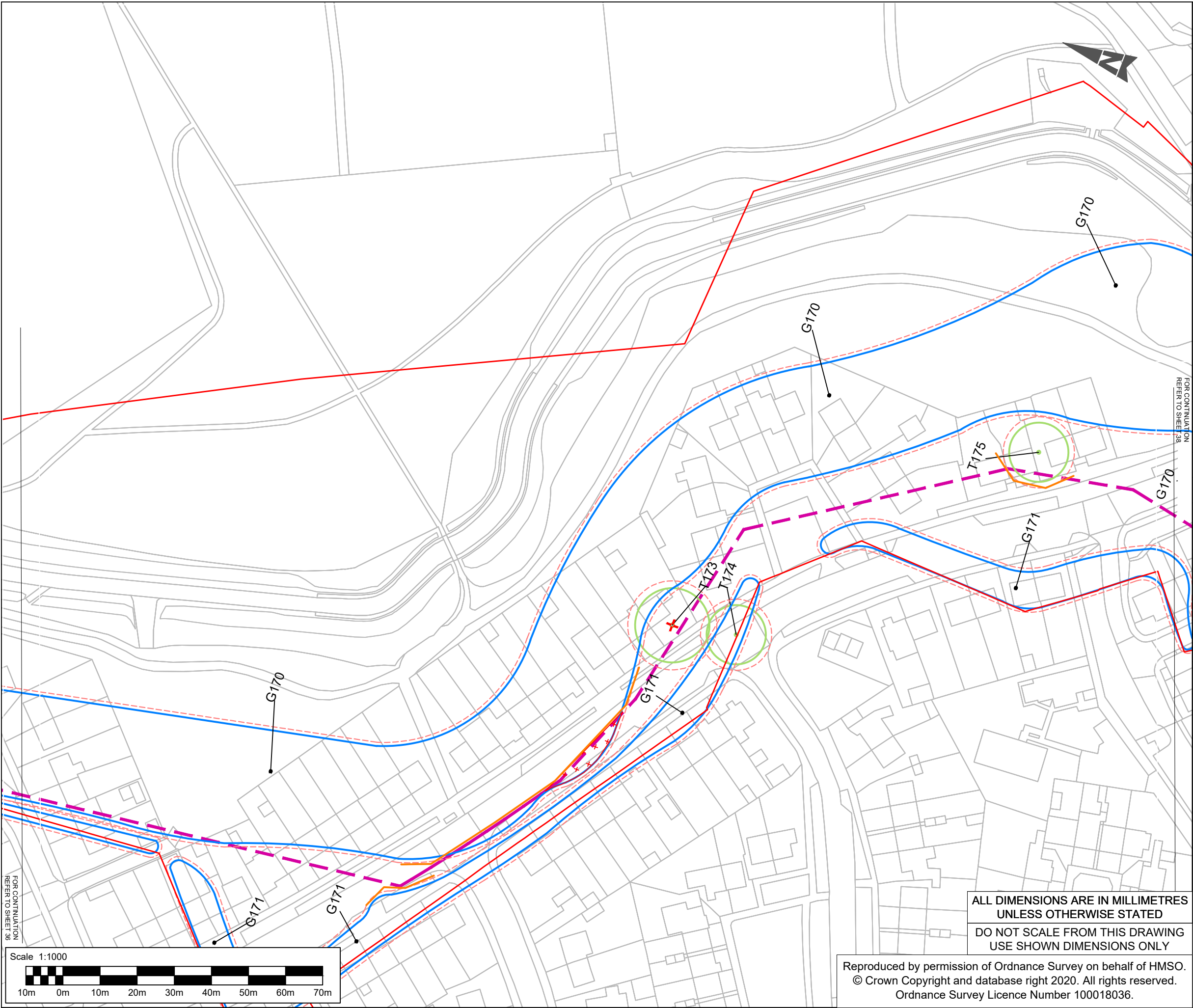
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TREE PROTECTION PLAN SHEET 36 OF 40

Portsmouth Water Drawing Number:	Rev:
	P01.1

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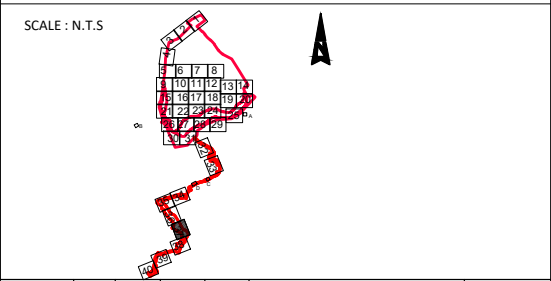
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KEY (not to scale)

- CATEGORY A TREE
- CATEGORY B TREE
- CATEGORY U TREE
- CATEGORY C TREE
- ROOT PROTECTION AREA (RPA)
- T/G/H001 TREE/GROUP/HEDGE REFERENCE NUMBER
- TREE GROUP OR HEDGE - COLOUR ACCORDING TO BS CATEGORY
- PROPOSED WORKS
- TREE TO BE REMOVED AS PART OF WORKS
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- VETERAN TREES



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Project Originator Volume Location Type Role Number

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Project Ref. No:	Sheet:	Scale:	Sheet Size:
HTR	37 of 40	1:1000	A3

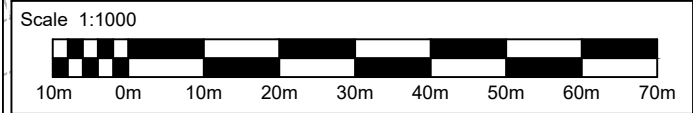
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HAVANT THICKET RESERVOIR

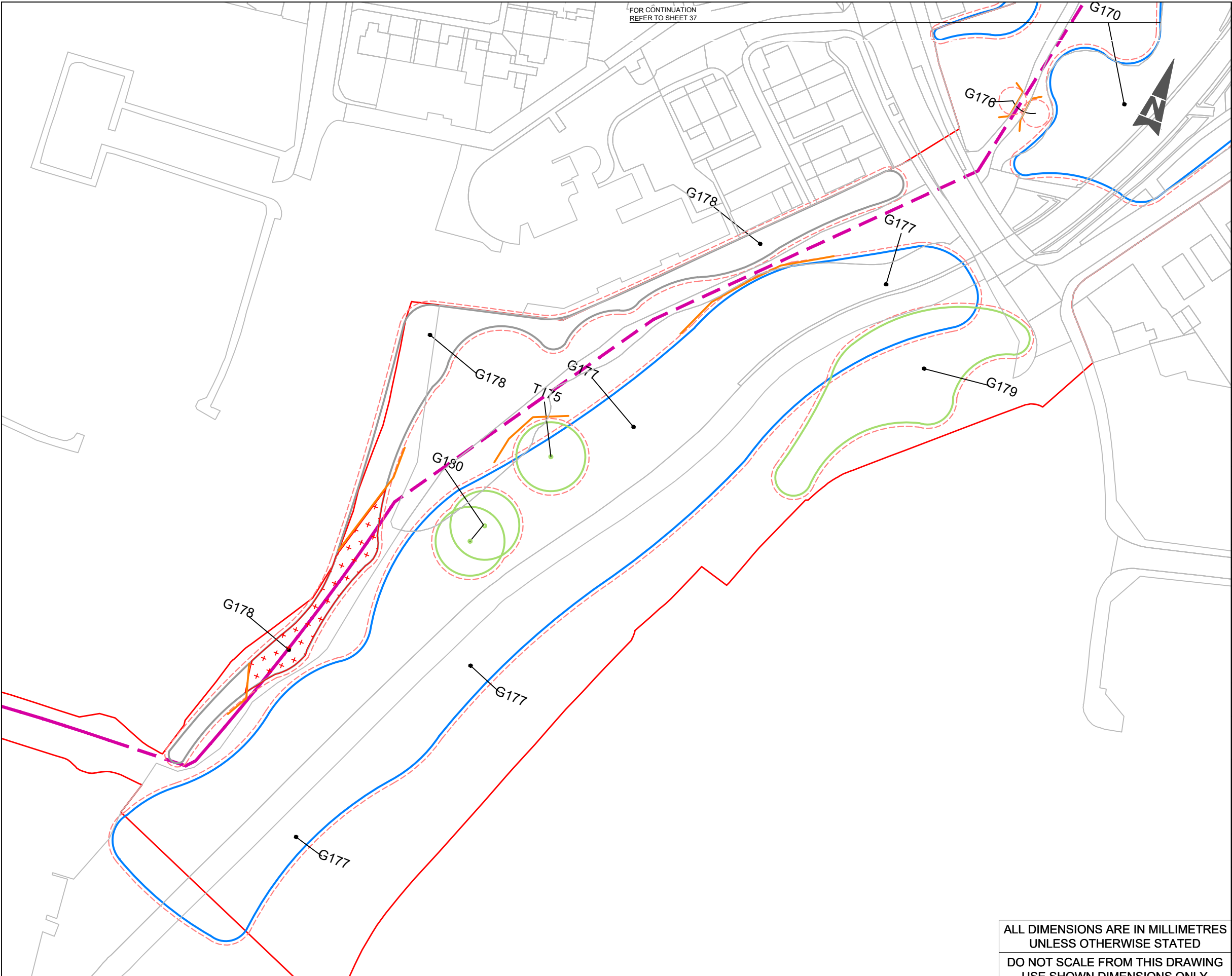
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TREE PROTECTION PLAN SHEET 37 OF 40

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KEY (not to scale)

- CATEGORY A TREE
- CATEGORY B TREE
- CATEGORY U TREE
- CATEGORY C TREE
- ROOT PROTECTION AREA (RPA)
- T/G/H001 TREE/GROUP/HEDGE REFERENCE NUMBER
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- TREE GROUP TO BE REMOVED AS PART OF WORKS
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- VETERAN TREES

SCALE : N.T.S.

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Contractors Drawing Number:					
HTR	- ATK	- RZ	- RE	- DR	- L -1138
Project	Originator	Volume	Location	Type	Role Number

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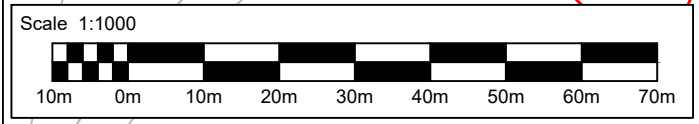
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Project Ref. No:	Sheet:	Scale:	Sheet Size:
HTR	38 of 40	1:1000	A3

Project Title:
HAVANT THICKET RESERVOIR

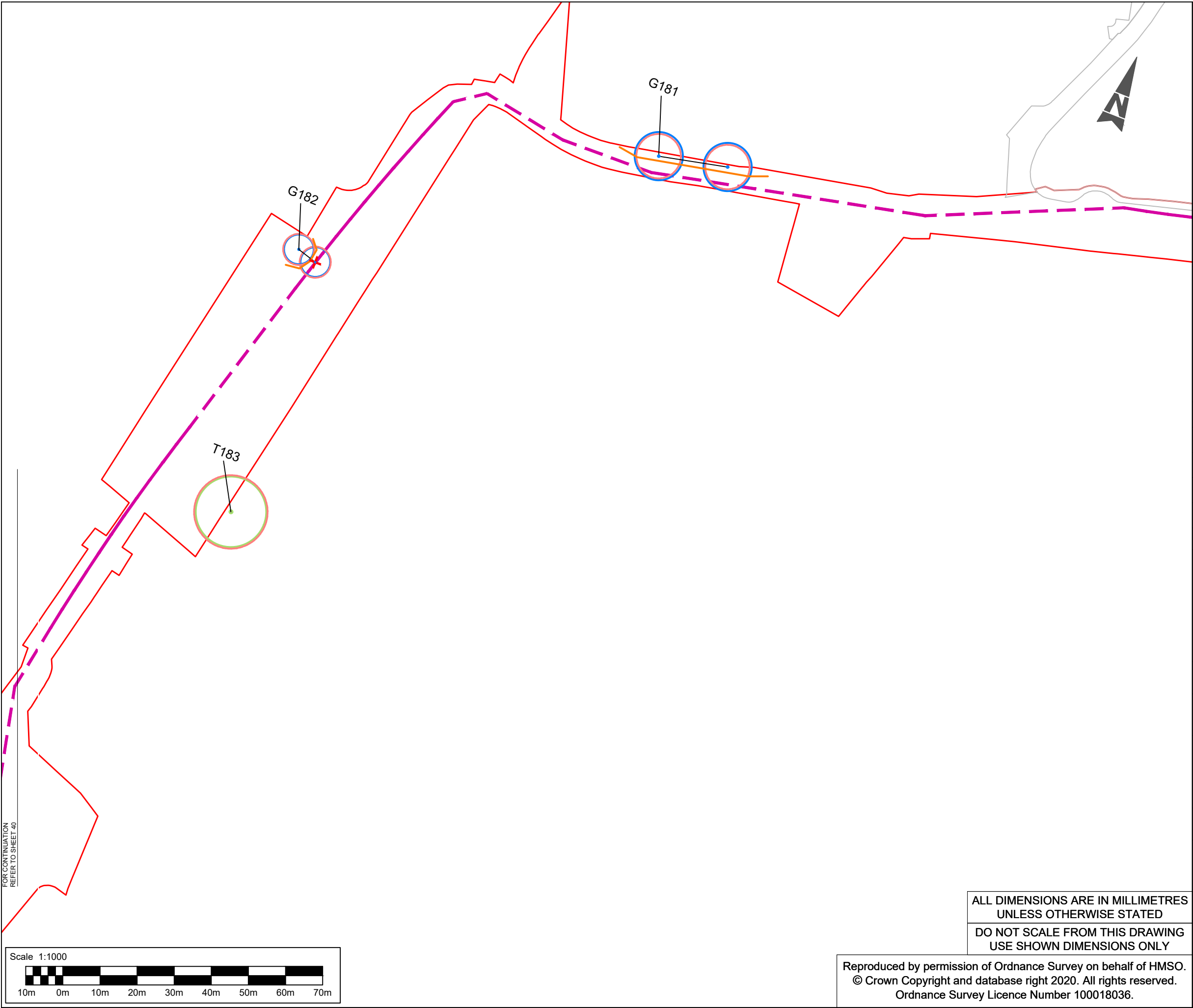
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TREE PROTECTION PLAN SHEET 38 OF 40

Portsmouth Water Drawing Number:	Rev:
	P01.1



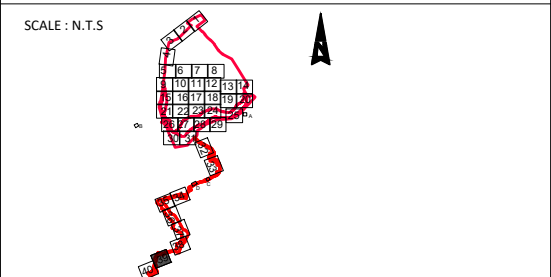
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KEY (not to scale)

- CATEGORY A TREE
- CATEGORY B TREE
- CATEGORY U TREE
- CATEGORY C TREE
- ROOT PROTECTION AREA (RPA)
- T/G/H001 TREE/GROUP/HEDGE REFERENCE NUMBER
- TREE GROUP OR HEDGE - COLOUR ACCORDING TO BS CATEGORY
- PROPOSED WORKS
- TREE TO BE REMOVED AS PART OF WORKS
- TREE AT RISK OF REMOVAL AS PART OF WORKS
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- VETERAN TREES



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Contractors Drawing Number:						
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Project	Originator	Volume	Location	Type	Role	Number

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Project Ref. No:	Sheet:	Scale:	Sheet Size:
HTR	39 of 40	1:1000	A3

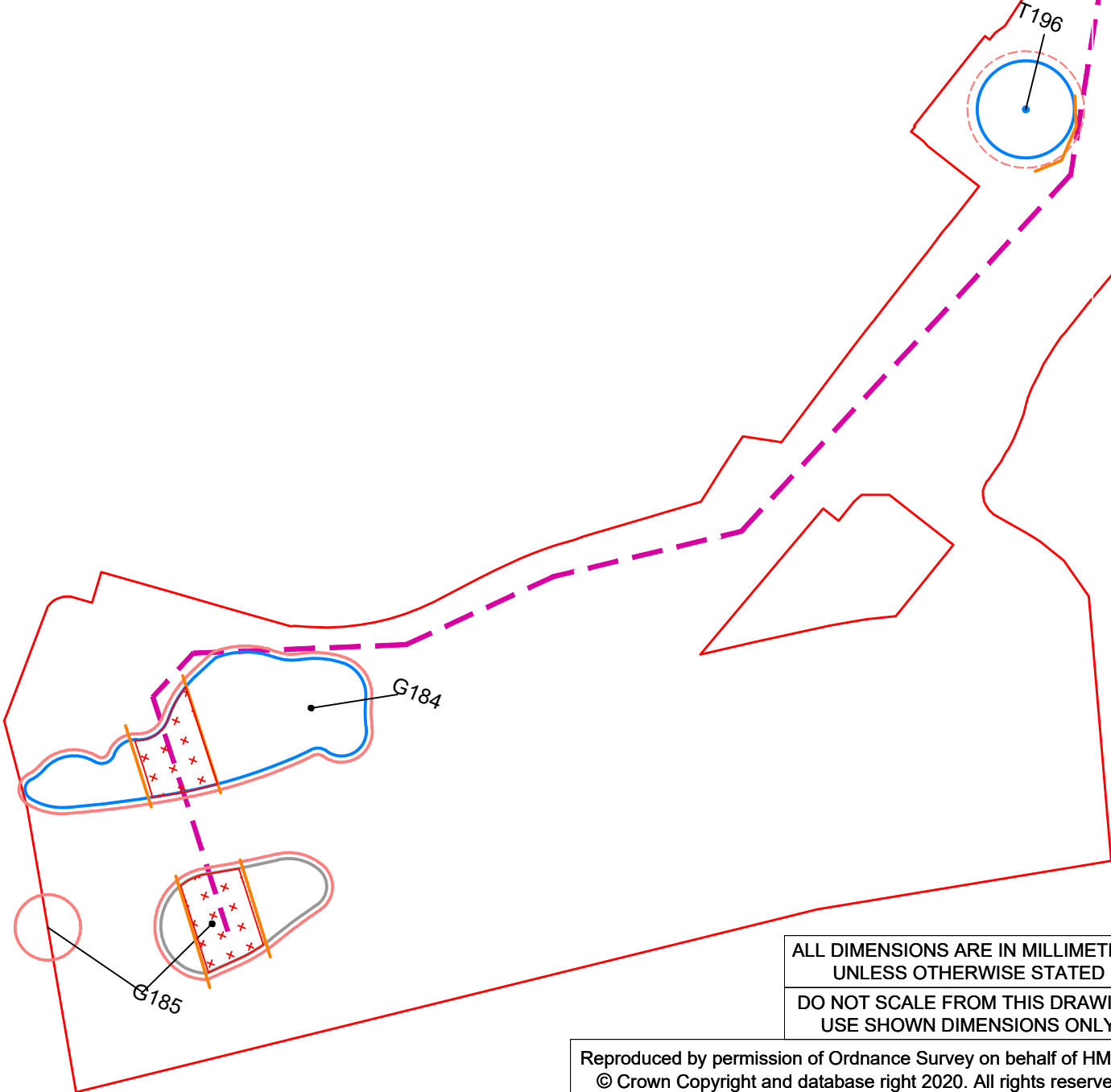
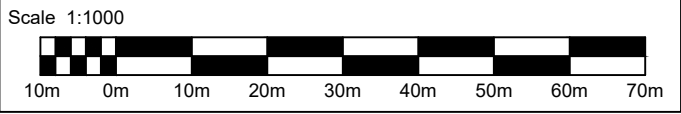
Project Title:
HAVANT THICKET RESERVOIR

Drawing Title:
TREE PROTECTION PLAN SHEET 39 OF 40

Portsmouth Water Drawing Number:	Rev:
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KEY (not to scale)

- CATEGORY A TREE
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- CATEGORY U TREE
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- T/G/H001 TREE/GROUP/HEDGE REFERENCE NUMBER
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- VETERAN TREES

SCALE : N.T.S.

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Contractors Drawing Number:

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Project		Originator		Volume		Location		Type		Role		Number

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Project Ref. No: HTR	Sheet: 40 of 40	Scale: 1:1000	Sheet Size: A3
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Project Title:
HAVANT THICKET RESERVOIR

Drawing Title:
**TREE PROTECTION PLAN
SHEET 40 OF 40**

Portsmouth Water Drawing Number:	Rev: P01.1
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