

Kingmoor

Wrexham Industrial Estate

Tree Constraints Report

Report Ref: 274/R/100

May 2023

MDLandscape

Cover note

The following report has been prepared for the Main Application, reference P/2023/0280. We are submitting the report in support of a standalone application for an electricity substation to be located on the site.

Per the Site Location Plan (copy overpage) the substation affects only a small area of the surveyed site of the Main Application which can be seen in the appended Tree Constraints Plan, Sheet 1 of 8.

The relevant trees are; Individual tree -T45 and group – G10.

The Cover Letter to the application sets out our reason for support of the standalone application ahead of the Main Application for consideration.

Plan Red

8.8.23





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Prepared by:

Marianne Dobson CMLI, BA Hons, FdScArb, MArborA

Lantra certified in Professional Tree Inspection

Landscape Architect and Arboricultural Consultant

mdlandscape

6 Kinderton Close

High Legh

Knutsford

Cheshire

WA16 6LZ

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mdlandscape



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1 INTRODUCTION

1.1 Scope of survey

- 1.1.1 MDLandscape has been instructed by FI-REM Ltd to conduct an arboricultural survey of trees at Kingmoor, Wrexham Industrial Estate, in the context of potential development. The survey was requested to review the condition and status of trees and in relation to proposed development for new warehouse & distribution units, office accommodation, service yards, parking, access areas and landscaping.
- 1.1.2 Using professional judgement, where trees were encountered with a stem diameter at breast height (DBH) over 1.25m, these were also recorded in more detail due to potential for roots to extend beyond 15m. The Ancient Tree Forum¹ recommends an RPA radius of 15 times the diameter for veteran trees, or 5m beyond the crown, without a cap of 15m.
- 1.1.3 The trees assessed are shown on shown in the Tree Constraints Plans 274/T/100 to 118 (Figures 3.0 to 3.18).

1.2 Survey methodology

- 1.2.1 The survey was carried out in May 2023 and undertaken in mild and dry weather conditions. Inspection was carried out from ground level by M Dobson FdScArb, MArborA and assisted by K Berry. Trees were assessed in accordance with BS5837:2012 *Trees in relation to design, demolition and construction – Recommendations*. Investigation to identify extent of cavities or decay detection was not undertaken, but further detailed investigation may be recommended where appropriate.
- 1.2.2 The survey method was undertaken as follows:
- A topographical survey was available to verify tree locations as shown in Figure 2.0. Trees potentially affected by the development within groups and woodland with a DBH greater than 150mm were plotted rather than the 75mm DBH required in BS5837:2012²;
 - The trees were plotted as individuals, groups and woodland, with areas of scrub identified as groups and hedgerows also surveyed;
 - Trees considered to be potential veteran trees are noted on the tree constraints plans and the schedule with the suffix (V);
 - Girths of potential veteran trees, were recorded with a standard tape measure and this noted separately in the tree data schedule;
 - Crown spreads of individual trees in the detailed survey areas were measured to four cardinal points with a Disto laser distance measure and measurements noted to the nearest 0.5m and canopy

¹ Root protection areas for veteran trees: part 2; [Summer-2018-Root-protection-areas-part-2-Jim-Mullholland-Jill-Butler.pdf \(ancienttreeforum.co.uk\)](https://www.ancienttreeforum.co.uk/wp-content/uploads/2018/06/Summer-2018-Root-protection-areas-part-2-Jim-Mullholland-Jill-Butler.pdf)

² Clause 4.2.4 of BS5837:2012 states that *In the case of woodlands or substantial tree groups, only individual trees with stem diameters greater than 150mm usually need to be plotted.*

extents of woodland and groups were noted. Where access for inspection was impeded, Bluesky aerial imagery was used to estimate crown and canopy extents;

- Height measurements were taken using clinometers and a Disto laser distance measure and tree diameter measurements taken using a calibrated specialist diameter tape. Where this was not possible, heights and diameter measurements were estimated; and
- Where access to determine exact location was impeded, the measurements were estimated.

1.2.3 The assessment identifies the trees potentially affected by development and discusses their suitability for retention on site. The assessment also identifies trees that are undesirable to retain because of structural or other defects, trees that can be retained with an acceptable level of risk in their current location and the measures that are required to ensure their long-term retention.

1.2.4 The British Standard recognises many additional factors will ultimately determine changes to the site, for example redevelopment or natural physical changes. Information in this report is presented in order to allow an informed judgement to be made on tree retention and removal and should not be interpreted rigidly.

1.2.5 This report includes the following:

- A schedule of all trees located within, or in close proximity to the survey and assessment area shown in Figure 1.0 noting where appropriate:
 - o Tree tag number and whether an individual tree, a group, a woodland or a hedge;
 - o Tree protection status or designation;
 - o Species type stating full common and latin name where identifiable;
 - o Height in metres and height of crown clearance in metres;
 - o Stem diameter at-breast-height (dbh) in millimetres;
 - o Crown spread to four cardinal points in metres and canopy extents to woodland and groups;
 - o Maturity – young, semi-mature; middle age; mature, over mature;
 - o Condition – good, fair, poor, veteran;
 - o Comments on physiological and structural form, condition, health and significant defects;
 - o Tree quality category as detailed in Table 1.0;
 - o Radius of the root protection area (RPA) recorded as a circle centred on the base of the stem or to group or woodland extents;
 - o Management recommendations; and
 - o Estimated remaining contribution in years – less than 10, 10-20, 20-40 and over 40.
- An assessment of trees, based on Table 1.0 Cascade chart for tree quality assessment as reproduced from *BS 5837:2012* has been undertaken and trees have been categorised into one of four categories: A, B, C or U and illustrated in the Tree Constraints Plans 274/T/100-118 inclusive (Figures 3.0 to 3.18);
- Locations of the individual trees are mapped, indicating their category and RPA;
- An assessment of arboricultural constraints to current site operations and future proposed development and operations; and
- Advice on the management of trees based on their current condition and location.

- 1.2.6 Under BS 5837:2012 trees and groups are objectively assigned a quality category designed to quantify their value. Table 1.0 presents a summary of the categories presented in the British Standard. The full table has been reproduced.

Table 1 Cascade chart for tree quality assessment

Category and definition	Criteria (including subcategories where appropriate)	Identification on plan
Trees unsuitable for retention (see Note)		
Category U Those in such a condition that they cannot realistically be retained as living trees in the context of the current land use for longer than 10 years	- Trees that have a serious, irremediable, structural defect, such that their early loss is expected due to collapse, including those that will become unviable after removal of other category U trees (e.g. where, for whatever reason, the loss of companion shelter cannot be mitigated by pruning) - Trees that are dead or are showing signs of significant, immediate, and irreversible overall decline - Trees infected with pathogens of significance to the health and/or safety of other trees nearby, or very low quality trees suppressing adjacent trees of better quality <i>NOTE Category U trees can have existing or potential conservation value which it might be desirable to preserve; see 4.5.7.</i>	See Table 2
1 Mainly arboricultural qualities 2 Mainly landscape qualities 3 Mainly cultural values, including conservation		
Trees to be considered for retention		
Category A Trees of high quality with an estimated remaining life expectancy of at least 40 years	Trees that are particularly good examples of their species, especially if rare or unusual; or those that are essential components of groups or formal or semi-formal arboricultural features (e.g. the dominant and/or principal trees within an avenue)	Trees, groups or woodlands of particular visual importance as arboricultural and/or landscape features
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
Category C Trees of low quality with an estimated remaining life expectancy of at least 10 years, or young trees with a stem diameter below 150 mm	Unremarkable trees of very limited merit or such impaired condition that they do not qualify in higher categories	Trees with material conservation or other cultural value
	Trees present in groups or woodlands, but without this conferring on them significantly greater collective landscape value; and/or trees offering low or only temporary/transient landscape benefits	Trees with no material conservation or other cultural value

Table 1.0: Summary of BS 5837:2012 tree quality categorisation criteria

- 1.2.7 Where trees are present on banks and adjacent to watercourses, it is anticipated that the default circular RPA will deviate due to topography and drainage. In woodland situations, roots will form an underground network and overlap with adjacent trees.
- 1.2.8 This report is valid for two years from the date of survey. Some individual trees within the data schedule in Appendix 1, have been recommended for an annual inspection.



2 THE SITE AND SURROUNDINGS

2.1 The site

- 2.1.1 The tree survey area is located on land centred on SJ 3944 5035, as shown in Figure 1.0 and is located on the eastern fringes of Wrexham Industrial Estate (“WIE”), east of Bryn Lane and west of the B5130. The site is approximately 5 km (3 miles) to west of Wrexham town centre. WIE was developed during World War II as a munitions factory and post-war, the estate was developed into a facility for industrial and employment uses. The estate consists of standalone industrial sites, industrial estates and business parks.
- 2.1.2 The site itself is primarily a greenfield site, formerly of agricultural use, but with the south area previously a former factory with hard standing and demolition spoil to the central southern area.



Figure 1.0 Site location - Contains ordnance survey data (OpenStreetMap)

2.2 The surroundings

- 2.2.1 The north site boundary is formed by the wide woodland belt following the course of a ditch, beyond which is a recently built warehouse. To the west on the other side of Bryn Lane is a large operational Kellogg's Factory. To the east is agricultural land and linear settlement of houses and community buildings along B5130, which are part of Isycoed. To the south and accessed off a shared lane, is an industrial unit and landscaped/vegetated area.
- 2.2.2 There is limited public access into the site and views are well screened by the existing boundary hedges, scrub and tree cover. A Public Right of Way ISY/18 runs between Bryn Lane to the south west leading to B5130 at Isycoed to the east and passes the south east corner of the site. There are occasional views into the site at this point, but the site is further screened by landform to the south and east boundary.

2.3 Topography

- 2.3.1 The topography of the site is flat to gently sloping with localised changes in level where there are man-made bunds such as around the lorry park to the west and around a former football field to the east. Ground levels vary between 29m above ordnance datum (AOD) to the west and south and 23m AOD to the east.
- 2.3.2 There are localised fluctuations in ground level due to natural and man-made features including the banks to ditches, ponds and drainage channels. There are man-made ground level changes including areas of spoil heaps from previous demolition activities.

2.4 Soil survey

- 2.4.1 A soil survey has not been undertaken as part of the tree survey. An examination of UK Soil Observatory³ website identifies the natural site soilscape as slowly permeable seasonally wet slightly acid but base-rich loamy and clayey soils of Impeded drainage and moderate fertility.

³ [UK Soil Observatory \(bgs.ac.uk\)](http://bgs.ac.uk)

3 DESIGNATIONS AND PROTECTION

3.1 Tree Preservation Orders and Conservation Area

- 3.1.1 An enquiry to the Wrexham CBC Tree Officer to confirm Tree Preservation Order (TPO) status was made on 10th May 2023. Confirmation has been received (11th May 2023) that there are no TPO at the site and the survey area is not within a conservation area.
- 3.1.2 There are trees subject to TPO beyond the site boundary, to the east between Barn Cottage and Plum Tree House, TPO reference WCBC No 191, 2012 Land adjacent to Barn Cottage, Bowling Bank, Wrexham.
- 3.1.3 TPO are conferred by Local Planning Authorities (LPA) to protect the amenity value of trees as individuals, in a group of trees or woodland. Unauthorised pruning, lopping, topping, felling, uprooting or wilful damage caused to a tree protected by a TPO is prohibited and may incur an unlimited fine and subject to prosecution. Works to trees protected by a TPO or within a conservation area, must only be carried out with the written consent of the Local Authority. This may take the form of a successful planning application where the removal of protected trees is clearly stated and agreed in the determination of the application or through a formal application process that requires a six-week notice period. Work must not be carried out within that period without consent. The LPA then has 6 weeks to decide whether the tree should be made the subject of a TPO. Applicants should contact the LPA if they are in any doubts about the procedures.

3.2 Ancient Woodland, Veteran and Ancient Trees

- 3.2.1 An examination of the Natural Resources Wales (NRW) Interactive Map Viewer on 10th May 2023⁴ confirms there is no ancient woodland within the survey area.
- 3.2.2 There is no comprehensive national register of veteran trees, however, an examination of the Woodland Trust Ancient Tree Inventory⁵ confirms the presence of recorded veteran trees along Ridley Wood Road to the north of the site.
- 3.2.3 The girth of a veteran or ancient tree is measured using a standard measuring tape rather than a calibrated diameter tape and provides the circumference measurement of the stem or trunk.

⁴ Natural Resources Wales Interactive Map Viewer [Geocortex Viewer for HTML5 \(cyfoethnaturiolcymru.gov.uk\)](https://geocortex.naturalresources.gov.uk/)

⁵ Ancient Tree Inventory [How to record ancient trees - Ancient Tree Inventory \(woodlandtrust.org.uk\)](https://www.woodlandtrust.org.uk/ancient-trees/how-to-record-ancient-trees/)

3.2.4 The Woodland Trust guidance on veteran and ancient trees⁶ identifies trees with a sizeable girth for their species. Table 2.0 reproduced from The Woodland Trust website, provides guidance on girth size and species. Trees within the survey area that are considered to be potential veterans, are noted on the tree constraints plans with the suffix (V).

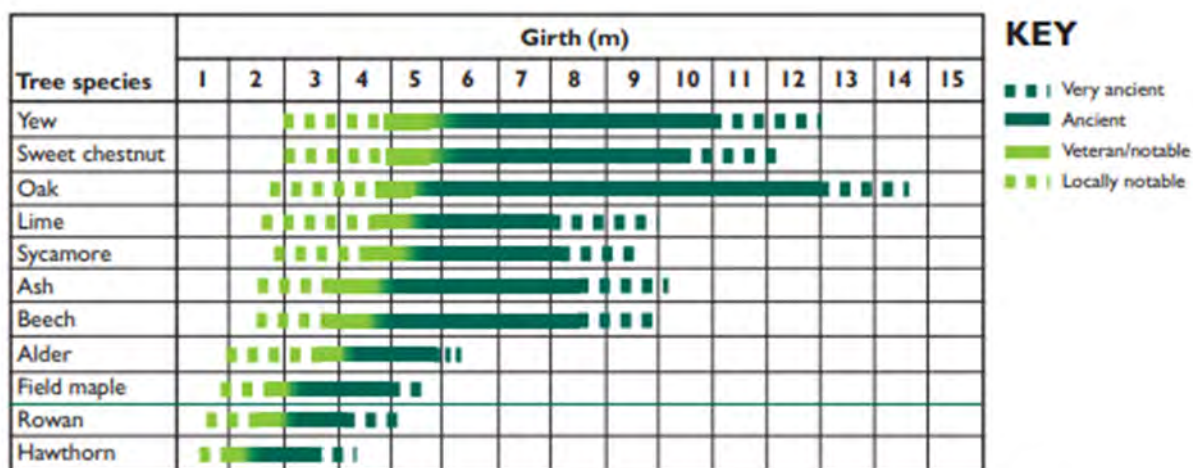


Table 2.0 Chart showing typical relationship between girth and tree species growing in average conditions (source Ancient Tree Guide no 4, The Woodland Trust)

3.2.5 The key characteristics of veteran and ancient trees as detailed by the Woodland Trust include:

- Crown 'growing downwards' or flattening (in conifers) through the ageing process;
- A large girth by comparison with other trees of the same species – (it may have a smaller girth if it is growing in poor conditions or is a pollard);
- Hollowing trunk; this may have one or more openings to the outside;
- Stag-headedness (dead, antler-like branches extending beyond the crown);
- Fruit bodies of heart-rot fungi;
- Cavities (e.g. where branches have broken away), sap runs or naturally forming water pools in branch hollows;
- Rougher or more creviced bark;
- An 'old' look which has high aesthetic appeal; and
- Aerial roots growing down into the decaying trunk or branches.

3.2.6 The trees displaying early veteran tree characteristics are present at the woodland edge to the north of the site, (see photos in Appendix 2) and include:

T35 Oak - stem diameter 1170mm, girth 3.65m circumference
 T36 Oak - stem diameter 1440mm, girth 4.4m circumference

⁶ Ancient Tree Guide no.4: What is an ancient tree? The Woodland Trust, November 2008

3.3 Protected Species

- 3.3.1 Trees and hedges are a potential habitat for nesting birds and roosting habitat for bats, both of which are protected under the *Wildlife and Countryside Act 1981* (as amended) and certain species under the *Conservation of Species and Habitat Regulations 2010*. This makes it an offence to intentionally or recklessly, damage or destroy an active birds' nest.
- 3.3.2 Several trees within the survey area may be suitable habitat for nesting birds and roosting habitat for bats, therefore all trees should be inspected for the absence or presence of nesting bird activity or presence of bats, before removal or major pruning work is carried out. A qualified Ecologist should be appointed to ensure a preliminary ecological assessment is undertaken.

4 PLANNING CONSIDERATIONS

4.1 Planning Policy

- 4.1.1 In addition to statutory designations and protection, the planning system also confers importance on trees and woodland in the context of potential development. The Planning Policy Wales document⁷ states a number of policies relating to trees and benefits of trees in design, specifically relating to trees, woodlands and hedgerows in paragraphs 6.4.24 to 6.4.27:

6.4.24 Trees, woodlands, copses and hedgerows are of great importance for biodiversity. They are important connecting habitats for resilient ecological networks and make a valuable wider contribution to landscape character, sense of place, air quality, recreation and local climate moderation. They also play a vital role in tackling the climate emergency by locking up carbon, and can provide shade and shelter, a sustainable energy source and building materials. The particular role, siting and design requirements of urban trees in providing health and well-being benefits to communities, now and in the future should be promoted as part of plan making and decision taking.

6.4.25 Planning authorities should protect trees, hedgerows, groups of trees and areas of woodland where they have ecological value, contribute to the character or amenity of a particular locality, or perform a beneficial and identified green infrastructure function. Planning authorities should consider the importance of native woodland and valued trees, and should have regard, where appropriate, to local authority tree strategies or SPG. Permanent removal of woodland should only be permitted where it would achieve significant and clearly defined public benefits. Where woodland or trees are removed as part of a proposed scheme, developers will be expected to provide compensatory planting.

6.4.26 Ancient woodland and semi-natural woodlands and individual ancient, veteran and heritage trees are irreplaceable natural resources, and have significant landscape, biodiversity and cultural value. Such trees and woodlands should be afforded protection from development which would result in their loss or deterioration unless there are significant and clearly defined public benefits; this protection should prevent potentially damaging operations and their unnecessary loss. In the case of a site recorded on the Ancient Woodland Inventory, authorities should consider the advice of NRW. Planning authorities should also have regard to the Ancient Tree Inventory.

6.4.27 The protection and planting of trees and hedgerows should be delivered, where appropriate, through locally specific strategies and policies, through imposing conditions when granting planning permission, and/or by making Tree Preservation Orders (TPOs). They should also be incorporated into Green Infrastructure Assessments and plans.

⁷ Planning Policy Wales, Edition 11, February 2021 Welsh Government [Planning Policy Wales - Edition 11 \(gov.wales\)](https://gov.wales/planning-policy-wales)

4.2 Tree Felling

- 4.2.1 When considering felling trees related to development, consents for tree felling may be required under different regimes, even if a planning application is not needed. These regimes include felling licences and Environmental Impact Assessments. The developer is responsible for ensuring that any necessary permissions, consents and permits are in place when required. If tree felling related to development is carried out without the necessary planning permission or felling permission, this may lead to enforcement action.

5 TREE POPULATION AND CONDITION

5.1 Tree species and population

- 5.1.1 The tree population comprises mainly native broadleaved species with low quantities of holly making up a limited evergreen species content. The trees vary from young to mature with occasional notable and potential veteran trees to the woodland W1 and established hedgerows.
- 5.1.2 The trees surveyed included the following species: oak, ash, blackthorn, hawthorn, willow species, silver birch, field maple, crab apple, wild cherry, wych elm, alder, Italian alder, sycamore, hazel, dogwood, guelder rose and holly.
- 5.1.3 A total of 95 individual trees, one woodland compartment and 33 groups of trees and scrub were recorded and 11 hedgerows.
- 5.1.4 A large proportion of the vegetation at the site is scrub and these areas have been categorised as groups for the purposes of the survey and data recording. The scrub species are typically hawthorn and blackthorn with smaller quantities of field maple and rose and are young to semi-mature. Where tree species are present, they are generally low in number as a proportion of the composition of the group and under 75mm DBH. While good habitat for mammals and birds they typically rate as low value, category C, under BS5837:2012, however this should not detract from their value for biodiversity.
- 5.1.5 Many groups at the site have been formed as a result of natural regeneration of open ground over the last 20 years⁸ and consist of pioneer species such as willow and silver birch that have established as a result of reduced agricultural and land management. Some colonisation by field maple and oak in these groups is also occurring. Generally these groups are young to early mature in composition and of dense growth.
- 5.1.6 Groups of lapsed established hedgerows containing mature trees, such as G1, provide valuable screening in the landscape and are of habitat value. Although not particularly diverse in species composition, the hedgerows and scrub dominated groups are robust and dense and provide cover, nesting and foraging habitat for wildlife.
- 5.1.7 Groups of goat willow and white willow are dominant in wetter areas of the site, along ditches, around pond margins and waterlogged ground and are generally early mature and multi-stemmed. There are a number of large mature and overmature willow (T31, T32, T33) to the north boundary of the site in W1, that have partially collapsed and have branch breaks in the upper crown.
- 5.1.8 Water features at the site are generally surrounded by trees and scrub, with the pond to the central south of the site having a more diverse mix of tree species and age class. Trees around the pond of note are T53, T58 both pedunculate oak and T57 ash.

⁸ Google Earth Historic aerial imagery

- 5.1.9 Woodland compartment W1 has not be surveyed in detail due to lack of access for inspection, with the assessment of condition based on the trees and scrub to the immediate boundary along the ditch. The woodland appears to have a good structure and species diversity with ground flora present. A note of species in W1 has been included in the data schedule to evidence the categorisation. A remnant hedgerow to the woodland edge was noted, with mature hawthorn present in a line along the ditch. However these have not been managed for many years and are overgrown, such that they are forming a scrubby edge to the woodland.
- 5.1.10 There are a significant number of mature trees in W1, with two potential veteran oaks, T35 and T36, recorded to the south edge at the site boundary. T36 has a hollow stem and has been filled with clumps of rough concrete / demolition waste. It is not understand why this may have occurred and would serve no purpose or benefit to the tree, but would rather be detrimental and disrupt the normal ageing process of the tree⁹. Both trees are actively growing with healthy spreading crowns. Decay and bark loss to the stem was present to both, however no wood decay fungi was noted at the time of the inspection.
- 5.1.11 Hedgerows make up another large proportion of the site vegetation surveyed and these are mostly overgrown, and have not been recently managed. A detailed hedgerow survey in accordance with the Hedgerow Survey Handbook¹⁰ has not been undertaken, however the hedgerows are generally robust and mature, being over 30 years old. The hedge to the west with Bryn Lane is thought to be less than 30 years old, due to the presence of spiral guards at the base.
- 5.1.12 The hedgerows have not been recently maintained and many were overgrown at the time of the survey. The majority of the hedgerows have hedgerow trees of mature pedunculate oak, occasional ash and field maple.
- 5.1.13 A full description of the woodland compartment, groups and individual trees, is given in the tree data schedule in Appendix 1. Individual trees within groups of woodland that are worthy of mention due to their category rating, condition or arboricultural or landscape value, are referenced.

5.2 Categorisation and value

- 5.2.1 Trees, groups and woodland compartments within the survey area have been identified within categories A, B, C and U. Individual category U trees were noted and many include features that are considered to be of habitat value as standing dead wood and should be retained where safe to do so.
- 5.2.2 The trees surveyed are detailed in the tree survey data sheets in Appendix 1. General photographs of the survey area and photographs of notable trees, groups and woodland are illustrated in the photographic record in Appendix 2.

⁹ Veteran Trees: A Guide to Good management, English Nature & Veteran Trees Initiative, Helen Read 2000

¹⁰ Hedgerow Survey Handbook: A standard procedure for local surveys in the UK Prepared on behalf of the Steering Group for the UK Biodiversity Action Plan for Hedgerows 2nd edition, DEFRA 2007

- 5.2.3 The trees within the site are of moderate to high value in the landscape, providing screening to neighbouring sites and development areas from the small settlement of Isycoed to the east. The robust hedgerows and generous tree cover provide amenity value, particularly to the periphery of the site close to publicly accessible roads and footpaths.
- 5.2.4 The woodland belt (W1) to the north is of high value in the landscape with several prominent trees, varied woodland structure and species diversity and screening value. W1 is also of high habitat value due to connections to wider green infrastructure. Although low in numbers of trees, areas of scrub are also valuable habitat and offer screening in the landscape and enclose the site.
- 5.2.5 Groups, trees, woodland and hedgerow to the periphery of the site are of particular value for screening and amenity value, forming connections to wider green infrastructure and habitats, including ponds and watercourses.

6 DEVELOPMENT ASPECTS AND RECOMMENDATIONS

6.1 Habitats

- 6.1.1 Trees, groups, woodland compartments and hedgerows within the survey area will provide foraging habitat for both bats and birds, other species of mammal and varied fauna. To minimise disturbance to these species, trees should be retained where possible, with standing dead wood retained where it is not a hazard. An ecological consultant should be contacted to advise on ecological constraints and potential impacts of any woodland management works.

6.2 Site planning

- 6.2.1 Tree root systems will increase incrementally with age and it is good practice to leave a larger area around a tree to allow for future root growth. Whether developing in the vicinity of existing trees or planning locations for new trees on development sites, consideration should be given to the potential rooting area relevant to the tree species.
- 6.2.2 Retaining areas of healthy soil (and associated extensive root/mycorrhizae system) unaffected by and protected from development, together with opportunities for a good supply of water from the roots, can reduce the likelihood of stress in a tree. Sufficient soil or growing media and physical space should be assigned to ensure continued thriving or successful tree establishment.

6.3 Development and construction

- 6.3.1 During development and construction works the rooting system of trees can potentially be affected, with a resulting impact on long term health and stability of the trees. Most development activity can have an impact on the future condition and safety of a tree, therefore, careful planning and management of tree protection should aim to ensure a continued sustainable tree cover and minimise stress to existing trees.
- 6.3.2 On this site, barriers to tree root growth are likely to include historic buried structures, hard surfacing, retaining walls, natural drainage and water courses. Tree root growth may also be impeded where ground levels have been increased due to site clearance works or adjacent development. Tree roots are expected to grow unimpeded where existing soil levels remain undisturbed and to form a network of overlapping roots within woodland.
- 6.3.3 To ensure that the retained trees on site are properly protected during the development phase, the tree rooting zones are calculated and mapped onto the tree constraints plan in accordance with BS5837:2012. The RPA represents the rooting zone which, where possible, should remain undisturbed. The protection of retained trees can therefore be achieved by creating a Construction Exclusion Zone (CEZ) based on the RPAs. Ancient and veteran trees in particular, can have root systems that extend in excess of 15m from the stem and an additional buffer of at least 5m should be considered for development. Refer to Tree Constraints Plan 274/T/100-118 inclusive (Figures 3.0 to 3.18).

- 6.3.4 Damage caused by any construction activity such as demolition, soil stripping and excavation needs to be considered at the design stage and avoided through review of the design and careful planning of the works. Care should be taken to avoid damage to tree roots when existing structures such as tarmac surfaces are removed within the RPA of a tree.
- 6.3.5 The laying of access roads, driveways, parking areas or any other hard surfaces planned in proximity to retained trees needs to be considered. There are many solutions available to construct hard surfaces over RPAs without causing damage to trees.
- 6.3.6 Consideration must be given to movement of both vehicle and pedestrian traffic. If possible, traffic should be diverted away from the RPAs. If this is not possible a range of temporary surfaces are available to distribute the weight of traffic and allow the roots to receive moisture and air.
- 6.3.7 At this site, protection of trees should be by means of tree protection fencing, placed in accordance with the RPA to form a Construction Exclusion Zone and additional RPA ground protection for access areas if required, as shown in Appendix 3.

7 ARBORICULTURAL RECOMMENDATIONS

7.1 Tree work

- 7.1.1 All tree surgery work should be carried out by a qualified arboricultural contractor in accordance with BS 3998:2010 Tree work – Recommendations and current issued FISA Safety Guides (Forestry Industry Safety Accord).
- 7.1.2 Where pruning is thought to be necessary, the advice of an experienced Arborist or Arboriculturist should be sought to avoid potential long-term impacts from over pruning or the spread of diseases.
- 7.1.3 Removal of ivy growth may be considered where there is a need for more detailed inspection of a tree, or where there is concern that the extent of ivy may create a windsail effect with regard to tree stability. Ivy growth can create valuable habitat for insects, invertebrates, birds and bats and its removal should relate to the management aims for the tree and importance for wildlife conservation.
- 7.1.4 Specific works that are considered a priority, are noted in this report and also in the tree survey data sheets in Appendix 1. Further inspection of trees to assess presence and extent of Chalara ash dieback infection has also been recommended.
- 7.1.5 Trees in category U that are dead or in decline may be retained as standing dead wood where there is no public access and no targets. Where there is existing public access in the vicinity of category U trees and if access through the woodland is retained in its current state, these trees should be inspected in detail, to assess whether there is an immediate risk to the public. Recommendations for removal based on current access have been made in the tree survey data schedule. This includes T1, due to significant split to stem and cavity. Felled timber should be stacked to form habitat piles within the woodland.
- 7.1.6 A strategy for management of veteran and ancient trees is recommended, to ensure the continued contribution of these valuable features within the woodland.
- 7.1.7 Biannual inspections of ash trees are recommended to inspect for presence of Chalara ash dieback.
- 7.1.8 Annual inspections are recommended on trees that have fungal fruiting bodies present, noted defects and are adjacent to areas of existing public access.
- 7.1.9 The resulting arisings from tree removal, branches, stems etc should be reused where possible within the existing site for habitat benefit such as leaving fallen stems to decompose, creation of hibernacula, mulch to new planting areas where there is no risk of spread of disease, such as Ash dieback. Other functional viable uses after removal, should also be considered to avoid unnecessary waste production, and timber products may be suitable for building or landscape materials.
- 7.1.10 All tree work should be undertaken with due regard to ecological constraints and any mitigation requirements.

8 MITIGATION PLANTING & LANDSCAPING

8.1 Mitigation

- 8.1.1 Replacement tree planting should be considered to mitigate for the removal of an existing screen or to replace amenity or biodiversity value that may be lost because of tree removal. There are opportunities on site to improve the composition and quality of existing tree groups and, therefore, enhance screening, biodiversity and visual amenity.
- 8.1.2 It is recommended that native trees and shrubs appropriate to the area are planted, to be consistent with the vegetation of the locality and for the benefit of biodiversity and site ecology.
- 8.1.3 The advice of a qualified Arboriculturist or Landscape Architect should be sought to ensure the selection of suitable species and planting locations on site regarding land use, buried services and knowledge of eventual tree height and spread at maturity.

9 Ongoing management and reinspection

9.1 Ongoing management

- 9.1.1 Trees are dynamic organisms that are influenced by natural and man-made changes to the environment around them and pro-active management of trees and woodland as part of a long term management plan is recommended.

9.2 Reinspection

- 9.2.1 It is recommended that trees are inspected every two years, particularly after storms or other extreme weather events, to identify potential new hazards or changes to known defects. Inspections of all retained trees should be undertaken by a qualified Arboriculturist and records of inspection held at the site or with the landowner.

10 SUMMARY

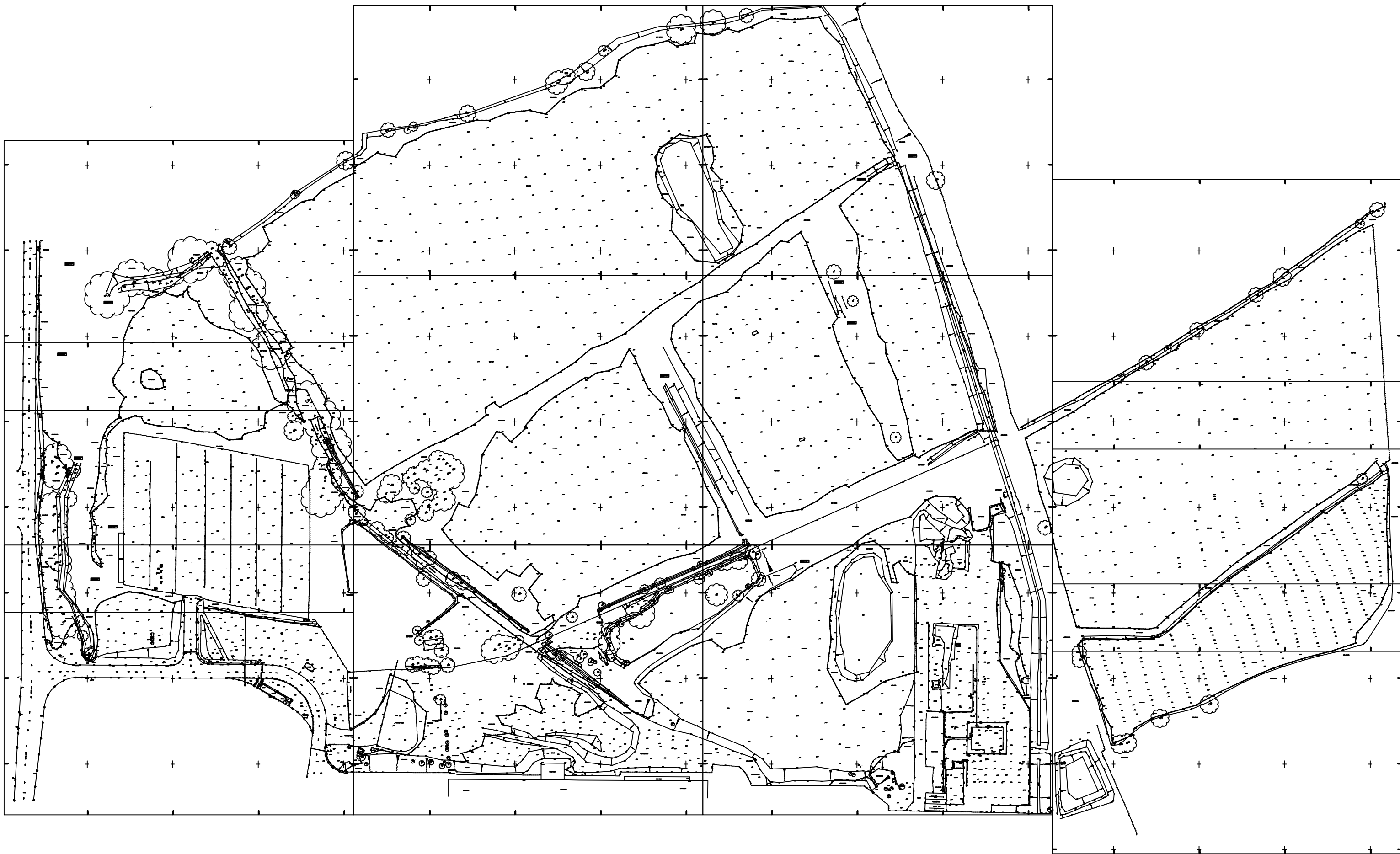
- 10.1.1 A total of 95 individual trees, one woodland compartment and 33 groups of trees and scrub were recorded and 11 hedgerows. The trees recorded in the survey area were found to be in a poor to good condition and range from young to mature with potential veteran trees present in low numbers to the north of the site.
- 10.1.2 The trees within the site have moderate to high value in the landscape and offer habitat and biodiversity value.
- 10.1.3 The woodland belt (W1) to the north is of high value in the landscape with several prominent trees, varied woodland structure and species diversity and screening value. W1 is also of high habitat value due to connections to wider green infrastructure. Although low in numbers of trees, areas of scrub are also valuable habitat and offer screening in the landscape and enclose the site. The trees, groups, woodland and hedgerow provide links to wider green infrastructure and habitats. The woodland W1, contains two potential veteran trees T35 and T36 to the south edge of the woodland, which forms the northern extent of the site.
- 10.1.4 Based on an objective assessment made in accordance with *BS 5837:2012 Trees in relation to design, demolition and construction - Recommendations*, the trees surveyed were valued as category A, B, C and U individuals, groups and woodland.
- 10.1.5 Trees in category U that are dead or in decline may be retained as standing dead wood where there is no public access and no targets. Where there is existing public access in the vicinity of category U trees and if access through the woodland is retained in its current state, these trees should be inspected in detail, to assess whether there is an immediate risk to the public.
- 10.1.6 Recommendations for removal based on current access have been made in the tree survey data schedule. TT1 is recommended for removal due to poor and unsafe condition. Felled timber should be stacked to form habitat piles within the woodland.
- 10.1.7 Any tree removal requirements should be reviewed in advance with an Ecologist to confirm absence or presence of protected species and nesting birds.
- 10.1.8 Should the existing public access arrangements to the woodland change, these recommendations and any changes to tree hazards and risks should be reviewed and reassessed. The trees should be reinspected every two years, or more frequently where separately advised in the management recommendations.
- 10.1.9 The tree categorisation method identifies the quality and value of the existing tree stock. It is not meant to be interpreted rigidly but is presented to form a balanced judgement on tree retention and removal.

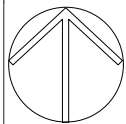
- 10.1.10 Tree locations, tree protection status, their quality categories and RPA are shown on Tree Constraints Plans 274/T/100-118 inclusive (Figure 3.0 to 3.18). The RPA should be used as a guide to the most likely position of tree roots at time of survey necessary for the successful retention of trees, however it is noted that the rooting extent is likely to be affected by existing walls and hard surfacing, topography and drainage. Incursion into the RPA by development activities may reduce the chance of healthy tree survival.
- 10.1.11 Tree root systems will increase incrementally with age and it is good practice to leave a larger area around a tree to allow for future root growth. The RPA of ancient and veteran trees should have an extended buffer of at least 15m times the DBH due to potential for more extensive rooting and value of these features. When developing in the vicinity of existing trees and establishing new trees on development sites, consideration should be given to the potential rooting area in any site planning and design.
- 10.1.12 Mitigation or replacement tree planting is recommended in the event trees are lost because of arboricultural management, health and safety measures or development reasons.

11 FIGURES

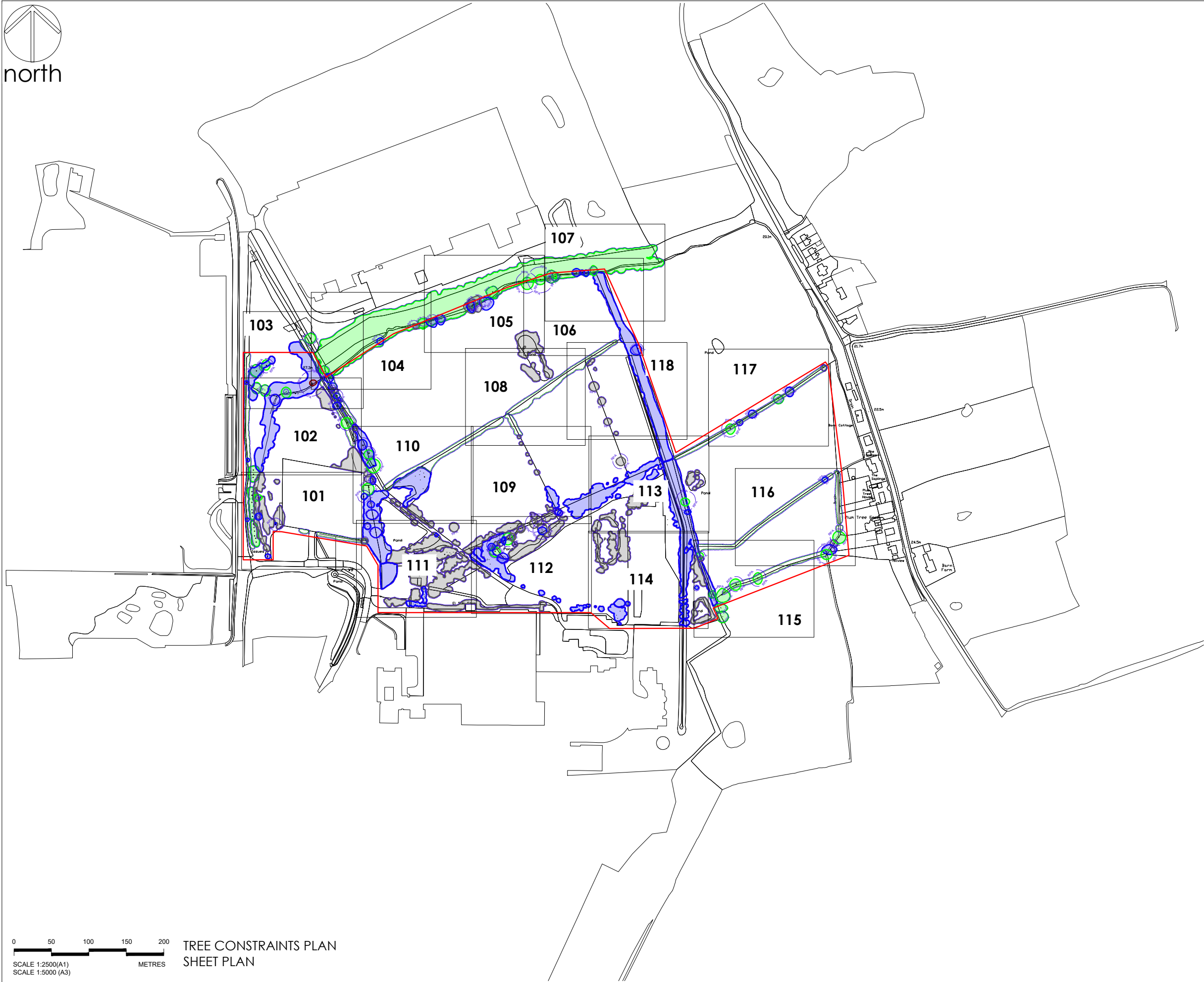
Topographical survey (Figure 2.0)

Tree Constraints Plans 274/T/100-118 inclusive (Figures 3.0 to 3.18)





north



Notes

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3. Drawing must be reproduced in colour.



north



Location Plan
not to scale

Drawing references	
274/T/101	TREE CONSTRAINTS PLAN SHEET 1 OF 18
274/T/102	TREE CONSTRAINTS PLAN SHEET 2 OF 18
274/T/103	TREE CONSTRAINTS PLAN SHEET 3 OF 18
274/T/104	TREE CONSTRAINTS PLAN SHEET 4 OF 18
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274/T/116	TREE CONSTRAINTS PLAN SHEET 16 OF 18
274/T/117	TREE CONSTRAINTS PLAN SHEET 17 OF 18
274/T/118	TREE CONSTRAINTS PLAN SHEET 18 OF 18

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SCALE 1:2500(A1)
SCALE 1:5000 (A3)
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TREE CONSTRAINTS PLAN
SHEET PLAN

Project KINGMOOR
WREXHAM INDUSTRIAL ESTATE

Dwg No
274/T/100

Title TREE CONSTRAINTS PLAN
SHEET PLAN

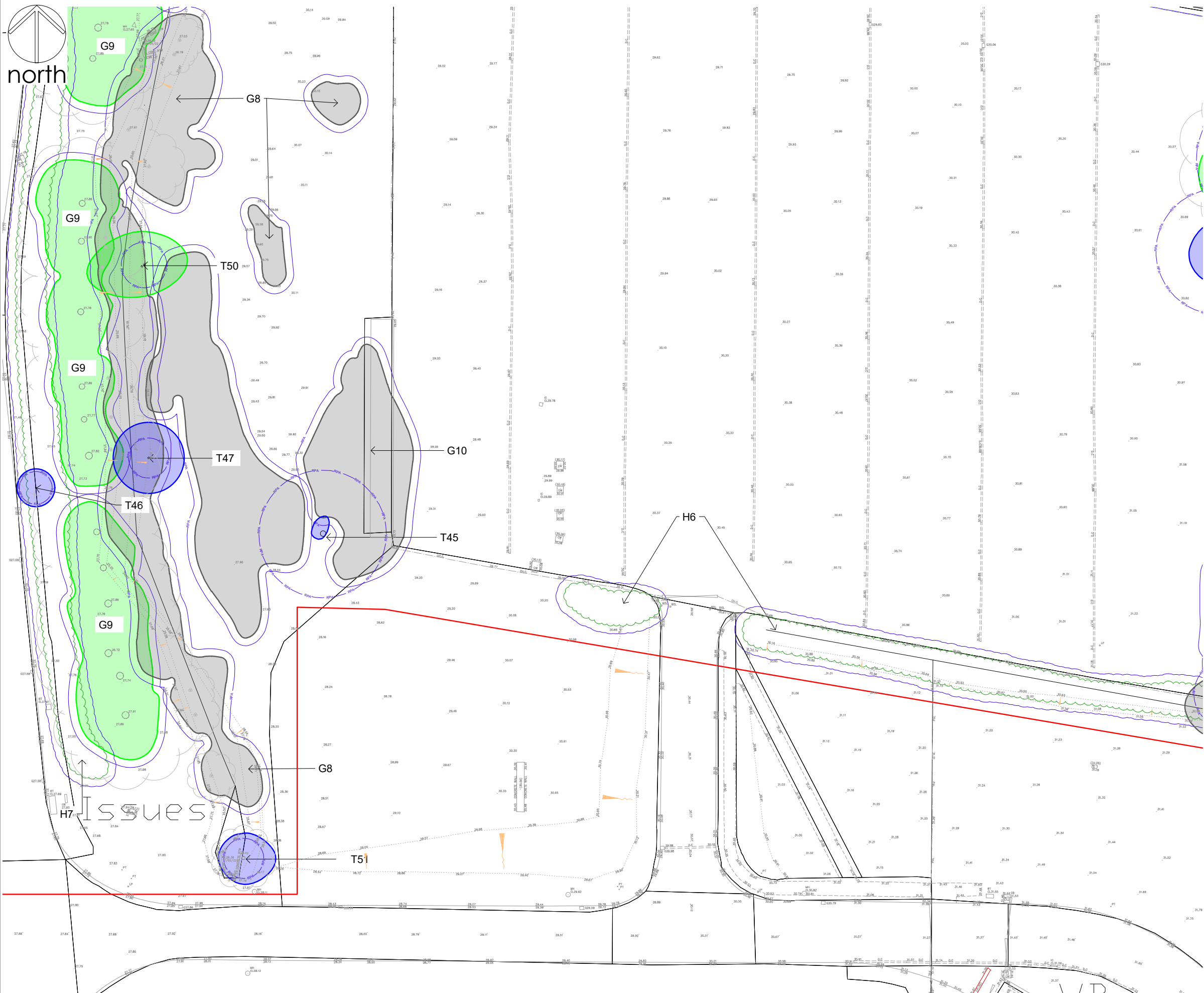
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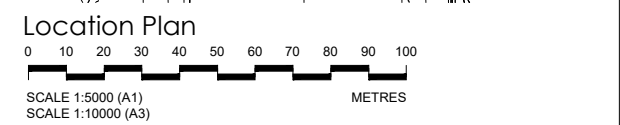
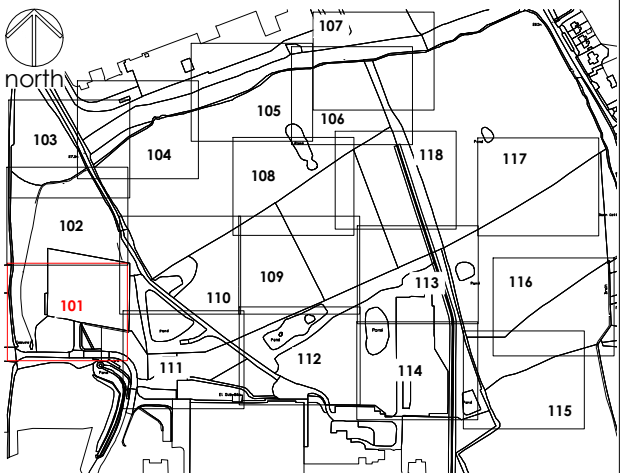
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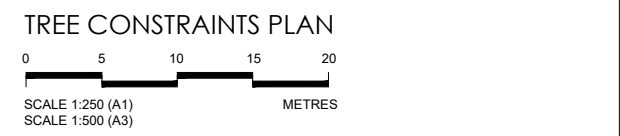
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- ### Notes
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- ### Legend
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 - CATEGORY U - unsuitable for retention
 - HEDGE - CANOPY EXTENTS
 - ROOT PROTECTION AREA (RPA)
 - REFERENCE - tree, group, woodland
 - POTENTIAL VETERAN TREE
 - NOT SURVEYED
 - TREE AS PLOTTED ON TOPO SURVEY
 - SURVEY EXTENTS



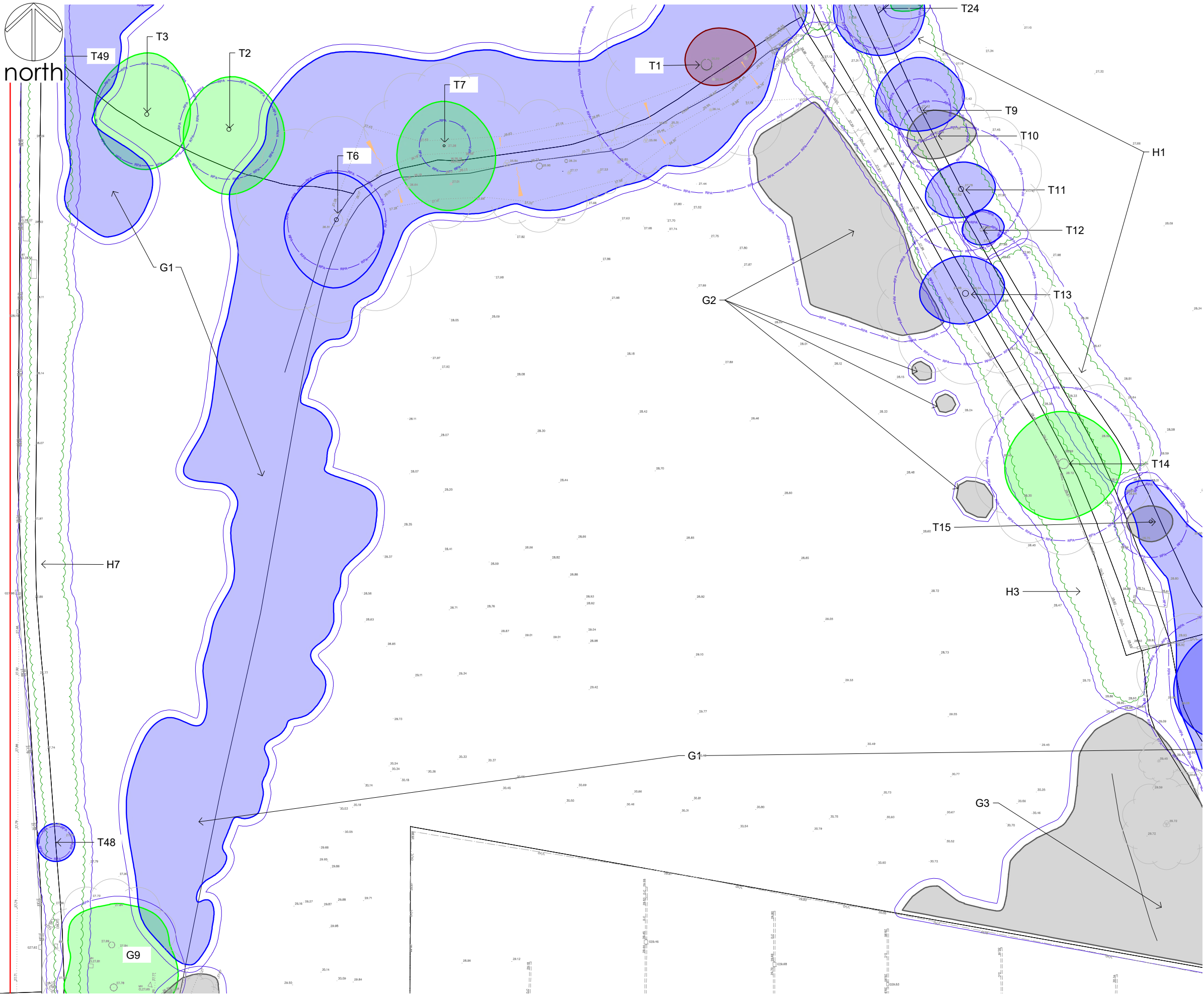
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274/T/116	TREE CONSTRAINTS PLAN SHEET 16 OF 18
274/T/117	TREE CONSTRAINTS PLAN SHEET 17 OF 18
274/T/118	TREE CONSTRAINTS PLAN SHEET 18 OF 18

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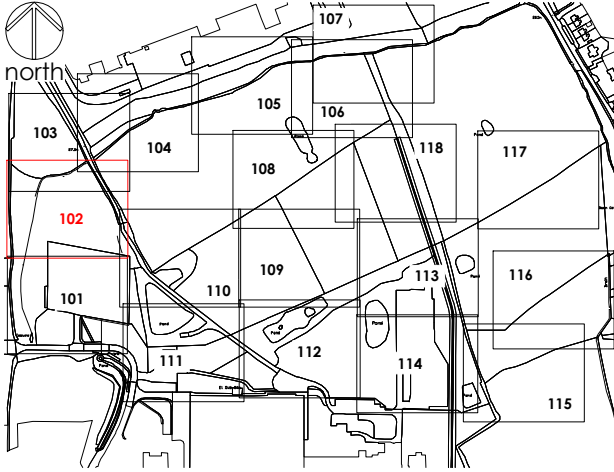
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Title TREE CONSTRAINTS PLAN SHEET 1 OF 18		Scale 1:250 @ A1 / 1:500 @ A3		Date 03/05/2023					

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Location Plan

0 10 20 30 40 50 60 70 80 90 100

SCALE 1:5000 (A1)
SCALE 1:10000 (A3)

METRES

- Legend
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 - CATEGORY U - unsuitable for retention
 - HEDGE - CANOPY EXTENTS
 - ROOT PROTECTION AREA (RPA)
 - REFERENCE - tree, group, woodland
 - POTENTIAL VETERAN TREE
 - NOT SURVEYED
 - TREE AS PLOTTED ON TOPO SURVEY
 - SURVEY EXTENTS

TREE CONSTRAINTS PLAN

0 5 10 15 20

SCALE 1:250 (A1)
SCALE 1:500 (A3)

METRES

Drawing references	
274/T/101	TREE CONSTRAINTS PLAN SHEET 1 OF 18
274/T/103	TREE CONSTRAINTS PLAN SHEET 3 OF 18
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274/T/118	TREE CONSTRAINTS PLAN SHEET 18 OF 18

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Revision	Date	Details	Drawn	Checked	Reviewed
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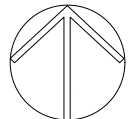
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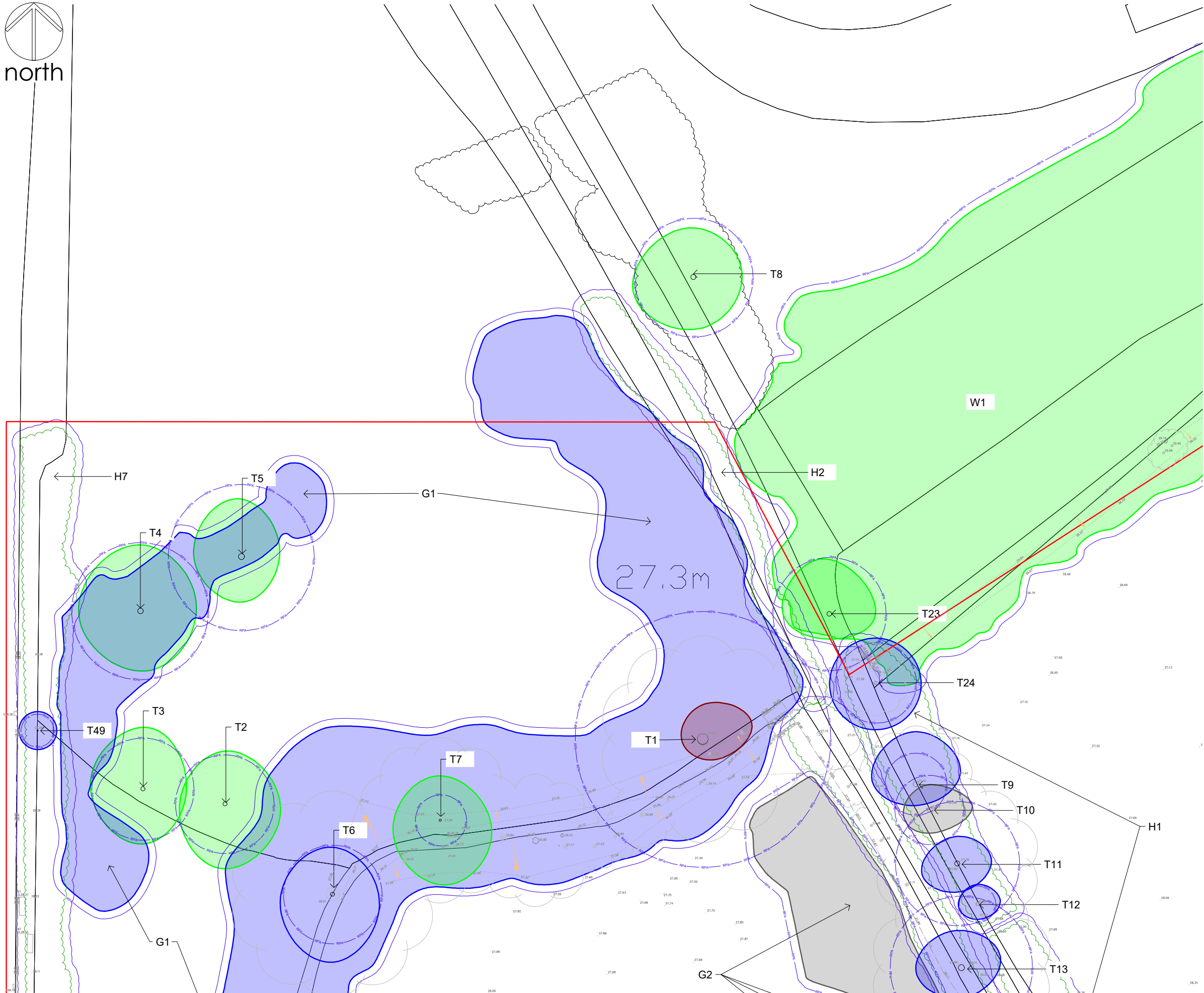
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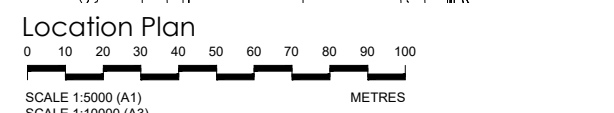
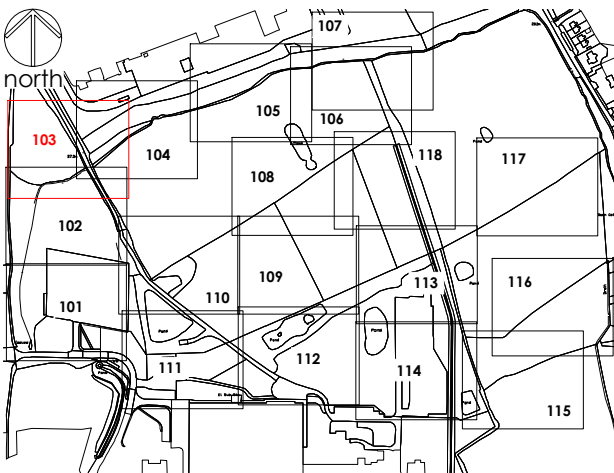
Arboricultural Association



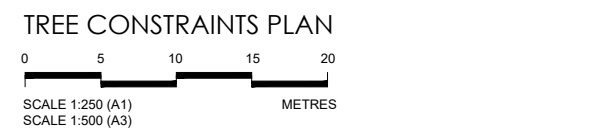
north



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Drawing references	
274/T/101	TREE CONSTRAINTS PLAN SHEET 1 OF 18
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274/T/118	TREE CONSTRAINTS PLAN SHEET 18 OF 18

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Title TREE CONSTRAINTS PLAN SHEET 3 OF 18		Scale 1:250 @ A1 / 1:500 @ A3		Date 03/05/2023					

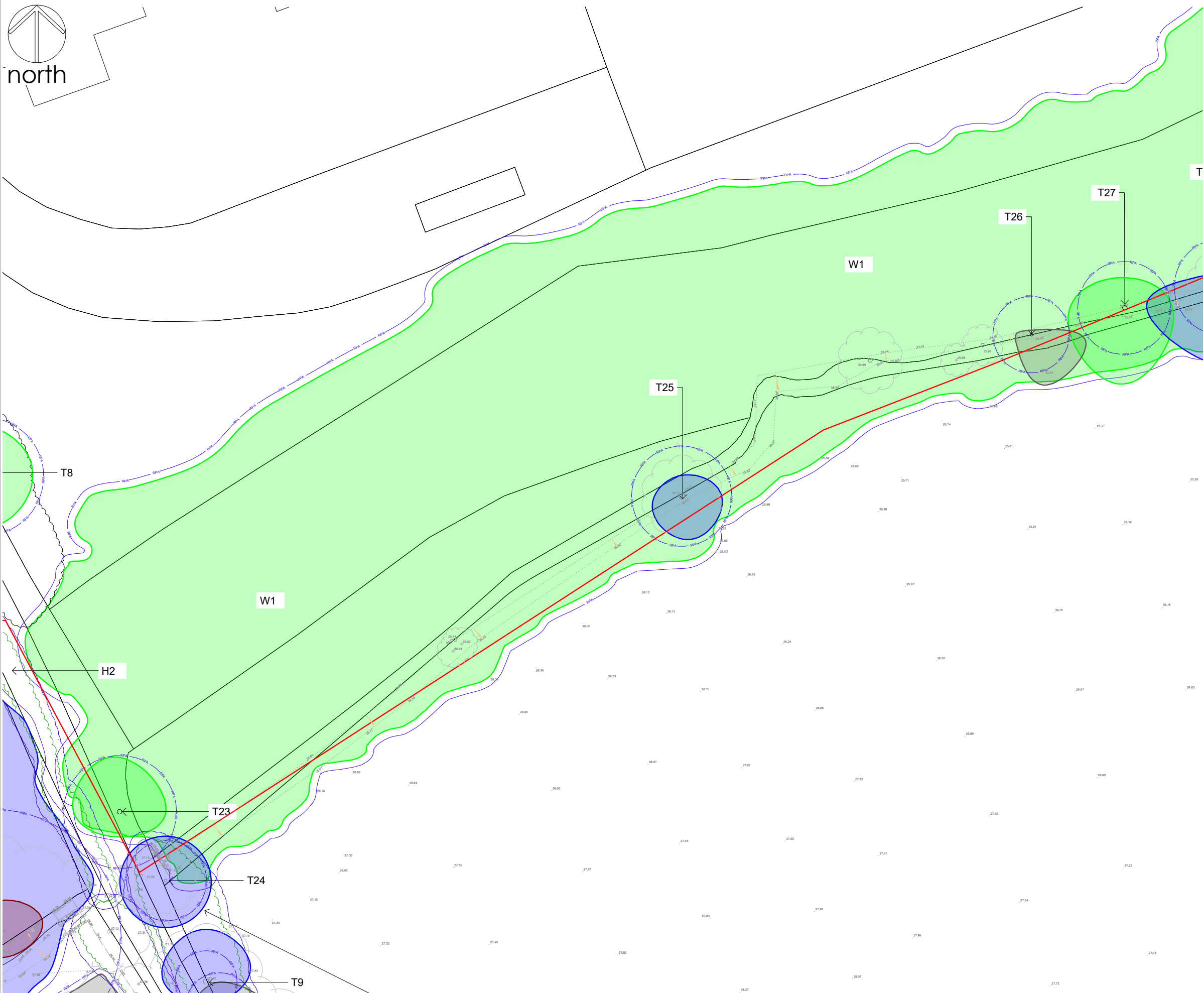
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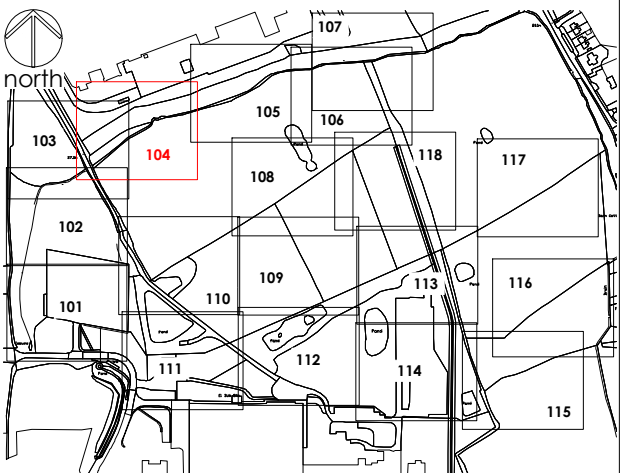
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Location Plan
0 10 20 30 40 50 60 70 80 90 100
SCALE 1:5000 (A1)
SCALE 1:10000 (A3)
METRES

Legend

Trees categorised in accordance with BS5837:2012 Trees in relation to design, demolition and construction : Recommendations
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- CATEGORY U - unsuitable for retention
- HEDGE - CANOPY EXTENTS
- ROOT PROTECTION AREA (RPA)
- T1 REFERENCE - tree, group, woodland
- V POTENTIAL VETERAN TREE
- NOT SURVEYED
- TREE AS PLOTTED ON TOPO SURVEY
- SURVEY EXTENTS

TREE CONSTRAINTS PLAN
0 5 10 15 20
SCALE 1:250 (A1)
SCALE 1:500 (A3)
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Drawing references	
274/T/101	TREE CONSTRAINTS PLAN SHEET 1 OF 18
274/T/102	TREE CONSTRAINTS PLAN SHEET 2 OF 18
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274/T/118	TREE CONSTRAINTS PLAN SHEET 18 OF 18

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Title	TREE CONSTRAINTS PLAN SHEET 4 OF 18	Scale	1:250 @ A1 / 1:500 @ A3	Date	03/05/2023

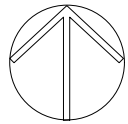
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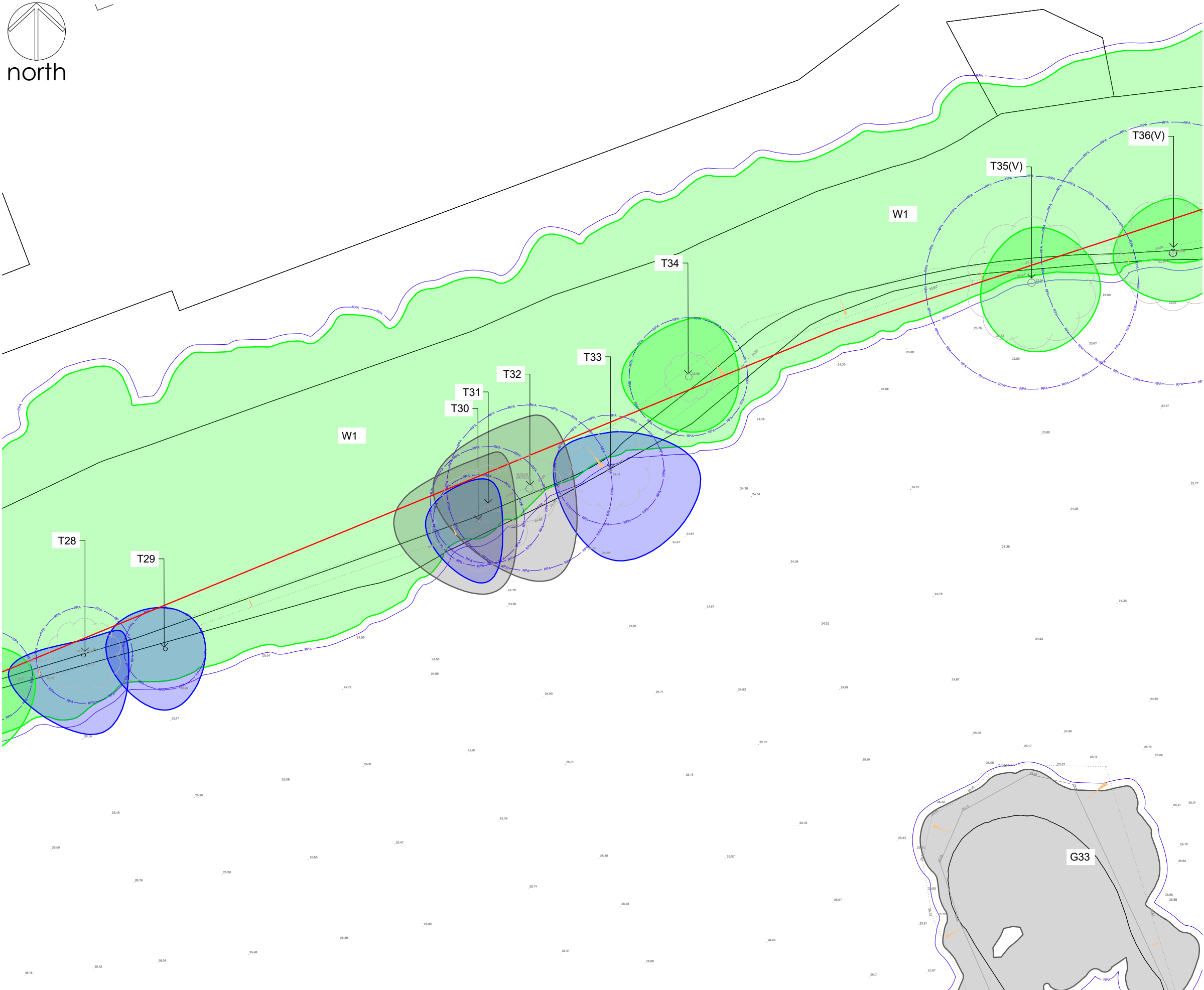
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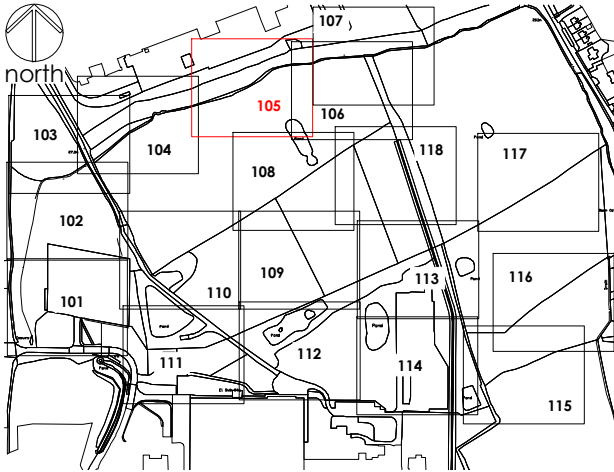


north



Notes

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Location Plan

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SCALE 1:5000 (A1)
SCALE 1:10000 (A3)

Legend

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TREE CONSTRAINTS PLAN

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SCALE 1:250 (A1)
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274/T/118	TREE CONSTRAINTS PLAN SHEET 18 OF 18

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Project KINGMOOR
WREXHAM INDUSTRIAL ESTATE

Dwg No
274/T/105

Title TREE CONSTRAINTS PLAN
SHEET 5 OF 18

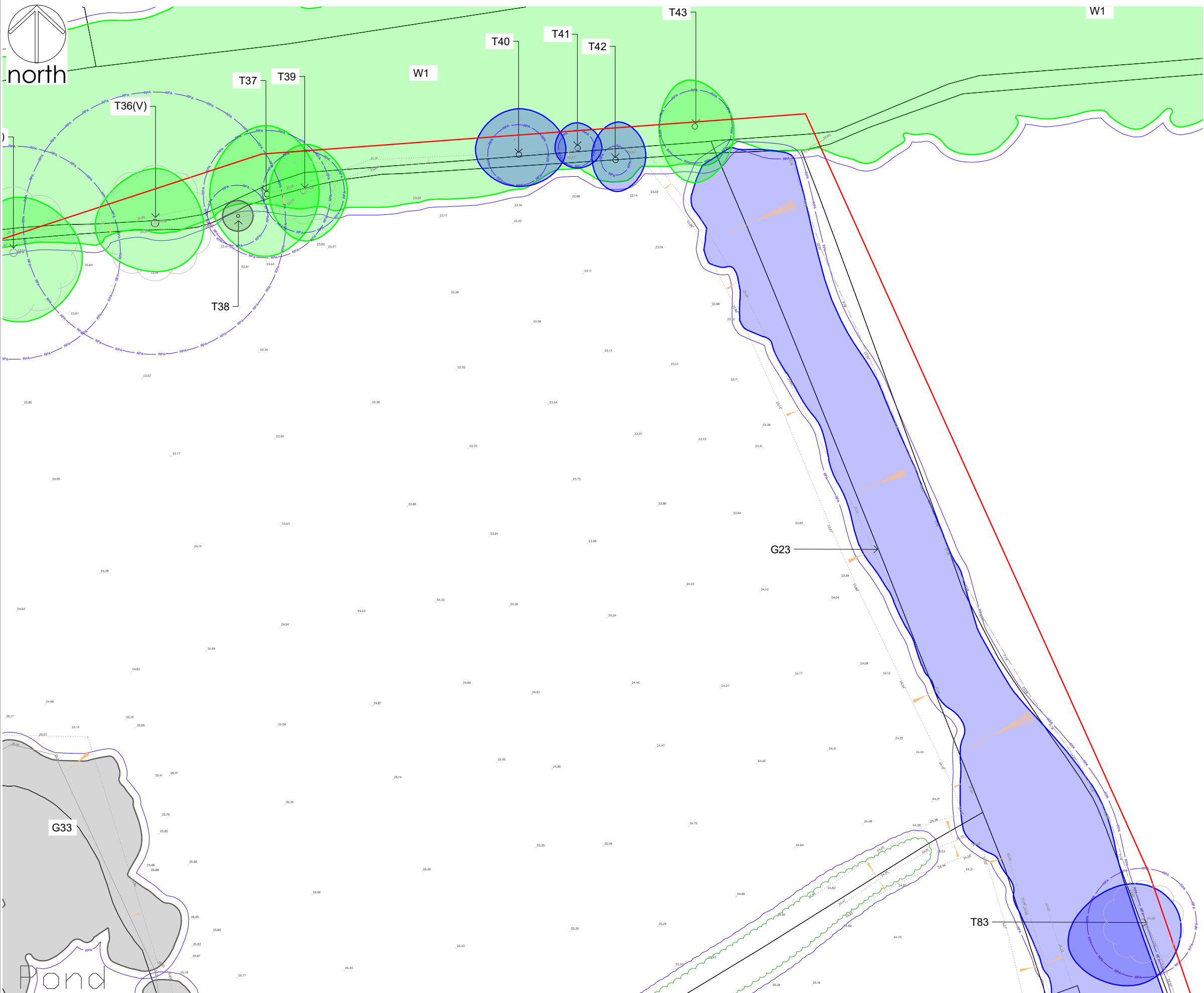
Scale
1:250 @ A1 / 1:500 @ A3

Date
03/05/2023

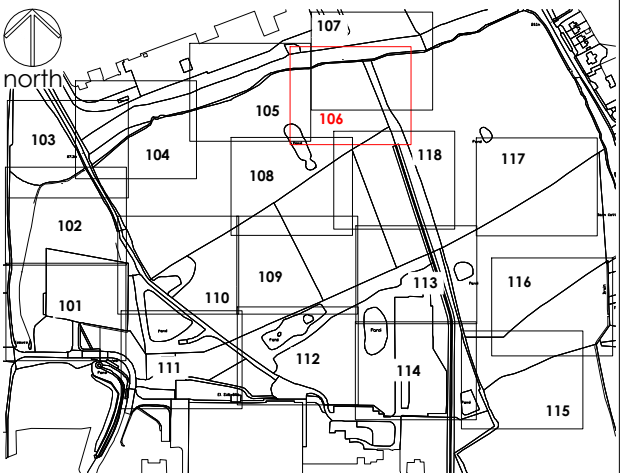
Revision	Date	Details	Drawn	Checked	Reviewed
P01	03/05/2023	FOR INFORMATION	MD		MD



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- ### Notes
1. Dimensions are given in metres and millimetres as stated on the drawing.
 2. Centre of site is located at approximately grid reference SJ 3944 5035.
 3. Drawing must be reproduced in colour.



Location Plan
0 10 20 30 40 50 60 70 80 90 100
SCALE 1:5000 (A1)
SCALE 1:10000 (A3)
METRES

- ### Legend
- Trees categorised in accordance with BS5837:2012 Trees in relation to design, demolition and construction : Recommendations
This drawing must be reproduced in colour
- CATEGORY A - high quality tree / woodland / group
 - CATEGORY B - moderate quality tree / woodland / group
 - CATEGORY C - low quality tree / woodland / group
 - CATEGORY U - unsuitable for retention
 - HEDGE - CANOPY EXTENTS
 - ROOT PROTECTION AREA (RPA)
 - REFERENCE - tree, group, woodland
 - POTENTIAL VETERAN TREE
 - NOT SURVEYED
 - TREE AS PLOTTED ON TOPO SURVEY
 - SURVEY EXTENTS

TREE CONSTRAINTS PLAN
0 5 10 15 20
SCALE 1:250 (A1)
SCALE 1:500 (A3)
METRES

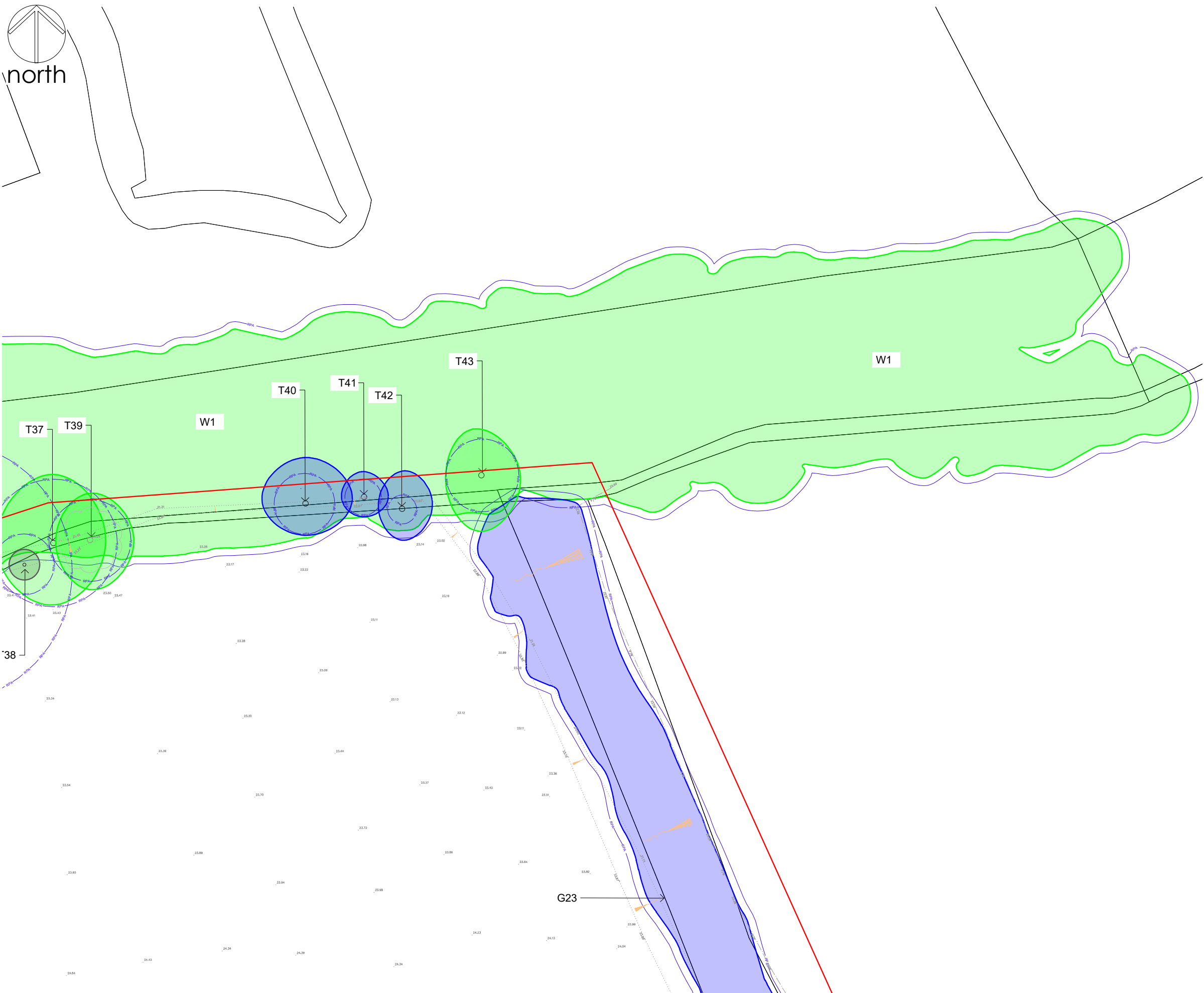
Drawing references	
274/T/101	TREE CONSTRAINTS PLAN SHEET 1 OF 18
274/T/102	TREE CONSTRAINTS PLAN SHEET 2 OF 18
274/T/103	TREE CONSTRAINTS PLAN SHEET 3 OF 18
274/T/104	TREE CONSTRAINTS PLAN SHEET 4 OF 18
274/T/105	TREE CONSTRAINTS PLAN SHEET 5 OF 18
274/T/107	TREE CONSTRAINTS PLAN SHEET 7 OF 18
274/T/108	TREE CONSTRAINTS PLAN SHEET 8 OF 18
274/T/109	TREE CONSTRAINTS PLAN SHEET 9 OF 18
274/T/110	TREE CONSTRAINTS PLAN SHEET 10 OF 18
274/T/111	TREE CONSTRAINTS PLAN SHEET 11 OF 18
274/T/112	TREE CONSTRAINTS PLAN SHEET 12 OF 18
274/T/113	TREE CONSTRAINTS PLAN SHEET 13 OF 18
274/T/114	TREE CONSTRAINTS PLAN SHEET 14 OF 18
274/T/115	TREE CONSTRAINTS PLAN SHEET 15 OF 18
274/T/116	TREE CONSTRAINTS PLAN SHEET 16 OF 18
274/T/117	TREE CONSTRAINTS PLAN SHEET 17 OF 18
274/T/118	TREE CONSTRAINTS PLAN SHEET 18 OF 18

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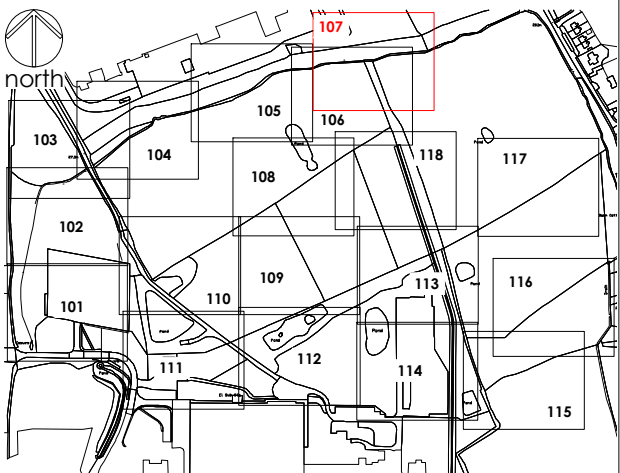
Project KINGMOOR WREXHAM INDUSTRIAL ESTATE		Dwg No 274/T/106		Revision P01	Date 03/05/2023	Details FOR INFORMATION	Drawn MD	Checked	Reviewed MD
Title TREE CONSTRAINTS PLAN SHEET 6 OF 18		Scale 1:250 @ A1 / 1:500 @ A3		Date 03/05/2023					



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- ### Notes
1. Dimensions are given in metres and millimetres as stated on the drawing.
 2. Centre of site is located at approximately grid reference SJ 3944 5035.
 3. Drawing must be reproduced in colour.



Location Plan
0 10 20 30 40 50 60 70 80 90 100
METRES
SCALE 1:5000 (A1)
SCALE 1:10000 (A3)

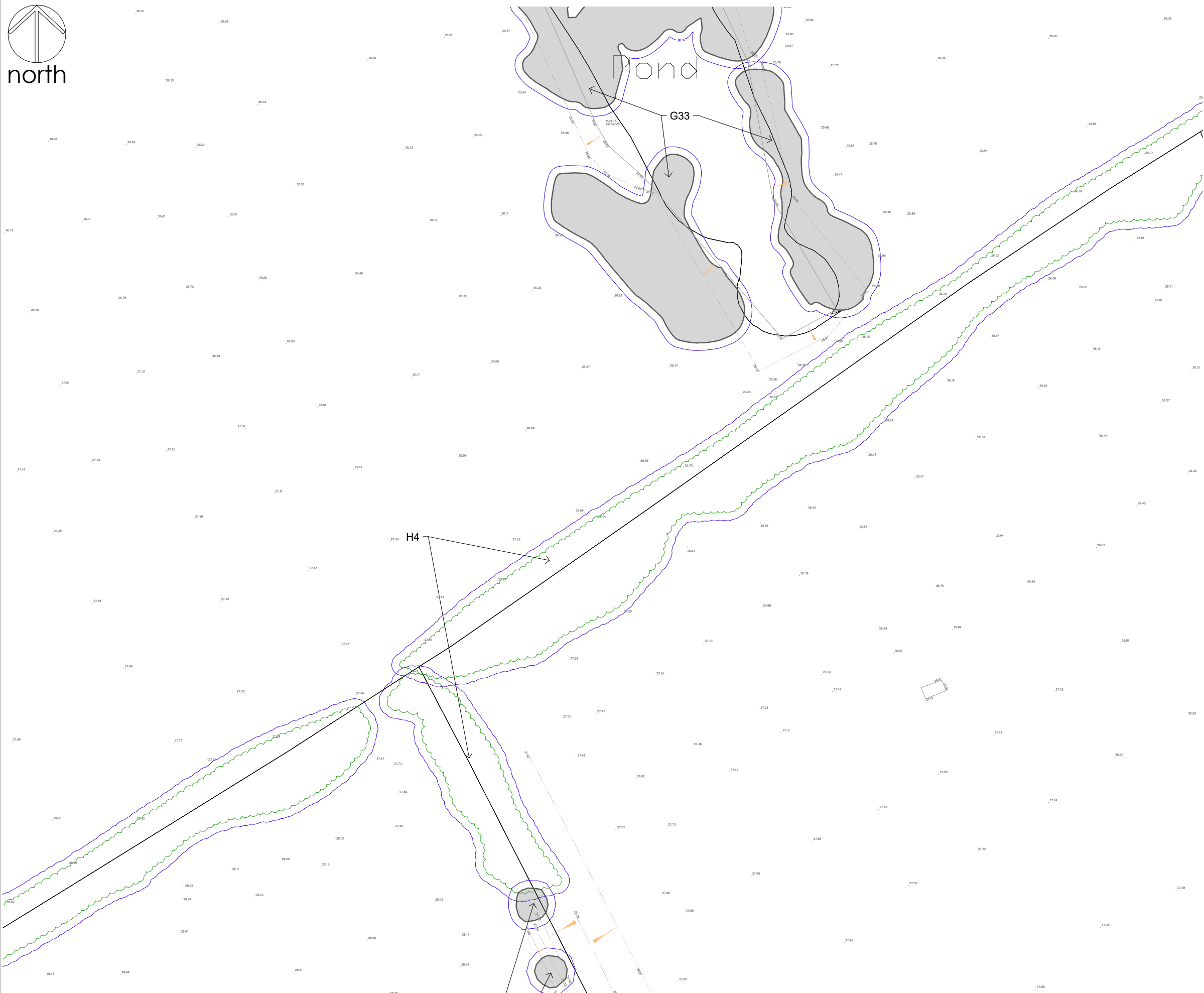
- ### Legend
- Trees categorised in accordance with BS5837:2012 Trees in relation to design, demolition and construction: Recommendations
This drawing must be reproduced in colour
- CATEGORY A - high quality tree / woodland / group
 - CATEGORY B - moderate quality tree / woodland / group
 - CATEGORY C - low quality tree / woodland / group
 - CATEGORY U - unsuitable for retention
 - HEDGE - CANOPY EXTENTS
 - ROOT PROTECTION AREA (RPA)
 - REFERENCE - tree, group, woodland
 - POTENTIAL VETERAN TREE
 - NOT SURVEYED
 - TREE AS PLOTTED ON TOPO SURVEY
 - SURVEY EXTENTS

TREE CONSTRAINTS PLAN
0 5 10 15 20
METRES
SCALE 1:250 (A1)
SCALE 1:500 (A3)

Drawing references	
274/T/101	TREE CONSTRAINTS PLAN SHEET 1 OF 18
274/T/102	TREE CONSTRAINTS PLAN SHEET 2 OF 18
274/T/103	TREE CONSTRAINTS PLAN SHEET 3 OF 18
274/T/104	TREE CONSTRAINTS PLAN SHEET 4 OF 18
274/T/105	TREE CONSTRAINTS PLAN SHEET 5 OF 18
274/T/106	TREE CONSTRAINTS PLAN SHEET 6 OF 18
274/T/108	TREE CONSTRAINTS PLAN SHEET 8 OF 18
274/T/109	TREE CONSTRAINTS PLAN SHEET 9 OF 18
274/T/110	TREE CONSTRAINTS PLAN SHEET 10 OF 18
274/T/111	TREE CONSTRAINTS PLAN SHEET 11 OF 18
274/T/112	TREE CONSTRAINTS PLAN SHEET 12 OF 18
274/T/113	TREE CONSTRAINTS PLAN SHEET 13 OF 18
274/T/114	TREE CONSTRAINTS PLAN SHEET 14 OF 18
274/T/115	TREE CONSTRAINTS PLAN SHEET 15 OF 18
274/T/116	TREE CONSTRAINTS PLAN SHEET 16 OF 18
274/T/117	TREE CONSTRAINTS PLAN SHEET 17 OF 18
274/T/118	TREE CONSTRAINTS PLAN SHEET 18 OF 18

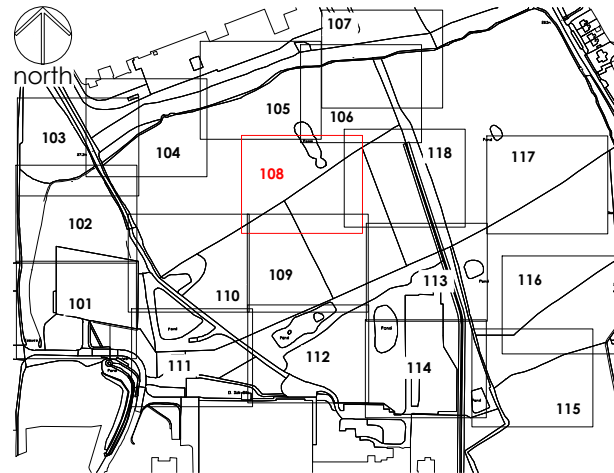
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Project	KINGMOOR WREXHAM INDUSTRIAL ESTATE	Dwg No 274/T/107	Scale 1:250 @ A1 / 1:500 @ A3	Date 03/05/2023	Revision	Date	Details	Drawn	Checked	Reviewed
					P01	03/05/2023	FOR INFORMATION	MD		MD
Title	TREE CONSTRAINTS PLAN SHEET 7 OF 18									



Notes

1. Dimensions are given in metres and millimetres as stated on the drawing.
2. Centre of site is located at approximately grid reference SJ 3944 5035.
3. Drawing must be reproduced in colour.



Location Plan

0 10 20 30 40 50 60 70 80 90 100

SCALE 1:5000 (A1)
SCALE 1:10000 (A3)

METRES

Legend

Trees categorised in accordance with BS5837:2012 Trees in relation to design, demolition and construction : Recommendations
This drawing must be reproduced in colour

- CATEGORY A - high quality tree / woodland / group
- CATEGORY B - moderate quality tree / woodland / group
- CATEGORY C - low quality tree / woodland / group
- CATEGORY U - unsuitable for retention
- HEDGE - CANOPY EXTENTS
- ROOT PROTECTION AREA (RPA)
- REFERENCE - tree, group, woodland
- POTENTIAL VETERAN TREE
- NOT SURVEYED
- TREE AS PLOTTED ON TOPO SURVEY
- SURVEY EXTENTS

TREE CONSTRAINTS PLAN

0 5 10 15 20

SCALE 1:250 (A1)
SCALE 1:500 (A3)

METRES

Drawing references	
274/T/101	TREE CONSTRAINTS PLAN SHEET 1 OF 18
274/T/102	TREE CONSTRAINTS PLAN SHEET 2 OF 18
274/T/103	TREE CONSTRAINTS PLAN SHEET 3 OF 18
274/T/104	TREE CONSTRAINTS PLAN SHEET 4 OF 18
274/T/105	TREE CONSTRAINTS PLAN SHEET 5 OF 18
274/T/106	TREE CONSTRAINTS PLAN SHEET 6 OF 18
274/T/107	TREE CONSTRAINTS PLAN SHEET 7 OF 18
274/T/109	TREE CONSTRAINTS PLAN SHEET 9 OF 18
274/T/110	TREE CONSTRAINTS PLAN SHEET 10 OF 18
274/T/111	TREE CONSTRAINTS PLAN SHEET 11 OF 18
274/T/112	TREE CONSTRAINTS PLAN SHEET 12 OF 18
274/T/113	TREE CONSTRAINTS PLAN SHEET 13 OF 18
274/T/114	TREE CONSTRAINTS PLAN SHEET 14 OF 18
274/T/115	TREE CONSTRAINTS PLAN SHEET 15 OF 18
274/T/116	TREE CONSTRAINTS PLAN SHEET 16 OF 18
274/T/117	TREE CONSTRAINTS PLAN SHEET 17 OF 18
274/T/118	TREE CONSTRAINTS PLAN SHEET 18 OF 18

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Project KINGMOOR
WREXHAM INDUSTRIAL ESTATE

Dwg No
274/T/108

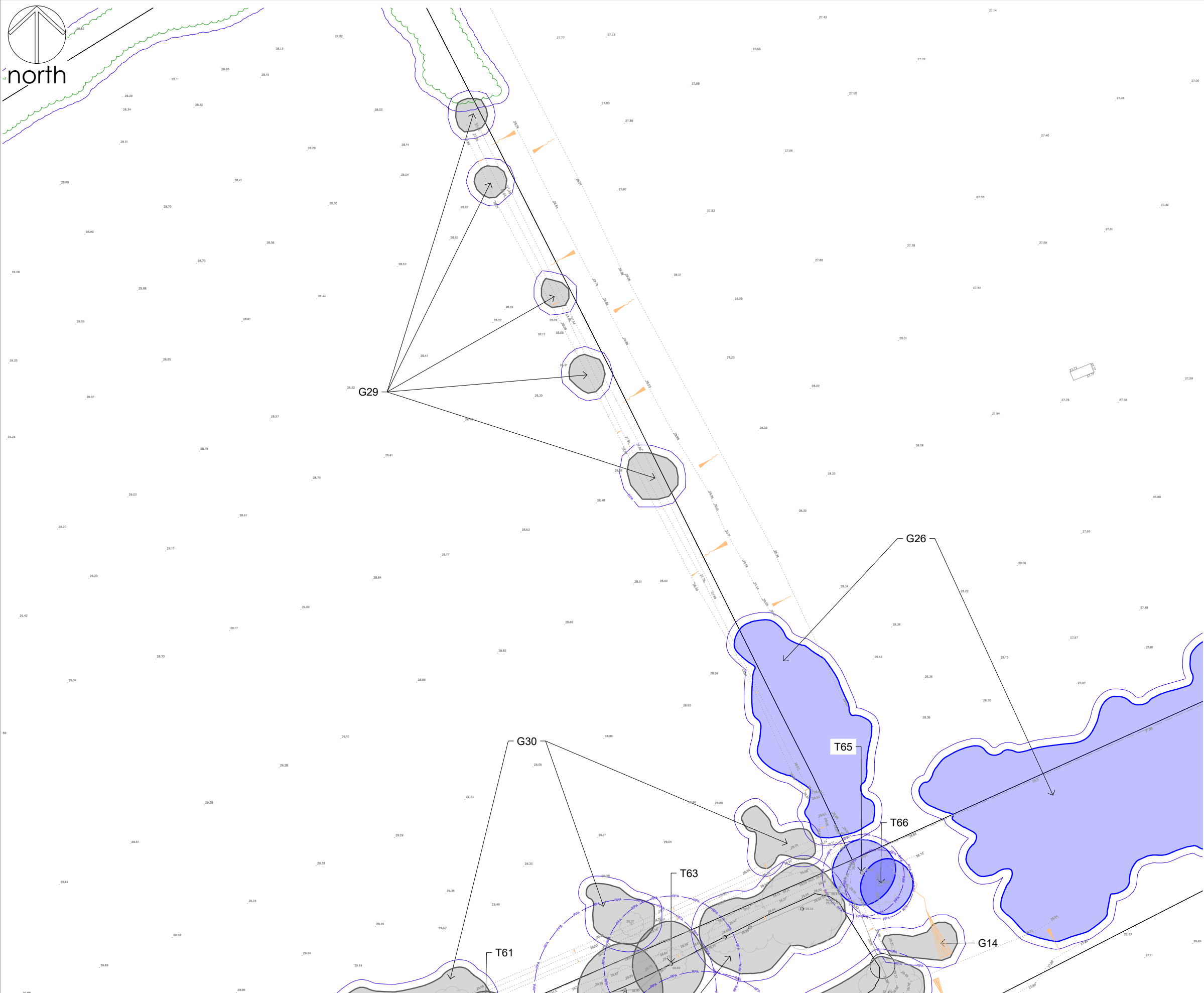
Title TREE CONSTRAINTS PLAN
SHEET 8 OF 18

Scale
1:250 @ A1 / 1:500 @ A3

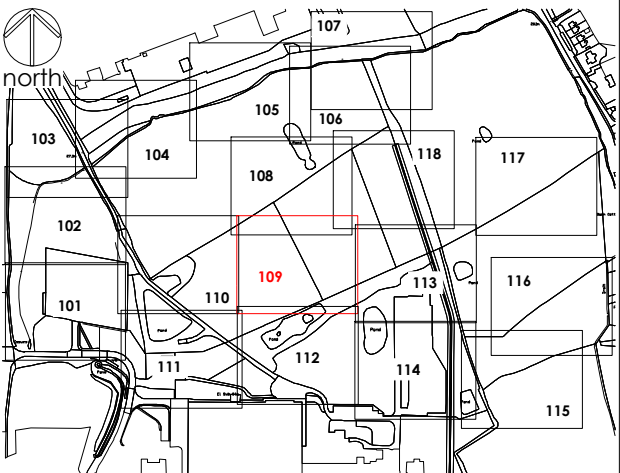
Date
03/05/2023

Revision	Date	Details	Drawn	Checked	Reviewed
P01	03/05/2023	FOR INFORMATION	MD		MD

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- ### Notes
1. Dimensions are given in metres and millimetres as stated on the drawing.
 2. Centre of site is located at approximately grid reference SJ 3944 5035.
 3. Drawing must be reproduced in colour.



Location Plan

0 10 20 30 40 50 60 70 80 90 100

SCALE 1:5000 (A1)
SCALE 1:10000 (A3)

METRES

Legend

Trees categorised in accordance with BS5837:2012 Trees in relation to design, demolition and construction : Recommendations
This drawing must be reproduced in colour

- CATEGORY A - high quality tree / woodland / group
- CATEGORY B - moderate quality tree / woodland / group
- CATEGORY C - low quality tree / woodland / group
- CATEGORY U - unsuitable for retention
- HEDGE - CANOPY EXTENTS
- ROOT PROTECTION AREA (RPA)
- REFERENCE - tree, group, woodland
- POTENTIAL VETERAN TREE
- NOT SURVEYED
- TREE AS PLOTTED ON TOPO SURVEY
- SURVEY EXTENTS

TREE CONSTRAINTS PLAN

0 5 10 15 20

SCALE 1:250 (A1)
SCALE 1:500 (A3)

METRES

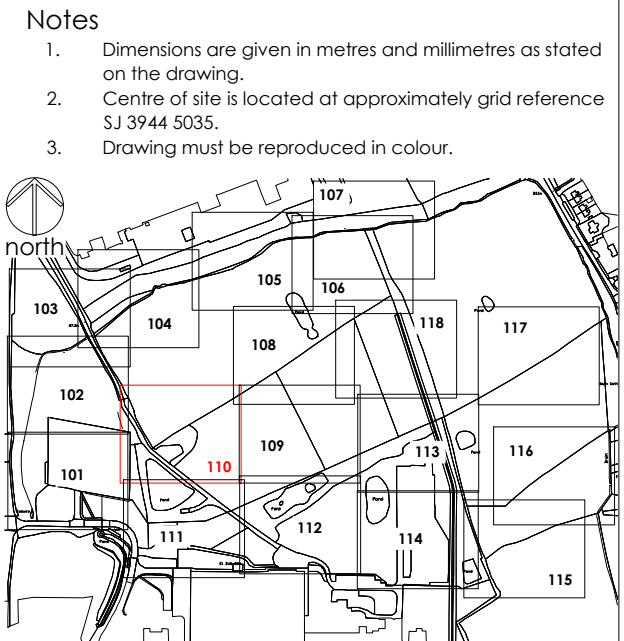
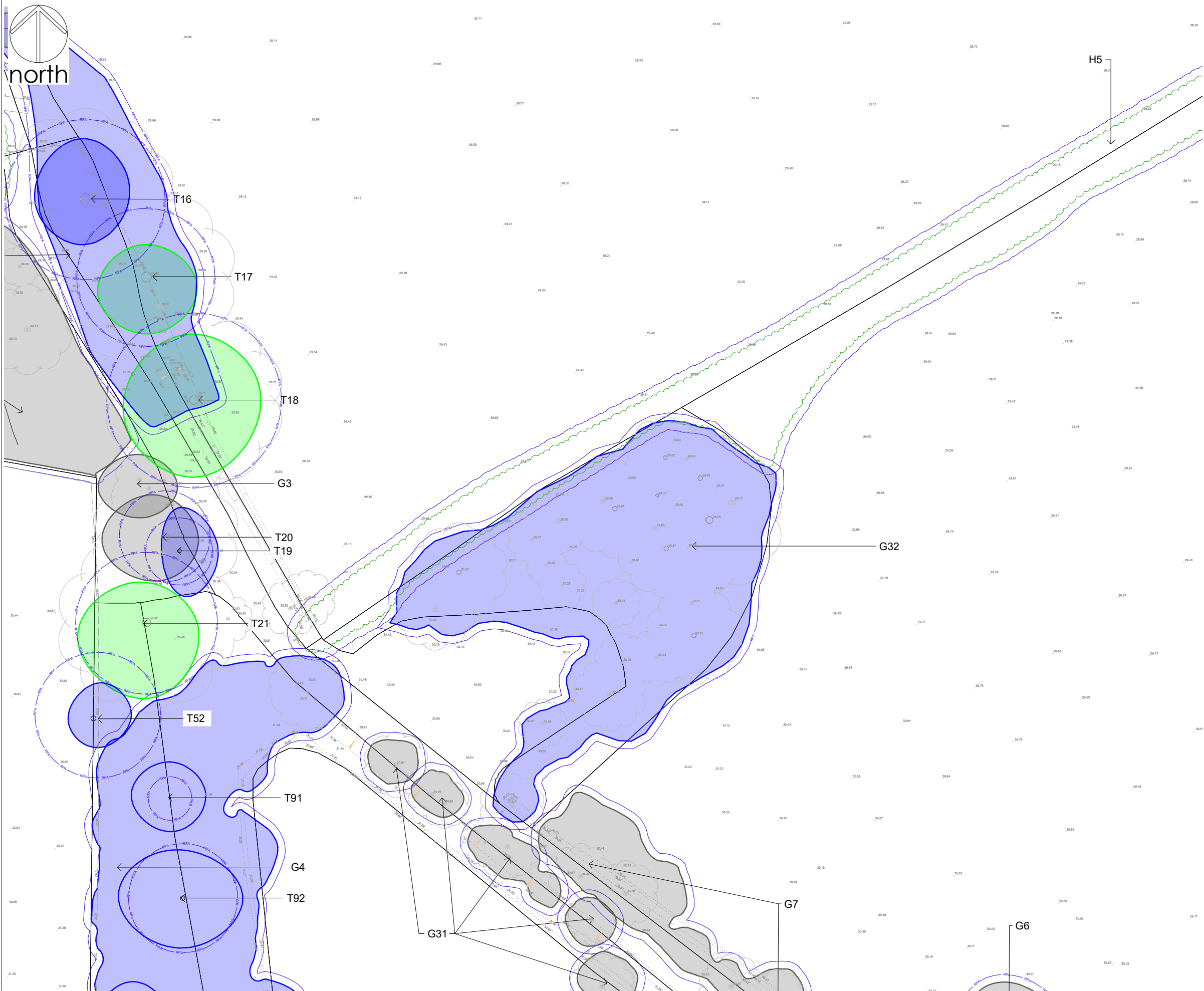
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274/T/101	TREE CONSTRAINTS PLAN SHEET 1 OF 18
274/T/102	TREE CONSTRAINTS PLAN SHEET 2 OF 18
274/T/103	TREE CONSTRAINTS PLAN SHEET 3 OF 18
274/T/104	TREE CONSTRAINTS PLAN SHEET 4 OF 18
274/T/105	TREE CONSTRAINTS PLAN SHEET 5 OF 18
274/T/106	TREE CONSTRAINTS PLAN SHEET 6 OF 18
274/T/107	TREE CONSTRAINTS PLAN SHEET 7 OF 18
274/T/108	TREE CONSTRAINTS PLAN SHEET 8 OF 18
274/T/110	TREE CONSTRAINTS PLAN SHEET 10 OF 18
274/T/111	TREE CONSTRAINTS PLAN SHEET 11 OF 18
274/T/112	TREE CONSTRAINTS PLAN SHEET 12 OF 18
274/T/113	TREE CONSTRAINTS PLAN SHEET 13 OF 18
274/T/114	TREE CONSTRAINTS PLAN SHEET 14 OF 18
274/T/115	TREE CONSTRAINTS PLAN SHEET 15 OF 18
274/T/116	TREE CONSTRAINTS PLAN SHEET 16 OF 18
274/T/117	TREE CONSTRAINTS PLAN SHEET 17 OF 18
274/T/118	TREE CONSTRAINTS PLAN SHEET 18 OF 18

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Project	KINGMOOR WREXHAM INDUSTRIAL ESTATE	Dwg No	274/T/109	Revision	Date	Details	Drawn	Checked	Reviewed	
				P01	03/05/2023	FOR INFORMATION	MD		MD	
Title	TREE CONSTRAINTS PLAN SHEET 9 OF 18	Scale	1:250 @ A1 / 1:500 @ A3	Date	03/05/2023					  

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Location Plan
0 10 20 30 40 50 60 70 80 90 100
METRES
SCALE 1:5000 (A1)
SCALE 1:10000 (A3)

- Notes
1. Dimensions are given in metres and millimetres as stated on the drawing.
 2. Centre of site is located at approximately grid reference SJ 3944 5035.
 3. Drawing must be reproduced in colour.
- Legend
- Trees categorised in accordance with BS5837:2012 Trees in relation to design, demolition and construction : Recommendations
This drawing must be reproduced in colour
- CATEGORY A - high quality tree / woodland / group
 - CATEGORY B - moderate quality tree / woodland / group
 - CATEGORY C - low quality tree / woodland / group
 - CATEGORY U - unsuitable for retention
 - HEDGE - CANOPY EXTENTS
 - ROOT PROTECTION AREA (RPA)
 - REFERENCE - tree, group, woodland
 - POTENTIAL VETERAN TREE
 - NOT SURVEYED
 - TREE AS PLOTTED ON TOPO SURVEY
 - SURVEY EXTENTS

TREE CONSTRAINTS PLAN
0 5 10 15 20
METRES
SCALE 1:250 (A1)
SCALE 1:500 (A3)

Drawing references	
274/T/101	TREE CONSTRAINTS PLAN SHEET 1 OF 18
274/T/102	TREE CONSTRAINTS PLAN SHEET 2 OF 18
274/T/103	TREE CONSTRAINTS PLAN SHEET 3 OF 18
274/T/104	TREE CONSTRAINTS PLAN SHEET 4 OF 18
274/T/105	TREE CONSTRAINTS PLAN SHEET 5 OF 18
274/T/106	TREE CONSTRAINTS PLAN SHEET 6 OF 18
274/T/107	TREE CONSTRAINTS PLAN SHEET 7 OF 18
274/T/108	TREE CONSTRAINTS PLAN SHEET 8 OF 18
274/T/109	TREE CONSTRAINTS PLAN SHEET 9 OF 18
274/T/110	TREE CONSTRAINTS PLAN SHEET 10 OF 18
274/T/111	TREE CONSTRAINTS PLAN SHEET 11 OF 18
274/T/112	TREE CONSTRAINTS PLAN SHEET 12 OF 18
274/T/113	TREE CONSTRAINTS PLAN SHEET 13 OF 18
274/T/114	TREE CONSTRAINTS PLAN SHEET 14 OF 18
274/T/115	TREE CONSTRAINTS PLAN SHEET 15 OF 18
274/T/116	TREE CONSTRAINTS PLAN SHEET 16 OF 18
274/T/117	TREE CONSTRAINTS PLAN SHEET 17 OF 18
274/T/118	TREE CONSTRAINTS PLAN SHEET 18 OF 18

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Project	KINGMOOR WREXHAM INDUSTRIAL ESTATE	Dwg No	274/T/110		
			Scale	1:250 @ A1 / 1:500 @ A3	Date
Title	TREE CONSTRAINTS PLAN SHEET 10 OF 18	Scale	1:250 @ A1 / 1:500 @ A3		
			Date		

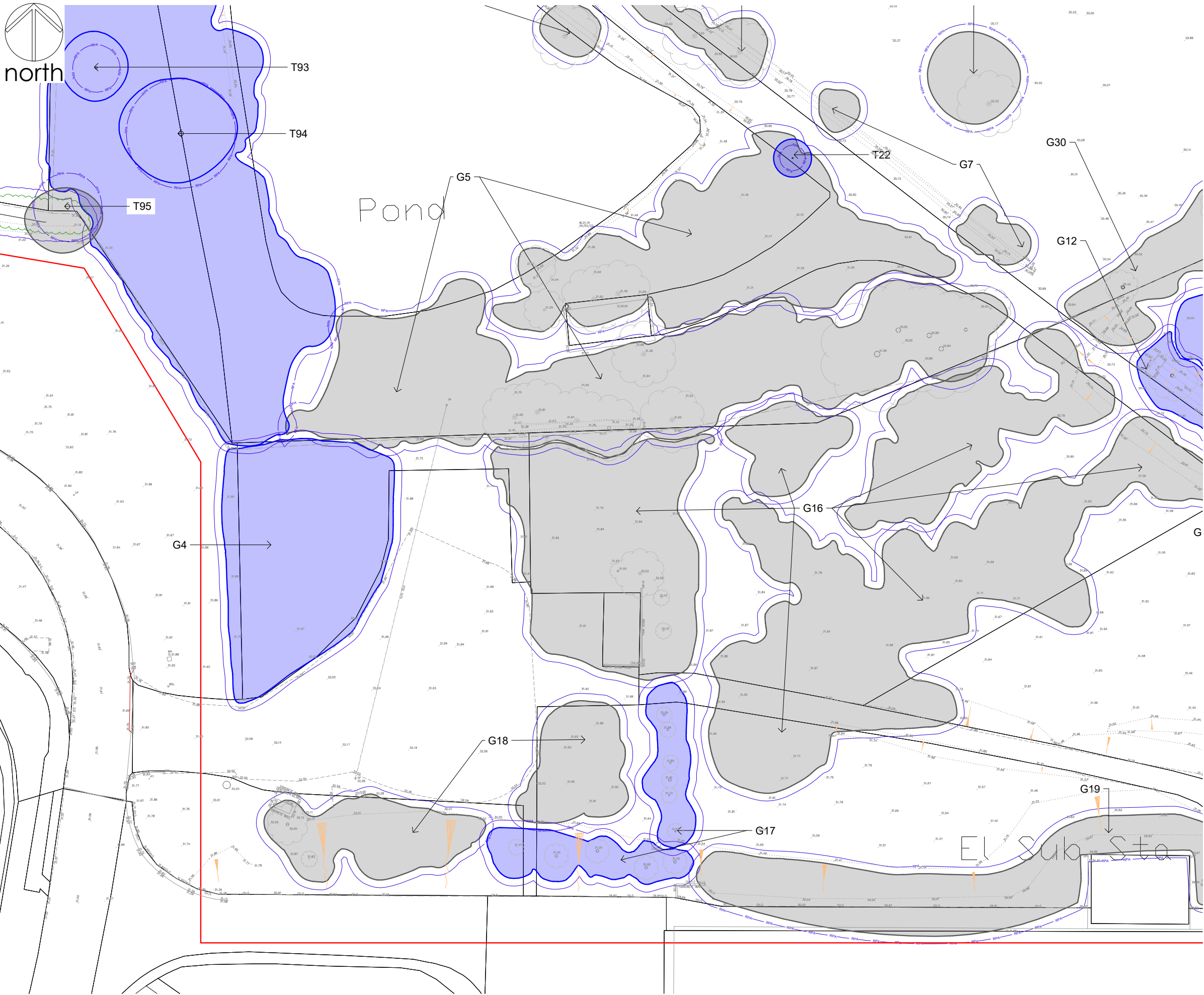
Revision	Date	Details	Drawn	Checked	Reviewed
P01	03/05/2023	FOR INFORMATION	MD		MD

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Notes

- Dimensions are given in metres and millimetres as stated on the drawing.
- Centre of site is located at approximately grid reference SJ 3944 5035.
- Drawing must be reproduced in colour.

Location Plan

0 10 20 30 40 50 60 70 80 90 100
METRES

SCALE 1:5000 (A1)
SCALE 1:10000 (A3)

Legend

Trees categorised in accordance with BS5837:2012 Trees in relation to design, demolition and construction : Recommendations
This drawing must be reproduced in colour

- CATEGORY A - high quality tree / woodland / group
- CATEGORY B - moderate quality tree / woodland / group
- CATEGORY C - low quality tree / woodland / group
- CATEGORY U - unsuitable for retention
- HEDGE - CANOPY EXTENTS
- ROOT PROTECTION AREA (RPA)
- REFERENCE - tree, group, woodland
- POTENTIAL VETERAN TREE
- NOT SURVEYED
- TREE AS PLOTTED ON TOPO SURVEY
- SURVEY EXTENTS

TREE CONSTRAINTS PLAN

0 5 10 15 20
METRES

SCALE 1:250 (A1)
SCALE 1:500 (A3)

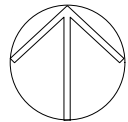
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274/T/109	TREE CONSTRAINTS PLAN SHEET 9 OF 18
274/T/110	TREE CONSTRAINTS PLAN SHEET 10 OF 18
274/T/112	TREE CONSTRAINTS PLAN SHEET 12 OF 18
274/T/113	TREE CONSTRAINTS PLAN SHEET 13 OF 18
274/T/114	TREE CONSTRAINTS PLAN SHEET 14 OF 18
274/T/115	TREE CONSTRAINTS PLAN SHEET 15 OF 18
274/T/116	TREE CONSTRAINTS PLAN SHEET 16 OF 18
274/T/117	TREE CONSTRAINTS PLAN SHEET 17 OF 18
274/T/118	TREE CONSTRAINTS PLAN SHEET 18 OF 18

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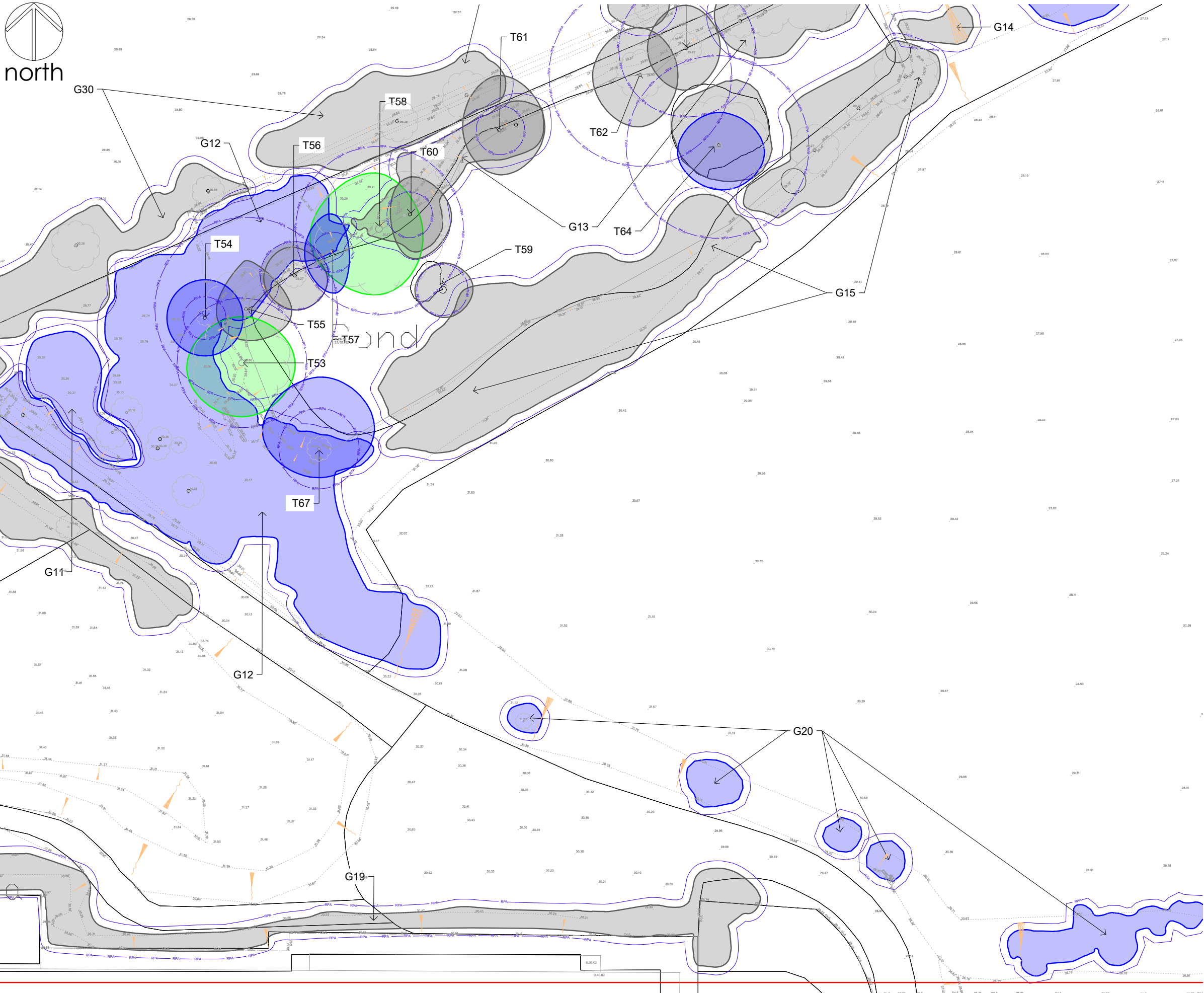
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Project KINGMOOR WREXHAM INDUSTRIAL ESTATE		Dwg No 274/T/111		Revision P01	Date 03/05/2023	Details FOR INFORMATION	Drawn MD	Checked	Reviewed MD
Title TREE CONSTRAINTS PLAN SHEET 11 OF 18		Scale 1:250 @ A1 / 1:500 @ A3		Date 03/05/2023					

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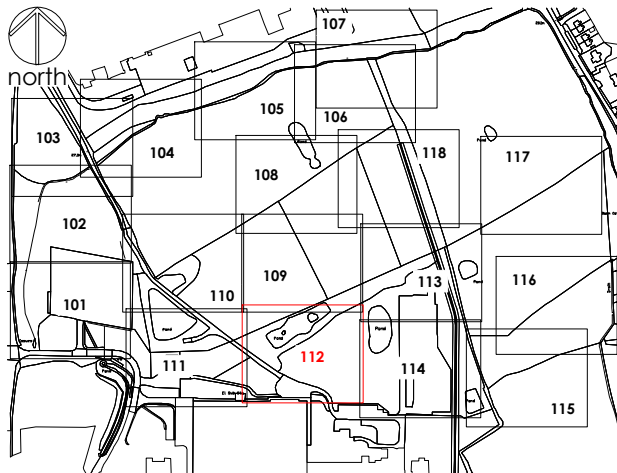


north



Notes

1. Dimensions are given in metres and millimetres as stated on the drawing.
2. Centre of site is located at approximately grid reference SJ 3944 5035.
3. Drawing must be reproduced in colour.



Location Plan

0 10 20 30 40 50 60 70 80 90 100

SCALE 1:5000 (A1)
SCALE 1:10000 (A3)

METRES

Legend

Trees categorised in accordance with BS5837:2012 Trees in relation to design, demolition and construction : Recommendations
This drawing must be reproduced in colour

- CATEGORY A - high quality tree / woodland / group
- CATEGORY B - moderate quality tree / woodland / group
- CATEGORY C - low quality tree / woodland / group
- CATEGORY U - unsuitable for retention
- HEDGE - CANOPY EXTENTS
- ROOT PROTECTION AREA (RPA)
- REFERENCE - tree, group, woodland
- POTENTIAL VETERAN TREE
- NOT SURVEYED
- TREE AS PLOTTED ON TOPO SURVEY
- SURVEY EXTENTS

TREE CONSTRAINTS PLAN

0 5 10 15 20

SCALE 1:250 (A1)
SCALE 1:500 (A3)

METRES

Drawing references	
274/T/101	TREE CONSTRAINTS PLAN SHEET 1 OF 18
274/T/102	TREE CONSTRAINTS PLAN SHEET 2 OF 18
274/T/103	TREE CONSTRAINTS PLAN SHEET 3 OF 18
274/T/104	TREE CONSTRAINTS PLAN SHEET 4 OF 18
274/T/105	TREE CONSTRAINTS PLAN SHEET 5 OF 18
274/T/106	TREE CONSTRAINTS PLAN SHEET 6 OF 18
274/T/107	TREE CONSTRAINTS PLAN SHEET 7 OF 18
274/T/108	TREE CONSTRAINTS PLAN SHEET 8 OF 18
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274/T/111	TREE CONSTRAINTS PLAN SHEET 11 OF 18
274/T/113	TREE CONSTRAINTS PLAN SHEET 13 OF 18
274/T/114	TREE CONSTRAINTS PLAN SHEET 14 OF 18
274/T/115	TREE CONSTRAINTS PLAN SHEET 15 OF 18
274/T/116	TREE CONSTRAINTS PLAN SHEET 16 OF 18
274/T/117	TREE CONSTRAINTS PLAN SHEET 17 OF 18
274/T/118	TREE CONSTRAINTS PLAN SHEET 18 OF 18

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Project KINGMOOR
WREXHAM INDUSTRIAL ESTATE

Dwg No
274/T/112

Title TREE CONSTRAINTS PLAN
SHEET 12 OF 18

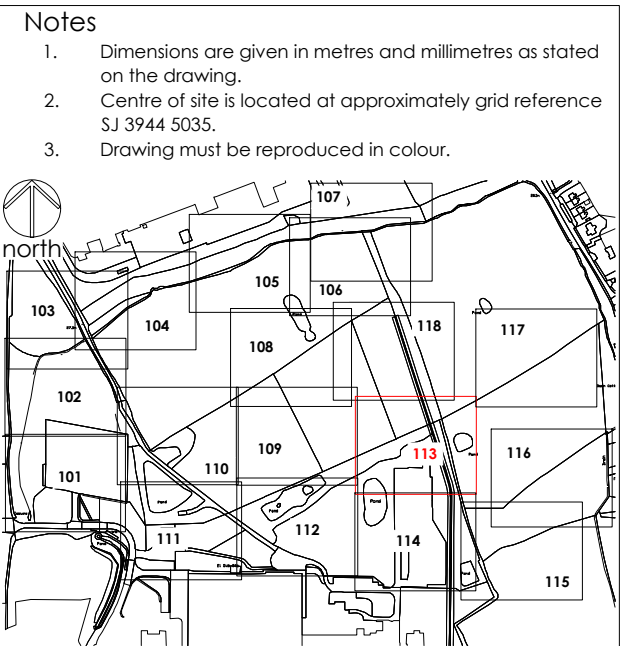
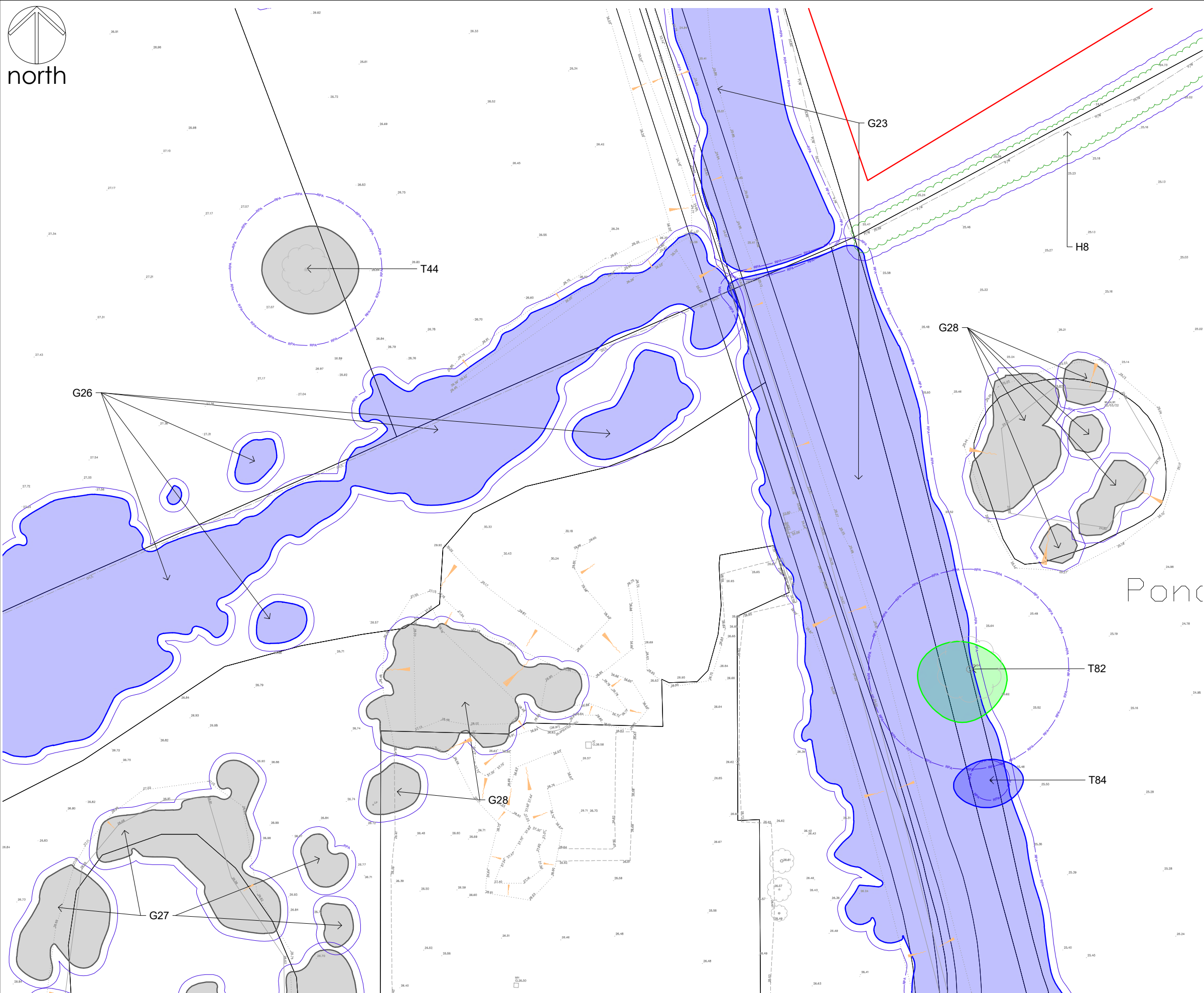
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1:250 @ A1 / 1:500 @ A3

Date
03/05/2023

Revision	Date	Details	Drawn	Checked	Reviewed
P01	03/05/2023	FOR INFORMATION	MD		MD



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Location Plan
0 10 20 30 40 50 60 70 80 90 100
SCALE 1:5000 (A1)
SCALE 1:10000 (A3)
METRES

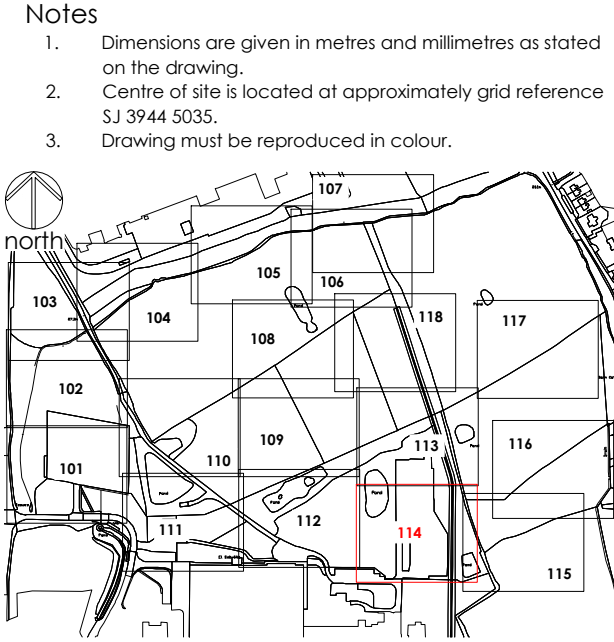
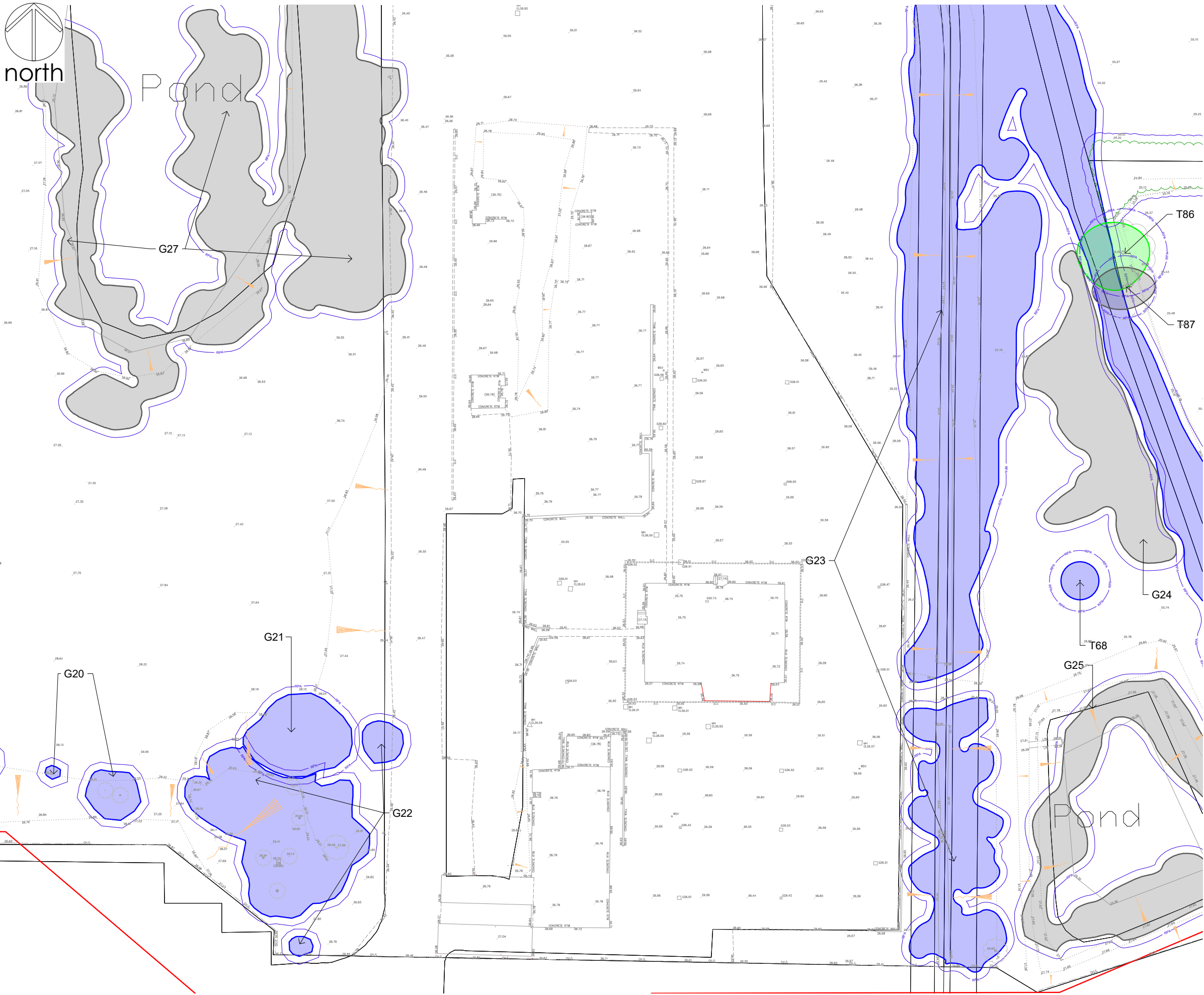
- Legend
- Trees categorised in accordance with BS5837:2012 Trees in relation to design, demolition and construction : Recommendations
This drawing must be reproduced in colour
- CATEGORY A - high quality tree / woodland / group
 - CATEGORY B - moderate quality tree / woodland / group
 - CATEGORY C - low quality tree / woodland / group
 - CATEGORY U - unsuitable for retention
 - HEDGE - CANOPY EXTENTS
 - ROOT PROTECTION AREA (RPA)
 - REFERENCE - tree, group, woodland
 - POTENTIAL VETERAN TREE
 - NOT SURVEYED
 - TREE AS PLOTTED ON TOPO SURVEY
 - SURVEY EXTENTS

TREE CONSTRAINTS PLAN
0 5 10 15 20
SCALE 1:250 (A1)
SCALE 1:500 (A3)
METRES

Drawing references	
274/T/101	TREE CONSTRAINTS PLAN SHEET 1 OF 18
274/T/102	TREE CONSTRAINTS PLAN SHEET 2 OF 18
274/T/103	TREE CONSTRAINTS PLAN SHEET 3 OF 18
274/T/104	TREE CONSTRAINTS PLAN SHEET 4 OF 18
274/T/105	TREE CONSTRAINTS PLAN SHEET 5 OF 18
274/T/106	TREE CONSTRAINTS PLAN SHEET 6 OF 18
274/T/107	TREE CONSTRAINTS PLAN SHEET 7 OF 18
274/T/108	TREE CONSTRAINTS PLAN SHEET 8 OF 18
274/T/109	TREE CONSTRAINTS PLAN SHEET 9 OF 18
274/T/110	TREE CONSTRAINTS PLAN SHEET 10 OF 18
274/T/111	TREE CONSTRAINTS PLAN SHEET 11 OF 18
274/T/112	TREE CONSTRAINTS PLAN SHEET 12 OF 18
274/T/114	TREE CONSTRAINTS PLAN SHEET 14 OF 18
274/T/115	TREE CONSTRAINTS PLAN SHEET 15 OF 18
274/T/116	TREE CONSTRAINTS PLAN SHEET 16 OF 18
274/T/117	TREE CONSTRAINTS PLAN SHEET 17 OF 18
274/T/118	TREE CONSTRAINTS PLAN SHEET 18 OF 18

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Project	KINGMOOR WREXHAM INDUSTRIAL ESTATE	Dwg No	274/T/113	Date	03/05/2023	Revision	Date	Details	Drawn	Checked	Reviewed	 Chartered Member of the Landscape Institute Landscape Institute Registered Practice mdlandscape 6 Kinderton Close High Legh Knutsford Cheshire WA16 6LZ 07710 498231
						P01	03/05/2023	FOR INFORMATION	MD		MD	
Title	TREE CONSTRAINTS PLAN SHEET 13 OF 18	Scale	1:250 @ A1 / 1:500 @ A3	Date	03/05/2023							



Location Plan
0 10 20 30 40 50 60 70 80 90 100
SCALE 1:5000 (A1)
SCALE 1:10000 (A3)
METRES

- Legend
- Trees categorised in accordance with BS5837:2012 Trees in relation to design, demolition and construction : Recommendations
This drawing must be reproduced in colour
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 - CATEGORY U - unsuitable for retention
 - HEDGE - CANOPY EXTENTS
 - ROOT PROTECTION AREA (RPA)
 - REFERENCE - tree, group, woodland
 - POTENTIAL VETERAN TREE
 - NOT SURVEYED
 - TREE AS PLOTTED ON TOPO SURVEY
 - SURVEY EXTENTS

TREE CONSTRAINTS PLAN
0 5 10 15 20
SCALE 1:250 (A1)
SCALE 1:500 (A3)
METRES

Drawing references	
274/T/101	TREE CONSTRAINTS PLAN SHEET 1 OF 18
274/T/102	TREE CONSTRAINTS PLAN SHEET 2 OF 18
274/T/103	TREE CONSTRAINTS PLAN SHEET 3 OF 18
274/T/104	TREE CONSTRAINTS PLAN SHEET 4 OF 18
274/T/105	TREE CONSTRAINTS PLAN SHEET 5 OF 18
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274/T/116	TREE CONSTRAINTS PLAN SHEET 16 OF 18
274/T/117	TREE CONSTRAINTS PLAN SHEET 17 OF 18
274/T/118	TREE CONSTRAINTS PLAN SHEET 18 OF 18

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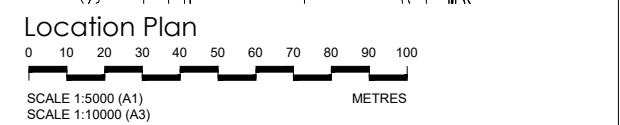
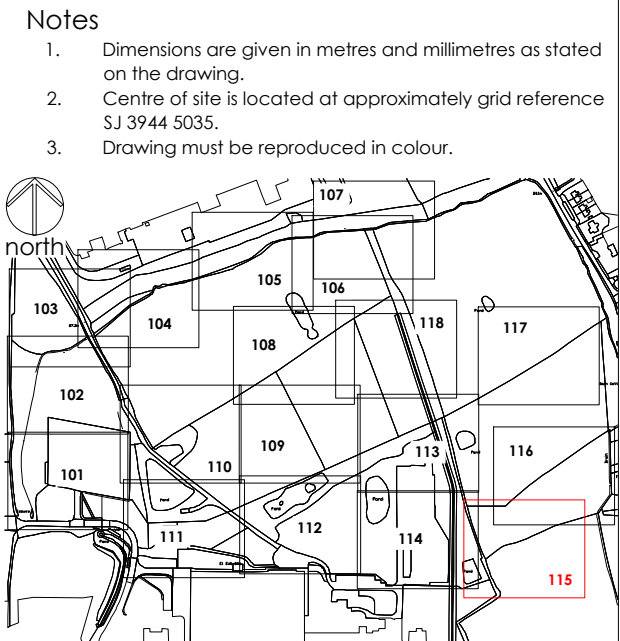
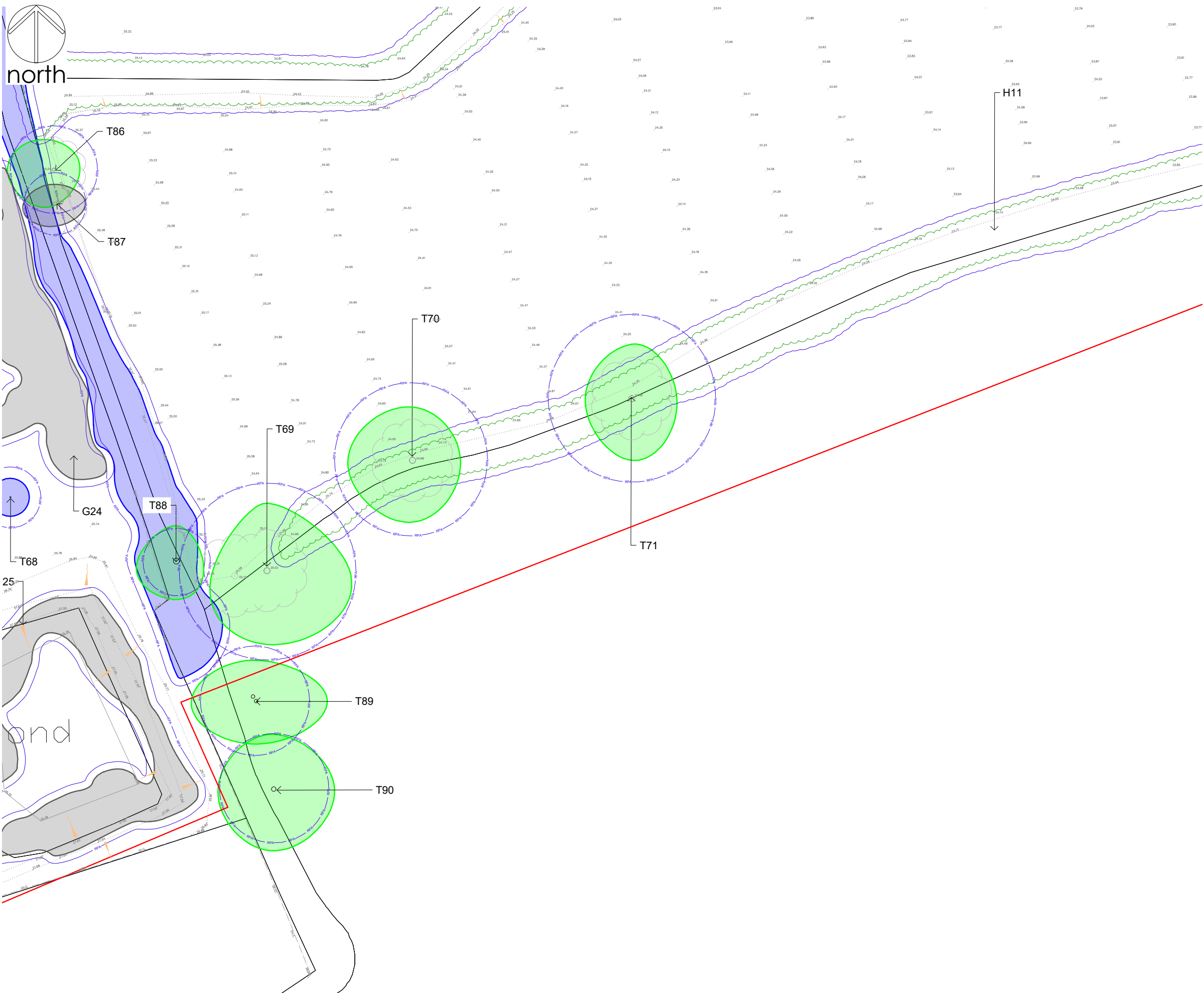
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Title	TREE CONSTRAINTS PLAN SHEET 14 OF 18	Scale	1:250 @ A1 / 1:500 @ A3	Date	03/05/2023					



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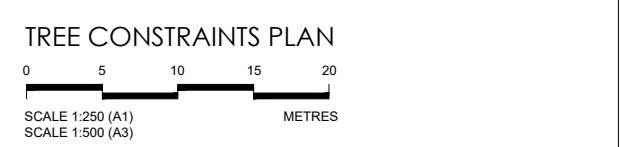
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Legend

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Drawing references	
274/T/101	TREE CONSTRAINTS PLAN SHEET 1 OF 18
274/T/102	TREE CONSTRAINTS PLAN SHEET 2 OF 18
274/T/103	TREE CONSTRAINTS PLAN SHEET 3 OF 18
274/T/104	TREE CONSTRAINTS PLAN SHEET 4 OF 18
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274/T/114	TREE CONSTRAINTS PLAN SHEET 14 OF 18
274/T/116	TREE CONSTRAINTS PLAN SHEET 16 OF 18
274/T/117	TREE CONSTRAINTS PLAN SHEET 17 OF 18
274/T/118	TREE CONSTRAINTS PLAN SHEET 18 OF 18

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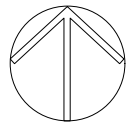
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Project	KINGMOOR WREXHAM INDUSTRIAL ESTATE	Dwg No	274/T/115	Revision	Date	Details	Drawn	Checked	Reviewed
Title	TREE CONSTRAINTS PLAN SHEET 15 OF 18	Scale	1:250 @ A1 / 1:500 @ A3	Date	03/05/2023				

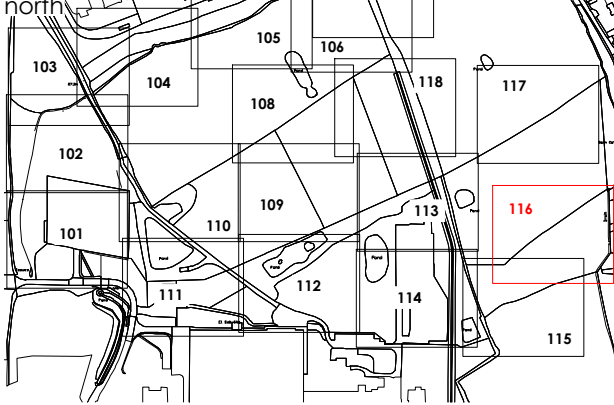


north

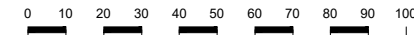


Notes

1. Dimensions are given in metres and millimetres as stated on the drawing.
2. Centre of site is located at approximately grid reference SJ 3944 5035.
3. Drawing must be reproduced in colour.



Location Plan



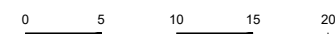
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SCALE 1:10000 (A3)

Legend

Trees categorised in accordance with BS5837:2012 Trees in relation to design, demolition and construction : Recommendations
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- SURVEY EXTENTS

TREE CONSTRAINTS PLAN



SCALE 1:250 (A1)
SCALE 1:500 (A3)

Drawing references	
274/T/101	TREE CONSTRAINTS PLAN SHEET 1 OF 18
274/T/102	TREE CONSTRAINTS PLAN SHEET 2 OF 18
274/T/103	TREE CONSTRAINTS PLAN SHEET 3 OF 18
274/T/104	TREE CONSTRAINTS PLAN SHEET 4 OF 18
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274/T/114	TREE CONSTRAINTS PLAN SHEET 14 OF 18
274/T/115	TREE CONSTRAINTS PLAN SHEET 15 OF 18
274/T/117	TREE CONSTRAINTS PLAN SHEET 17 OF 18
274/T/118	TREE CONSTRAINTS PLAN SHEET 18 OF 18

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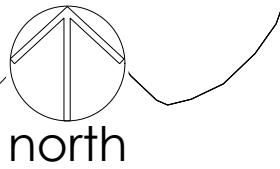
Title TREE CONSTRAINTS PLAN
SHEET 16 OF 18

Scale
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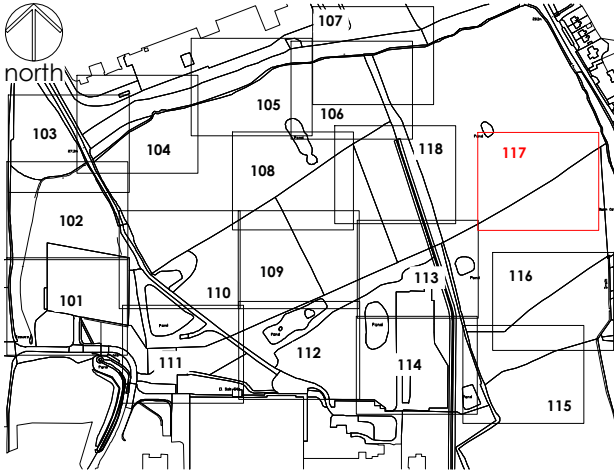
Date
03/05/2023

Revision	Date	Details	Drawn	Checked	Reviewed
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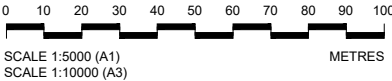
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- Notes
1. Dimensions are given in metres and millimetres as stated on the drawing.
 2. Centre of site is located at approximately grid reference SJ 3944 5035.
 3. Drawing must be reproduced in colour.



Location Plan



Legend

Trees categorised in accordance with BS5837:2012 Trees in relation to design, demolition and construction : Recommendations
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TREE CONSTRAINTS PLAN



Drawing references	
274/T/101	TREE CONSTRAINTS PLAN SHEET 1 OF 18
274/T/102	TREE CONSTRAINTS PLAN SHEET 2 OF 18
274/T/103	TREE CONSTRAINTS PLAN SHEET 3 OF 18
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274/T/115	TREE CONSTRAINTS PLAN SHEET 15 OF 18
274/T/116	TREE CONSTRAINTS PLAN SHEET 16 OF 18
274/T/118	TREE CONSTRAINTS PLAN SHEET 18 OF 18

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Dwg No
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Title TREE CONSTRAINTS PLAN
SHEET 17 OF 18

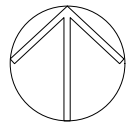
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Date
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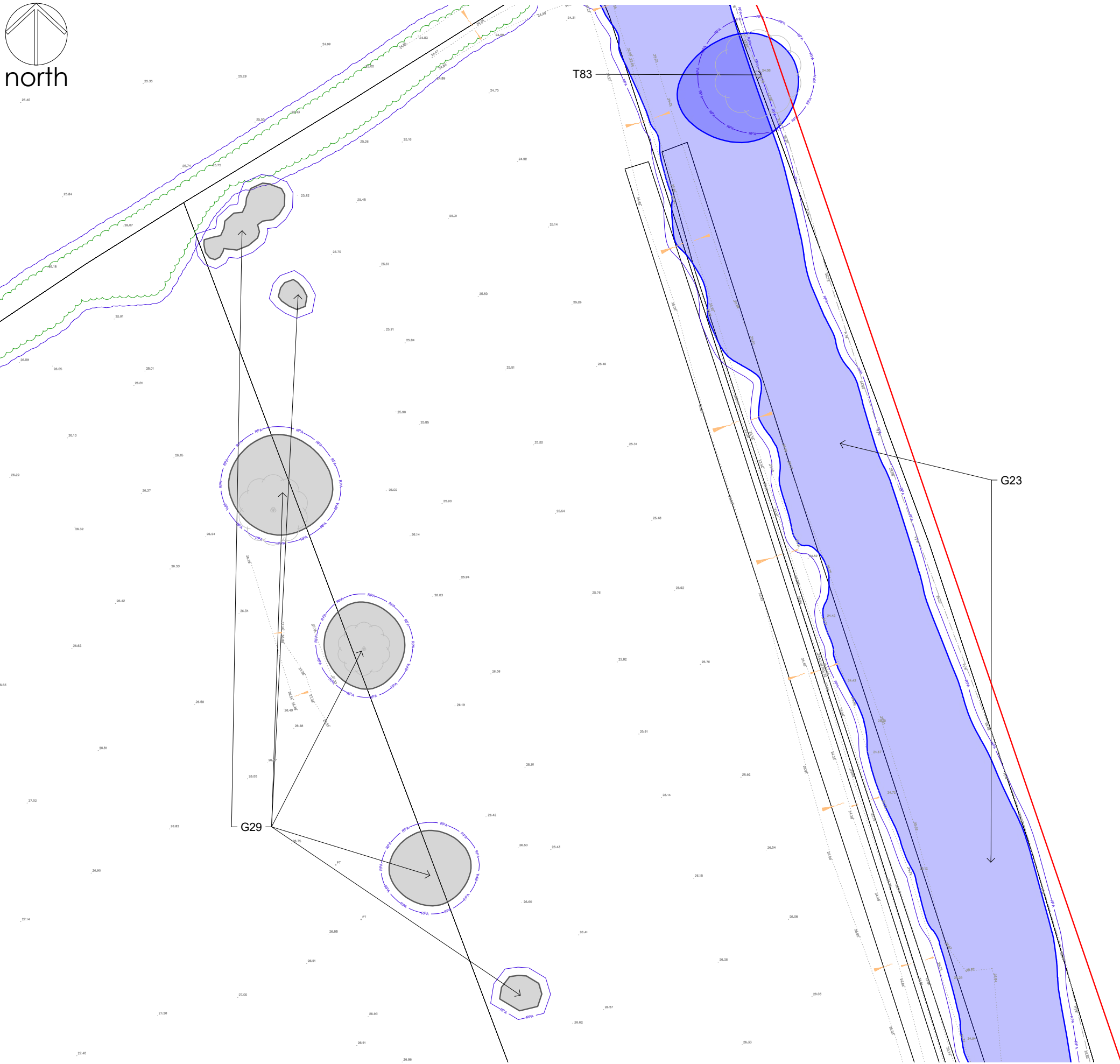
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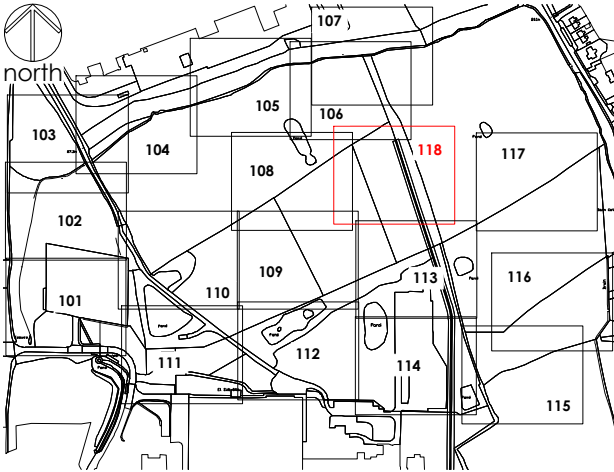


north



Notes

1. Dimensions are given in metres and millimetres as stated on the drawing.
2. Centre of site is located at approximately grid reference SJ 3944 5035.
3. Drawing must be reproduced in colour.



Location Plan



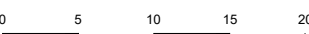
SCALE 1:5000 (A1)
SCALE 1:10000 (A3)

Legend

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TREE CONSTRAINTS PLAN



SCALE 1:250 (A1)
SCALE 1:500 (A3)

Drawing references	
274/T/101	TREE CONSTRAINTS PLAN SHEET 1 OF 18
274/T/102	TREE CONSTRAINTS PLAN SHEET 2 OF 18
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274/T/117	TREE CONSTRAINTS PLAN SHEET 17 OF 18

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Date
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Revision	Date	Details	Drawn	Checked	Reviewed
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12 APPENDICES

APPENDIX 1 - ARBORICULTURAL SURVEY DATA SHEETS – refer to Tree Constraints Plans 274/T/100-118 inclusive.

Site	Kingmoor,	Surveyor	Marianne Dobson	Date	May 2023	Weather	Generally mild and dry	Drawing	274/T/100-118 inclusive
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The information in the data sheets is correct as of time of survey. Trees are dynamic organisms and their condition can change as a result of changes in their environment, stress factors, physical and man-made conditions.

Tree ref T - individual G - Group W - Woodland H - Hedgerow V-Veteran	Species Latin name Common name	Height (m)	Stem dia. (mm) basal dia. (BD)	Crown spread (Where not measured on site, dimensions have been calculated using Bluesky aerial imagery) N S E W				Direction and height of lowest branch (m)	Height of crown clearance (m)	Maturity Young; Semi- mature; Middle Age; Early mature; Mature	Structural condition Good; Fair; Poor; Veteran	Physiological condition Good; Fair; Poor; Veteran	Comments on form condition, health and significant defects	BS5837 Tree Quality Category A, B, C, U (1,2,3)	Radius of RPA (m)	Management recommendations Reinspect all retained trees two years from survey date	Estimated remaining contribution less than 10yrs, 10- 20, 20-40, 40yrs+
TREES - estimated measurements are underlined																	
T1	Populus nigra 'Italica' (Lombardy poplar)	22	1400	4	3	6	3	not recorded	2	Over mature	Poor	Poor	Cavity at base with split up to union where bifurcate at 2.5m; tree at risk of failure; recommend removal	U	16.8	Remove	<10 years
T2	Quercus robur (English oak)	11	540	7	8.5	7	6	not recorded	not recorded	Middle Age	Good	Good	Spreading crown; ivy clad; dead wood throughout crown; landscape and habitat value	A2	6.48		40 years +
T3	Quercus robur (English oak)	10	560	8	7	5.5	7	not recorded	not recorded	Middle Age	Good	Good	Spreading crown; ivy clad; dead wood throughout crown; landscape and habitat value	A2	6.72		40 years +
T4	Quercus robur (English oak)	14	<u>750</u>	8.5	8	7.5	8	not recorded	not recorded	Mature	Good	Good	Access impeded for close inspection due to bramble and scrub; spreading crown; ivy clad; occasional dead wood throughout crown; landscape and habitat value	A2	9		40 years +
T5	Quercus robur (English oak)	14	<u>800</u>	7	5	4.5	6	not recorded	not recorded	Mature	Good	Good	Access impeded for close inspection due to bramble and scrub; spreading crown; ivy clad; occasional dead wood throughout crown; landscape and habitat value	A2	9.6		40 years +
T6	Fraxinus excelsior (ash)	14	<u>540</u>	5.5	9.5	6	7	not recorded	not recorded	Mature	Good	Good	Access impeded for close inspection due to bramble and scrub; spreading	B2	6.48		20-40 years

Tree ref T - individual G - Group W - Woodland H - Hedgerow V-Veteran	Species Latin name Common name	Height (m)	Stem dia. (mm) basal dia. (BD)	Crown spread (Where not measured on site, dimensions have been calculated using Bluesky aerial imagery) N S E W				Direction and height of lowest branch (m)	Height of crown clearance (m)	Maturity Young; Semi- mature; Middle Age; Early mature; Mature	Structural condition Good; Fair; Poor; Veteran	Physiological condition Good; Fair; Poor; Veteran	Comments on form condition, health and significant defects	BSS837 Tree Quality Category A, B, C, U (1,2,3)	Radius of RPA (m)	Management recommendations Reinspect all retained trees two years from survey date	Estimated remaining contribution less than 10yrs, 10- 20, 20-40, 40yrs+
													crown; ivy clad; landscape value				
T7	Fraxinus excelsior (ash)	12	<u>280</u>	5	9	6.5	6.5	not recorded	not recorded	Mature	Good	Good	Access impeded for close inspection due to bramble and scrub; spreading crown; ivy clad; landscape value	A2	3.36		20-40 years
T8	Quercus robur (English oak)	11	<u>650</u>	6	7	7.5	8.5	not recorded	not recorded	Mature	Good	Good	At edge of woodland group adjacent to track; spreading crown; minor dead wood	A2	7.8		40 years +
T9	Quercus robur (English oak)	8	340	6.5	2	5.5	6	N2	2	Early Mature	Good	Good	Crown suppressed to south; minor dead wood	B2	4.08		20-40 years
T10	Fraxinus excelsior (ash)	10	380	2.5	3.5	6	4	S1.5	2.5	Early Mature	Fair	Good	Bifurcate with twisted and fused stems; natural bracing	C2	4.56		10-20 years
T11	Quercus robur (English oak)	9	680	4.5	4.5	5	3	N2.5	3.5	Mature	Fair	Fair	Torn out branches and cavities at 2.5m W; habitat value; occlusion of wounds but in decline	B3	8.16		20-40 years
T12	Fraxinus excelsior (ash)	8	200	2.5	3.5	2.5	2.5	S2.5	3	Semi- mature	Good	Good	Good form and condition	B2	2.4		20-40 years
T13	Quercus robur (English oak)	9	780	5	4.5	8	5	N1.8	2	Mature	Fair	Fair	Cavity at base up to 1.8m on NW side; cracks and cavities to stem; dieback in crown; habitat value	B3	9.36		20-40 years
T14	Quercus robur (English oak)	12	840	7	7.5	9	8	N2	2	Mature	Good	Good	Previous loss of side branch now fully occluded; minor dead wood; spreading crown and good form	A2	10.08		40 years +
T15	Quercus robur (English oak)	7	400	3.5	5	4.5	5	W3	2.5	Early Mature	Fair	Fair	Access impeded for closer inspection; die back in crown; ivy clad	C2	4.8		10-20 years
T16	Quercus robur (English oak)	17	880	5	5.5	7	8	W2.5	3	Mature	Fair	Fair	Established cavity at base of stem; woodworm to heartwood; movement of rootplate and locally raised ground to south, leaning to north; dieback in crown	B3	10.56		20-40 years
T17	Quercus robur (English oak)	14	760	5	7	6	7.5	SE3.5	2.5	Mature	Good	Good	Minor cavities to stem and branches, potential bat roost features; branch	A3	9.12		40 years +

Tree ref T - individual G - Group W - Woodland H - Hedgerow V-Veteran	Species Latin name Common name	Height (m)	Stem dia. (mm) basal dia. (BD)	Crown spread (Where not measured on site, dimensions have been calculated using Bluesky aerial imagery) N S E W				Direction and height of lowest branch (m)	Height of crown clearance (m)	Maturity Young; Semi- mature; Middle Age; Early mature; Mature	Structural condition Good; Fair; Poor; Veteran	Physiological condition Good; Fair; Poor; Veteran	Comments on form condition, health and significant defects	BSS837 Tree Quality Category A, B, C, U (1,2,3)	Radius of RPA (m)	Management recommendations Reinspect all retained trees two years from survey date	Estimated remaining contribution less than 10yrs, 10- 20, 20-40, 40yrs+
													shedding at collar; spreading crown				
T18	Quercus robur (English oak)	15	960	5	10	9	9	N2.5	1.5	Mature	Good	Good	Recently broken branch, possible machine damage; located at edge of ditch; prominent tree; spreading crown	A2	11.52		40 years +
T19	Betula pendula (silver birch)	17	370	5.5	4	5.5	3	N4	4.5	Early Mature	Good	Good	Ivy clad stem; broken lower branches possible machine damage; sweep to stem at base but self corrected	B2	4.44		20-40 years
T20	Salix caprea (goat willow)	15	<u>600</u> <u>basal</u> <u>dia.</u>	5	6	4	8.5	N1.8	2.5	Middle Age	Fair	Fair	Multistemmed at base with spreading crown	C2	6		10-20 years
T21	Quercus robur (English oak)	8	780	6	9.5	8	6	S3	1	Mature	Good	Good	Ivy clad stem; branch loss to west side; potential cavities hidden by ivy; spreading crown	A2	9.36		40 years +
T22	Betula pendula (silver birch)	8	140	2.5	2.5	2.5	2.5	S2.5	2	Semi- mature	Good	Good	Good form and condition, symmetrical crown	B1	1.68		20-40 years
T23	Quercus robur (English oak)	10	<u>620</u>	7	3.5	6	6	not recorded	not recorded	Mature	Good	Good	At edge of ditch and woodland; wire fence attached to stem; crown biased to north	A2	7.44		20-40 years
T24	Fraxinus excelsior (ash)	20	440	6	6	6	6	not recorded	not recorded	Middle Age	Good	Good	At edge of ditch; minor ivy growth	B1	5.28		20-40 years
T25	Fraxinus excelsior (ash)	22	550	5	9.5	4.5	9	NW2.5	3	Middle Age	Fair	Fair	Black exudation from stem; deadwood and die back to branches with woodpecker holes and small cavities; potential bat roost features and habitat value	B3	6.6		20-40 years
T26	Fraxinus excelsior (ash)	16	420	0	7	4	1	SW3	2	Middle Age	Fair	Good	Leaning to south with self corrected growth	C2	5.04		10-20 years
T27	Quercus robur (English oak)	18	510	4	8	6.5	6	NW2.5	1.5	Middle Age	Good	Good	Good form and condition; minor dead wood; landscape value	A2	6.12		40 years +
T28	Quercus robur (English oak)	10	530	0	10	6	11	S2.5	1	Middle Age	Fair	Fair	Heavily suppressed to north; dead wood to north side and west to scaffold branch; slow occlusion at branch loss locations; habitat value	B3	6.36		20-40 years

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T29	Fraxinus excelsior (ash)	12	450	5	8.5	4.5	8	W3	1.5	Middle Age	Good	Good	Inspection access impeded by scrub	B2	5.4		20-40 years
T30	Quercus robur (English oak)	11	500	6	8.5	3	9	NE3.5	1	Middle Age	Good	Good	Spreading crown but suppressed to east; branches of T31 hung up in crown	B2	6		20-40 years
T31	Salix alba (white willow)	22	640	7	11	2	12	S2.5	1.5	Mature	Fair	Good	Collapsed crown and broken branches in north side of upper crown; open spreading habit	C2	7.68		10-20 years
T32	Salix alba (white willow)	25	910	12	11.5	6	15	N3	0.5	Over mature	Fair	Good	Collapsed crown and broken branches in east side of upper crown; open spreading habit; west side in better condition, but branches have been shed	C2	10.92		10-20 years
T33	Salix alba (white willow)	22	600	4	12	10	7	S3	0	Mature	Fair	Good	Bifurcate at 3m with spreading crown; minor dead wood and broken branches but in better condition than T31 and T32	B2	7.2		20-40 years
T34	Quercus robur (English oak)	18	650	7	7.5	6.5	8	SW3	1.5	Mature	Good	Good	Significant tree with spreading crown; good form and condition	A1, A2	7.8		40 years +
T35(V)	Quercus robur (English oak)	10	1170	6	9.5	8.5	6.5	SW2.5	0.5	Over mature	Veteran	Veteran	Significant tree and potential veteran; 3.65m circumference/girth; knotty and burred trunk; cavities and splits to stem with exposed heartwood; wounds occluding and healthy crown	A2, A3	14.04		40 years +
T36(V)	Quercus robur (English oak)	13	1440	8	6.5	5	7	S2.5	1.5	Over mature	Veteran	Veteran	Significant tree and potential veteran; 4.4m circumference/girth; hollow stem which has been filled with lumps of concrete; crown is healthy; stem to south side has bark loss and is partially separated from the main stem and lifting at the root flare	A2, A3	17.28		40 years +

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T37	Quercus robur (English oak)	18	<u>700</u>	9	9.5	6	8.5	S3.5	1.5	Mature	Good	Good	On north side of stream; no access for survey; crown extends over brook	A2, A3	8.4		40 years +
T38	Crataegus monogyna (hawthorn)	6	<u>400</u> basal dia.	2	2	2	2	0	0	Mature	Fair	Good	Suppressed form	C2	4		10-20 years
T39	Quercus robur (English oak)	14	450	8	7	5.5	6	S3	1.2	Middle Age	Good	Good	Bifurcate at 3.5m; no access for inspection due to dense scrub; good form and condition	A2	5.4		40 years +
T40	Fraxinus excelsior (ash)	14	200 350	5	5	6	4	E0.5	4.5	Mature	Good	Good	No access for inspection due to dense scrub; spreading crown	B2	4		20-40 years
T41	Ulmus glabra (wych elm)	8	<u>200</u>	3	3	2	3	0	0	Semi- mature	Good	Good	Edge of group adjacent to gate; shrubby growth with spreading crown and suckers to base	C2	2.4		10-20 years
T42	Acer campestre (field maple)	8	<u>140 130</u>	4.5	4.5	4	4	not recorded	not recorded	Early Mature	Good	Good	Bifurcate at base with spreading crown	B2	1.9		20-40 years
T43	Quercus robur (English oak)	11	<u>400</u>	5.5	5.5	7	5	not recorded	not recorded	Early Mature	Good	Good	At corner of field boundaries; no access for inspection due to dense scrub; good form and condition	A2	4.8		40 years +
T44	Salix caprea (goat willow)	9	<u>1000</u> basal dia.	5.5	6	6.5	5.5	not recorded	not recorded	Early Mature	Good	Good	Large multistemmed tree on bank at boundary to field; spreading crown	C2	10		10-20 years
T45	Quercus robur (English oak)	5	<u>700</u>	2	0	0	1	NW2.5	4	Mature	Poor	Poor	Dead hollow stem to 3.5m height with one side branch to NW; no bark to root flare for 80% of stem; cavity at base; habitat value	B3	8.4	Allow stem to continue to decay as habitat feature / biodiversity value	20-40 years
T46	Quercus robur (English oak)	8	180	2.5	2.5	2.5	2.5	NE1.5	1.5	Semi- mature	Good	Good	Planted as tree to hedgerow along roadside; stake removed during survey; good form and condition with symmetrical crown; potential to develop into tree of higher category rating	B2	2.16	Avoid pruning tree when pruning hedgerow	20-40 years
T47	Prunus avium (wild cherry)	16	220	4.5	4.5	4.5	4.5	not recorded	not recorded	Semi- mature	Good	Good	No access for inspection due to dense scrub;	B2	2.64		20-40 years

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													spreading crown and vigorous growth				
T48	Quercus robur (English oak)	8	180	2.5	2.5	2.5	2.5	not recorded	not recorded	Semi- mature	Good	Good	Planted as tree to hedgerow along roadside; stake removed during survey; good form and condition with symmetrical crown; potential to develop into tree of higher category rating	B2	2.16	Avoid pruning tree when pruning hedgerow	20-40 years
T49	Quercus robur (English oak)	8	180	2.5	2.5	2.5	2.5	NE1.5	1.5	Semi- mature	Good	Good	Planted as tree to hedgerow along roadside; stake removed during survey; good form and condition with symmetrical crown; potential to develop into tree of higher category rating	B2	2.16	Avoid pruning tree when pruning hedgerow	20-40 years
T50	Malus sylvestris (crab apple)	8	250	4.5	4	5.5	7.5	not recorded	not recorded	Early Mature	Good	Good	Tree of good form and condition; landscape and habitat value	A2, A3	3		40 years +
T51	Fraxinus excelsior (ash)	8	220	3	3.5	4	4.5	E1.5	0	Semi- mature	Good	Good	Tree growing on concrete headwall to culvert; good form and condition and symmetrical crown; likely to cause damage to culvert over time	B2	2.64		20-40 years
T52	Quercus robur (English oak)	8	690	5	3.5	5.5	4.5	N2.2	2.5	Mature	Good	Good	At edge of lorry park; ivy clad stem; previous pruning to lower stem on west side to remove branches overhanging lorry park	B2	8.28		20-40 years
T53	Quercus robur (English oak)	14	710	7.5	8	6	8.5	S4	3	Mature	Good	Good	At edge of pond; natural shedding of lower branches; prominent tree of good form and condition	A1, A2	8.52		40 years +
T54	Betula pendula (silver birch)	15	190 200	5	5	5	5	N2.5	3	Early Mature	Good	Good	Bifurcate at base with tension fork; good condition	B2	2.8		20-40 years
T55	Salix caprea (goat willow)	14	<u>1200</u> <u>basal</u> <u>dia.</u>	6	5	6	4	S0.5	1	Early Mature	Good	Good	Multistemmed at base with spreading crown extending over pond	C2	12		10-20 years

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T56	Salix caprea (goat willow)	7	<u>450</u> basal dia.	0	7	4	4	S0.5	0	Middle Age	Fair	Good	Multistemmed at base and overhanging pond	C2	4.5		10-20 years
T57	Betula pendula (silver birch)	14	220	5	4	1	5	NW3	0.5	Semi- mature	Good	Good	At pond edge	B2	2.64		20-40 years
T58	Quercus robur (English oak)	13	920	7.5	9	6.5	8.5	S1.5	0	Mature	Good	Good	At pond edge; bark loss at base of south side of stem but occluding; prominent tree; natural pruning/branch shedding	A3	11.04		40 years +
T59	Salix caprea (goat willow)	10	<u>600</u> basal dia.	4	3.5	3.5	4	not recorded	not recorded	Mature	Good	Good	Multistemmed at base and overhanging pond	C2	6		10-20 years
T60	Betula pendula (silver birch)	7	250	4	6	5	2.5	not recorded	not recorded	Early Mature	Poor	Poor	Poor form and condition	C3	3		<10 years
T61	Betula pendula (silver birch)	13	330 120	6.5	6	5.5	5	S0	0.5	Early Mature	Good	Good	At pond edge; epicormic at base and larger side stem	C2	3.2		10-20 years
T62	Salix caprea (goat willow)	10	<u>1200</u> basal dia.	6	7	5.5	6	0	0	Middle Age	Fair	Good	Multistemmed at base and overhanging pond; vigorous growth	C2	12		10-20 years
T63	Salix caprea (goat willow)	10	<u>900</u> basal dia.	5	6	4.5	5	0	0	Middle Age	Fair	Good	Multistemmed at base and overhanging pond; vigorous growth	C2	9		10-20 years
T64	Populus nigra 'Italica' (Lombardy poplar)	20	<u>1000</u>	4	6	4	5	not recorded	not recorded	Mature	Good	Good	On island no access for survey	B2	12		20-40 years
T65	Betula pendula (silver birch)	18	350 410	6.5	5.5	3.5	5	N1.8	2	Mature	Good	Good	Bifurcate at base with tension fork; good form and condition	B2	5.4		20-40 years
T66	Betula pendula (silver birch)	16	380	5.5	5.5	4	5	W1.5	1	Middle Age	Good	Good	Good form and condition	B2	4.56		20-40 years
T67	Fraxinus excelsior (ash)	14	<u>440</u>	8	3.5	7	5.5	not recorded	not recorded	Middle Age	Good	Good	No access for close inspection; appears to be of good form and condition	B1	5.28		20-40 years
T68	Crataegus monogyna (hawthorn)	6	<u>400</u> basal dia.	2.5	2.5	2.5	2.5	not recorded	not recorded	Middle Age	Good	Good	No access for survey due to dense bramble	B3	4		20-40 years
T69	Quercus robur (English oak)	18	970	9	10.5	11	8	W2	1.2	Mature	Good	Good	Prominent tree of good form and condition; wires from fence embedded in bark to stem; branch loss on south side but good occlusion	A2	11.64		40 years +

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T70	Quercus robur (English oak)	17	<u>840</u>	7	9	6	8.5	N2.5	1.5	Mature	Good	Good	Prominent tree of good form and condition; bifurcate at 3.5m; cavity to west at 4m and to main scaffold branch/leader; wires from fence embedded in bark to stem	A2	10.08		40 years +
T71	Quercus robur (English oak)	18	<u>920</u>	7	8	6	6	NE2	1	Mature	Good	Good	Biased growth to east; good form and condition; minor cavity to base; natural pruning/branch collar shedding	A2	11.04		40 years +
T72	Quercus robur (English oak)	16	<u>1050</u>	6	6.5	7	7.5	N1	1	Over mature	Fair	Fair	Dieback starting in crown and beginning stages of decline in height; potential to develop into veteran; hollow and cavity at the base that may extend up into the stem; burring to stem; branch and bud structure sparser than other oaks in vicinity.	A3	12.6		40 years +
T73	Quercus robur (English oak)	16	<u>550</u>	6	7	9	11	N3	1.5	Middle Age	Fair	Poor	Loss of leader and spreading open crown with dieback; tree in decline; habitat value	B3	6.6		20-40 years
T74	Fraxinus excelsior (ash)	16	<u>440</u>	4	6	6	4.5	not recorded	not recorded	Middle Age	Fair	Fair	Sparse branching and dieback in crown	C2	5.28		10-20 years
T75	Quercus robur (English oak)	15	<u>950</u>	8	9	10	8	NW3	2	Mature	Good	Good	Prominent tree of good form and condition with wide spreading crown	A1, A2	11.4		40 years +
T76	Acer campestre (field maple)	8	<u>350</u>	4	4.5	4	3	S2	2	Early Mature	Fair	Fair	Hollow stem and in decline; dieback in crown and stunted growth; habitat value	C2	4.2		10-20 years
T77	Quercus robur (English oak)	12	<u>520</u>	5.5	8	6.5	6	NW3.5	2	Middle Age	Good	Good	Dieback to scaffold branch; dead wood to east side in upper crown; branch tear out on south side	B2	6.24		20-40 years
T78	Quercus robur (English oak)	10	<u>480</u>	5.5	7	7.5	6	S1.8	1.5	Middle Age	Good	Good	Tree of balanced crown and good form and condition	A1, A2	5.76		40 years +
T79	Quercus robur (English oak)	8	<u>500</u>	5	5	6	4.5	W2.5	1.8	Early Mature	Good	Fair	Branch tear out at 3.5m on east side with cavity, slow	B2, B3	6		20-40 years

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													to occlude; balanced crown; barbed wire to stem				
T80	Quercus robur (English oak)	6	<u>350</u>	3.5	4.5	4.5	4	N2.5	2	Early Mature	Fair	Poor	In decline and in poor condition; leave to develop as standing dead wood	B3	4.2		20-40 years
T81	Quercus robur (English oak)	16	<u>950</u>	6	8	6.5	6.5	SW2.5	1	Mature	Good	Good	Prominent tree; bifurcate at 3.5m; good form and condition; minor dead wood and natural pruning/branch collar shedding	A2	11.4		40 years +
T82	Quercus robur (English oak)	10	<u>1100</u>	3.5	7	5.5	7	0	0	Over mature	Fair	Fair	Cavity at base of stem with dead wood; declining in stature/shrinking into veteran phase; lower stem growth	A3	13.2		40 years +
T83	Quercus robur (English oak)	14	<u>600</u>	not recorded	not recorded	not recorded	not recorded	not recorded	not recorded	Mature	Good	Good	tree to site boundary with no access for inspection; assessment based on inspection using binoculars from south aspect and distant views only.	B2	7.2		40 years +
T84	Quercus robur (English oak)	8	<u>220</u>	3.5	7	5.5	7	not recorded	not recorded	Semi- mature	Good	Good	Good form and condition; slightly suppressed by dense hedge growth; potential to grow into tree of higher category rating	B1, B2	2.64		20-40 years
T85	Quercus robur (English oak)	9	<u>440</u>	3	4	4	3.5	N3.5	2	Middle Age	Good	Good	Detailed inspection hindered by dense scrubby hedgerow; spreading crown	B1, B2	5.28		20-40 years
T86	Quercus robur (English oak)	13	<u>480</u>	4	5.5	4.5	6	SE2	1.5	Middle Age	Good	Good	Barbed wire to stem; good form and condition	A2	5.76		20-40 years
T87	Salix caprea (goat willow)	8	<u>400</u> <u>basal</u> <u>dia.</u>	2	3.5	4	4.5	0	0	Early Mature	Good	Good	Multistemmed and spreading crown	C2	4		10-20 years
T88	Quercus robur (English oak)	10	370	4.5	6	4	5.5	W1.8	2	Early Mature	Good	Good	Bifurcate at 3.5m and good form and condition	A2	4.44		40 years +
T89	Quercus robur (English oak)	16	500 520	5	6	9	8.5	not recorded	not recorded	Mature	Good	Good	Tree with wide twin stem conjunction at the base; on land adjacent to the development area;	A2	7.2		40 years +

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													prominent tree of good form and condition				
T90	Quercus robur (English oak)	16	600	7	8.5	8.5	7.5	not recorded	not recorded	Mature	Good	Good	On land adjacent to the development area; prominent tree of good form and condition	A2	7.2		40 years +
T91	Acer pseudoplatanus (sycamore)	6	<u>240</u>	5	5	5	5	SE3	3.5	Semi- mature	Good	Good	Good form and condition; no access for close inspection due to dense scrub	B1	2.88		20-40 years
T92	Quercus robur (English oak)	10	<u>600</u>	6.5	7	8	9	S3.5	3	Middle Age	Good	Good	Prominent tree; torn out scaffold branch and lost main leader; wounds occluding; spreading crown despite branch losses; landscape and habitat value	B2, B3	7.2		20-40 years
T93	Acer pseudoplatanus (sycamore)	7	<u>260</u>	5.5	4	4.5	4.5	NW1.5	1.8	Semi- mature	Good	Good	Good form and condition; no access for close inspection due to dense scrub	B2	3.12		20-40 years
T94	Quercus robur (English oak)	5	<u>600</u>	7	7	7	8	not recorded	2	Semi- mature	Good	Good	Multistemmed at base; growing on fence line with some congested growth; no access for close inspection	B2	7.2		20-40 years
T95	Quercus robur (English oak)	6	<u>450</u> <u>basal</u> <u>dia.</u>	2	6.5	4.5	5.5	not recorded	0	Semi- mature	Good	Good	Multistemmed at base; growing on fence line with some congested growth; no access for close inspection	C2	4.5		10-20 years
GROUPS OF TREES Crown extents taken from topographical survey and Bluesky aerial imagery; majority of groups difficult to survey stem dia. Due to dense scrub																	
G1	Predominantly scrub species: Hawthorn Blackthorn Rose species Smaller quantities of: Silver birch, ash under 75mm dbh Goat willow Elder	up to 12	not recorded	see plan 274/T/100-116				not recorded	0	Middle Age	Good	Good	Predominantly scrub with natural regeneration of tree species below 75mm dbh; Centre line of group former hedgerow now overgrown with blackthorn suckering and forming dense scrub; good low level screening and habitat value but limited number of trees to increase to a	B2	see plan		20-40 years

Tree ref T - individual G - Group W - Woodland H - Hedgerow V-Veteran	Species Latin name Common name	Height (m)	Stem dia. (mm) basal dia. (BD)	Crown spread (Where not measured on site, dimensions have been calculated using Bluesky aerial imagery) N S E W	Direction and height of lowest branch (m)	Height of crown clearance (m)	Maturity Young; Semi- mature; Middle Age; Early mature; Mature	Structural condition Good; Fair; Poor; Veteran	Physiological condition Good; Fair; Poor; Veteran	Comments on form condition, health and significant defects	BS5837 Tree Quality Category A, B, C, U (1,2,3)	Radius of RPA (m)	Management recommendations Reinspect all retained trees two years from survey date	Estimated remaining contribution less than 10yrs, 10- 20, 20-40, 40yrs+
										higher category rating. May develop into group of higher category rating as tree species establish.				
G2	Blackthorn Hawthorn Holly Silver birch and Oak saplings under 75mm dbh	up to 6	not recorded	see plan 274/T/100-116	not recorded	0	Middle Age	Good	Good	Predominantly scrub with natural regeneration of tree species below 75mm dbh; group extends out from former hedgerow and is mostly blackthorn suckering and forming dense scrub; good low level screening and habitat value but limited number of trees to increase to a higher category rating.	C2	see plan		10-20 years
G3	Predominantly scrub species: Hawthorn Blackthorn Rose species Smaller quantities of: Goat willow to south edge of group	up to 12	not recorded	see plan 274/T/100-116	not recorded	0	Middle Age	Good	Good	Predominantly scrub with blackthorn suckering; good low level screening and habitat value but limited number of trees to increase to a higher category rating.	C2	see plan		10-20 years
G4	Predominantly scrub species: Hawthorn Blackthorn Rose species Goat willow Silver birch Smaller quantities of: Field maple Oak Sycamore White willow Crab apple	up to 16	not recorded	see plan 274/T/100-116	not recorded	0	Middle Age to Mature	Good	Good	Predominantly scrub with natural regeneration of tree species below 75mm dbh and occasional larger individuals approx 30, probably former hedgerow trees; Centre line of group former hedgerow now overgrown with blackthorn suckering and forming dense scrub; good landscape and habitat value, forms a defined boundary along the lorry car park; extends up to edge of pond with occasional willow species.	B2	see plan		20-40 years
G5	Predominantly willow species: Goat willow Smaller quantities of:	up to 18	not recorded	see plan 274/T/100-116	not recorded	0	Middle Age	Good	Good	Predominantly willow species with areas of blackthorn and hawthorn on drier ground; occasional	C2	see plan		10-20 years

Tree ref T - individual G - Group W - Woodland H - Hedgerow V-Veteran	Species Latin name Common name	Height (m)	Stem dia. (mm) basal dia. (BD)	Crown spread (Where not measured on site, dimensions have been calculated using Bluesky aerial imagery) N S E W	Direction and height of lowest branch (m)	Height of crown clearance (m)	Maturity Young; Semi- mature; Middle Age; Early mature; Mature	Structural condition Good; Fair; Poor; Veteran	Physiological condition Good; Fair; Poor; Veteran	Comments on form condition, health and significant defects	BS5837 Tree Quality Category A, B, C, U (1,2,3)	Radius of RPA (m)	Management recommendations Reinspect all retained trees two years from survey date	Estimated remaining contribution less than 10yrs, 10- 20, 20-40, 40yrs+
	White willow Silver birch Blackthorn Hawthorn Field maple									crab apple and silver birch; good low level screening and habitat value but limited number of species diversity to increase to a higher category rating. Natural regen of willow and silver birch to edges of group.				
G6	Small group: Goat willow Silver birch White willow	up to 12	not recorded	see plan 274/T/100-116	not recorded	0	Middle Age	Good	Good	Small group to edge of field; low value in the landscape	C2	see plan		10-20 years
G7	Predominantly scrub species: Hawthorn Blackthorn Rose species Goat willow Field maple Crab apple	up to 12	not recorded	see plan 274/T/100-116	not recorded	0	Middle Age	Good	Fair	Scrub with occasional field maple and crab apple but not forming a distinct feature with gaps between larger individuals.	C2	see plan		10-20 years
G8	Predominantly scrub species: Hawthorn Blackthorn Rose species Goat willow Crab apple Ash Gean	up to 12	not recorded	see plan 274/T/100-116	not recorded	0	Middle Age	Good	Good	Predominantly scrub to east of G9 ash, following line of ditch; blackthorn suckering and forming dense scrub; good low level screening and habitat value occasional larger individuals of hawthorn, Gean and crab apple but limited number of trees to increase to a higher category rating.	C2	see plan		10-20 years
G9	Linear group of ash (15)	up to 16	up to 670	see plan 274/T/100-116	not recorded	0	Mature	Good	Good	Linear group of ash alongside hedgerow to Bryn Lane; prominent feature in the landscape; generally good form and condition with no visible signs of ash dieback (ADB) at time of inspection; recommend summer inspection to assess health of crown for signs of ADB. Minor dead wood and	A2	see plan		20-40 years

Tree ref T - individual G - Group W - Woodland H - Hedgerow V-Veteran	Species Latin name Common name	Height (m)	Stem dia. (mm) basal dia. (BD)	Crown spread (Where not measured on site, dimensions have been calculated using Bluesky aerial imagery) N S E W	Direction and height of lowest branch (m)	Height of crown clearance (m)	Maturity Young; Semi- mature; Middle Age; Early mature; Mature	Structural condition Good; Fair; Poor; Veteran	Physiological condition Good; Fair; Poor; Veteran	Comments on form condition, health and significant defects	BS5837 Tree Quality Category A, B, C, U (1,2,3)	Radius of RPA (m)	Management recommendations Reinspect all retained trees two years from survey date	Estimated remaining contribution less than 10yrs, 10- 20, 20-40, 40yrs+
										broken branches where heavily shaded by hedgerow and scrub; some trees with included bark and compression forks.				
G10	Goat willow	up to 8	stems up to 220	see plan 274/T/100-116	not recorded	0	Middle Age	Good	Fair	Group of willow to south west corner of lorry park adjacent to brick buildings; single and multistemmed with spreading crowns; some pruning to reduce branches back to fence line has recently been carried out.	C2	see plan		10-20 years
G11	Oak (8) Silver birch Crab apple	up to 8	up to 250	see plan 274/T/100-116	not recorded	0	Semi-mature	Good	Good	Group of self set oak with silver birch to north and crab apple; establishing well and potential to develop into group of higher category rating.	B1, B2	see plan		20-40 years
G12	Hawthorn Blackthorn Rose species Silver birch Field maple Oak Goat willow White willow	up to 14	not recorded	see plan 274/T/100-116	not recorded	0	Semi-mature to middle age	Good	Good	Predominantly blackthorn and hawthorn scrub to drier ground with willow species to pond margin; good low level screening with habitat value occasional larger trees within group.	B2, B3	see plan		20-40 years
G13	Goat willow Occasional hawthorn	up to 8	stems up to 280	see plan 274/T/100-116	not recorded	0	Middle Age	Good	Good	Willow to pond edge with majority of crown overhanging pond; multistemmed with spreading habit and low crown; one larger individual with basal diameter over 1200; several individuals with broken branches and fallen into pond	C2	see plan		10-20 years
G14	Hawthorn	up to 10	<u>300.300</u> <u>500BD</u>	see plan 274/T/100-116	not recorded	0	Middle Age	Good	Good	Three individual hawthorn forming small distinct group within an area of bramble and ruderal growth; low crown growth	C2	see plan		10-20 years

Tree ref T - individual G - Group W - Woodland H - Hedgerow V-Veteran	Species Latin name Common name	Height (m)	Stem dia. (mm) basal dia. (BD)	Crown spread (Where not measured on site, dimensions have been calculated using Bluesky aerial imagery) N S E W	Direction and height of lowest branch (m)	Height of crown clearance (m)	Maturity Young; Semi- mature; Middle Age; Early mature; Mature	Structural condition Good; Fair; Poor; Veteran	Physiological condition Good; Fair; Poor; Veteran	Comments on form condition, health and significant defects	BS5837 Tree Quality Category A, B, C, U (1,2,3)	Radius of RPA (m)	Management recommendations Reinspect all retained trees two years from survey date	Estimated remaining contribution less than 10yrs, 10- 20, 20-40, 40yrs+
G15	Goat willow Hawthorn Blackthorn Silver birch Oak Ash	up to 12	not recorded	see plan 274/T/100-116	not recorded	0	Middle Age	Good	Good	Predominantly scrub with natural regeneration of tree species below 75mm dbh; Centre line of group former hedgerow now overgrown with blackthorn suckering and forming dense scrub; good low level screening habitat value but limited number of trees to increase to a higher category rating. May develop into group of higher category rating as tree species establish.	C2	see plan		10-20 years
G16	Predominantly scrub species: Hawthorn Blackthorn Rose species Field maple Silver birch Lower proportion of: Oak Goat willow Symphoricarpos	up to 14	not recorded	see plan 274/T/100-116	not recorded	0	Middle Age	Good	Good	Predominantly scrub with natural regeneration of tree species below 75mm dbh; blackthorn suckering and forming dense scrub; good low level screening and habitat value but limited number of trees above 75mm dbh to increase to a higher category rating. May develop into group of higher category rating as tree species establish.	C2	see plan		10-20 years
G17	Silver birch (6)Sycamore (7)	up to 12	up to 280	see plan 274/T/100-116	not recorded	0	Semi- mature	Good	Good	Group of trees forming an L-shape; generally good form and condition, one silver birch leaning to north.	B2	see plan		20-40 years
G18	Regeneration of Silver birch Sycamore Hawthorn Blackthorn	up to 6	not recorded	see plan 274/T/100-116	not recorded	0	Semi- mature	Good	Good	Predominantly scrub with natural regeneration of tree species below 75mm dbh; no access onto adjacent land for thorough inspection	C2	see plan		10-20 years
G19	Natural regeneration under 75mm dbh silver birch, field maple, oak, blackthorn, hawthorn, goat willow, with larger	up to 12	up to 100mm	see plan 274/T/100-116	not recorded	0	Young	Good	Good	Self set natural regeneration	C2	see plan		10-20 years

Tree ref T - individual G - Group W - Woodland H - Hedgerow V-Veteran	Species Latin name Common name	Height (m)	Stem dia. (mm) basal dia. (BD)	Crown spread (Where not measured on site, dimensions have been calculated using Bluesky aerial imagery) N S E W	Direction and height of lowest branch (m)	Height of crown clearance (m)	Maturity Young; Semi- mature; Middle Age; Early mature; Mature	Structural condition Good; Fair; Poor; Veteran	Physiological condition Good; Fair; Poor; Veteran	Comments on form condition, health and significant defects	BS5837 Tree Quality Category A, B, C, U (1,2,3)	Radius of RPA (m)	Management recommendations Reinspect all retained trees two years from survey date	Estimated remaining contribution less than 10yrs, 10- 20, 20-40, 40yrs+
	goat willow to east end of building													
G20	Hawthorn Field maple	up to 10	<u>up to 600 BD</u>	see plan 274/T/100-116	not recorded	0	Middle Age	Good	Good	Individual hawthorn and field maple to embankment to south boundary of site; all good form and condition; low crown to ground level with many multitemmed at base	B2	see plan		20-40 years
G21	Silver birch	up to 18	up to 250	see plan 274/T/100-116	not recorded	0	Semi-mature	Good	Good	Prominent group of silver birch on a knoll to north of mixed species group G22. 7 Single and twin-stemmed individuals with occasional hawthorn	B2	see plan		20-40 years
G22	Silver birch Field maple Goat willow Hawthorn Sycamore Alder	up to 16	up to 240	see plan 274/T/100-116	not recorded	0	Semi-mature	Good	Good	Mixed species group to south of G21 good form and condition and value as a screening group and landscape feature	B2	see plan		20-40 years
G23	Predominantly scrub planting to ditch with occasional trees Blackthorn Hawthorn Field maple Goat willow Oak Crab apple Silver birch white willow Guelder rose Italian alder	up to 10	not recorded	see plan 274/T/100-116	not recorded	0	Early Mature	Good	Good	Predominantly scrub with establishing tree species emerging from linear group; trees up to estimated 250mm dbh; linear group is a strong landscape feature when viewed from the east; good screening and habitat value	B2, B3	see plan		20-40 years
G24	Blackthorn Hawthorn	up to 5	not recorded	see plan 274/T/100-116	not recorded	0	Semi-mature	Good	Good	Area of scrub with low crown	C2	see plan		10-20 years
G25	Goat willow White willow Hawthorn Blackthorn	up to 12	not recorded	see plan 274/T/100-116	not recorded	0	Early Mature	Good	Good	No access for safe closer inspection; mixed species scrub and willow on banks around pond/reservoir	C2	see plan		10-20 years
G26	Predominantly scrub with some tree species: Blackthorn	up to 10	not recorded	see plan 274/T/100-116	not recorded	0	Middle Age	Good	Good	Predominantly scrub; Centre line of group former hedgerow now overgrown	B2, B3	see plan		20-40 years

Tree ref T - individual G - Group W - Woodland H - Hedgerow V-Veteran	Species Latin name Common name	Height (m)	Stem dia. (mm) basal dia. (BD)	Crown spread (Where not measured on site, dimensions have been calculated using Bluesky aerial imagery) N S E W	Direction and height of lowest branch (m)	Height of crown clearance (m)	Maturity Young; Semi- mature; Middle Age; Early mature; Mature	Structural condition Good; Fair; Poor; Veteran	Physiological condition Good; Fair; Poor; Veteran	Comments on form condition, health and significant defects	BS5837 Tree Quality Category A, B, C, U (1,2,3)	Radius of RPA (m)	Management recommendations Reinspect all retained trees two years from survey date	Estimated remaining contribution less than 10yrs, 10- 20, 20-40, 40yrs+
	Hawthorn Crab apple Field maple Goat willow Silver birch occasional oak under 75mm dbh									with blackthorn suckering and forming dense scrub; good low level screening and habitat value.				
G27	Goat willow White willow	up to 10	not recorded	see plan 274/T/100-116	not recorded	0	Early Mature	Good	Good	Multistemmed trees around pond and in damp ground; low branching and spreading crowns; broken branches particularly at water level.	C2	see plan		10-20 years
G28	Scrub: Blackthorn Hawthorn Buddleia Goat willow Silver birch Dogwood	up to 10	not recorded	see plan 274/T/100-116	not recorded	0	Young	Fair	Fair	Predominantly scrub with natural regeneration of tree species below 75mm dbh growing on spoil heap.	C2	see plan		10-20 years
G29	Mainly : Goat willow White willow Hawthorn With occasional: Oak and ash under 80mm dbh Blackthorn	up to 12	not recorded	see plan 274/T/100-116	not recorded	0	Middle Age	Good	Good	Predominantly scrub with natural regeneration of tree species below 75mm dbh; Centre line of group former hedgerow now overgrown with blackthorn suckering and forming dense scrub; good low level screening habitat value but limited number of trees to increase to a higher category rating. May develop into group of higher category rating as tree species establish.	C2	see plan		10-20 years
G30	Blackthorn Hawthorn	up to 12	not recorded	see plan 274/T/100-116	not recorded	0	Young to Middle age	Good	Good	Scattered individual trees to banks at field boundary to east and west of good form and condition; remaining area covered with ruderal growth and bramble	C2	see plan		10-20 years
G31	Goat willow White willow	up to 12	not recorded	see plan 274/T/100-116	not recorded	0	Early Mature	Good	Good	Individual scattered trees along embankment to pond; low crown clearance	C2	see plan		10-20 years

Tree ref T - individual G - Group W - Woodland H - Hedgerow V-Veteran	Species Latin name Common name	Height (m)	Stem dia. (mm) basal dia. (BD)	Crown spread (Where not measured on site, dimensions have been calculated using Bluesky aerial imagery) N S E W	Direction and height of lowest branch (m)	Height of crown clearance (m)	Maturity Young; Semi- mature; Middle Age; Early mature; Mature	Structural condition Good; Fair; Poor; Veteran	Physiological condition Good; Fair; Poor; Veteran	Comments on form condition, health and significant defects	BSS837 Tree Quality Category A, B, C, U (1,2,3)	Radius of RPA (m)	Management recommendations Reinspect all retained trees two years from survey date	Estimated remaining contribution less than 10yrs, 10- 20, 20-40, 40yrs+
	Hawthorn Silver birch													
G32	Blackthorn Hawthorn	up to 18	up to 420	see plan 274/T/100-116	not recorded	0	Early Mature	Good	Good	Group of approx 60 trees to corner of field with understorey of scrub: Silver birch Ash Hawthorn Field maple Goat willow	B2	see plan		20-40 years
G33	Goat willow White willow	up to 10	not recorded	see plan 274/T/100-116	not recorded	0	Early Mature	Good	Good	Multistemmed trees around pond and in damp ground; low branching and spreading crowns; broken branches particularly at water level.	C2	see plan		10-20 years
WOODLAND - Only the frontage of the woodland was surveyed, however where different species were noted to the north of the ditch/stream, these have been noted														
W1	To side of ditch to field boundary - remnant hedgerow forming edge to woodland including: Hawthorn Field maple Blackthorn Rose species Within woodland: Ash Oak White willow Grey willow Sycamore Holly Crab apple Wych elm	up to 25	not recorded	see plan 274/T/100-116	not recorded	not recorded	young to overmat ure	good to veteran	good to veteran	Remnant hedge forms edge of woodland to north of ditch/stream, with encroaching scrub of hawthorn and blackthorn. Trees vary from young natural regen to over mature veterans, of which two of potential veteran status were recorded to the north east boundary. Good species diversity. Woodland understorey and ground flora present, however due to impeded access and as the area was outside the survey scope, a thorough inspection was not undertaken. Prominent woodland forming good landscape screen to new and existing warehouses within the industrial estate; high landscape and habitat value; significant green infrastructure connections.	A2, A3	see plan		40 years +

Tree ref T - individual G - Group W - Woodland H - Hedgerow V-Veteran	Species Latin name Common name	Height (m)	Stem dia. (mm) basal dia. (BD)	Crown spread (Where not measured on site, dimensions have been calculated using Bluesky aerial imagery) N S E W	Direction and height of lowest branch (m)	Height of crown clearance (m)	Maturity Young; Semi- mature; Middle Age; Early mature; Mature	Structural condition Good; Fair; Poor; Veteran	Physiological condition Good; Fair; Poor; Veteran	Comments on form condition, health and significant defects	BS5837 Tree Quality Category A, B, C, U (1,2,3)	Radius of RPA (m)	Management recommendations Reinspect all retained trees two years from survey date	Estimated remaining contribution less than 10yrs, 10- 20, 20-40, 40yrs+
										Several large mature trees have high habitat value.				
HEDGEROW														
H1	Hawthorn Field maple Blackthorn Rose species	3	not recorded	see plan 274/T/100-116	not recorded	0	Mature	Good	Good	Mature hedgerow over 30 years, has not been recently managed; spreading crown; oak hedgerow trees present				
H2	Hawthorn Field maple Blackthorn mostly spreading from adjacent scrub Rose species	7	not recorded	see plan 274/T/100-116	not recorded	0	Mature	Good	Good	Mature hedgerow over 30 years, has not been recently managed; spreading crown				
H3	Hawthorn Blackthorn Rose species Goat willow Crab apple Field maple	7	not recorded	see plan 274/T/100-116	not recorded	0	Mature	Good	Good	Mature hedgerow over 30 years, has not been recently managed; spreading crown; oak hedgerow trees present				
H4	Hawthorn Field maple Blackthorn Rose species	5	not recorded	see plan 274/T/100-116	not recorded	0	Mature	Good	Good	Mature hedgerow over 30 years, has not been recently managed; spreading crown				
H5	Hawthorn Blackthorn Rose species	5	not recorded	see plan 274/T/100-116	not recorded	0	Mature	Good	Good	Mature hedgerow over 30 years, has not been recently managed; spreading crown				
H6	Blackthorn Rose species Field maple	2	not recorded	see plan 274/T/100-116	not recorded	0	Mature	Fair	Fair	High proportion of bramble present; has been recently flailed to fence height and faced.				
H7	Hawthorn Field maple Occasional: Hazel Rose species Oak - standard trees	up to 7	not recorded	see plan 274/T/100-116	not recorded	0	Early Mature	Good	Good	Robust hedge planted at 5 per linear metre in double staggered row; maintained to road side but not pruned to east; spiral guards still present				
H8	Hawthorn Blackthorn Field maple Rose species	up to 3m	not recorded	see plan 274/T/100-116	not recorded	0	Mature	Good	Good	Mature robust hedgerow over 30 years, has been recently managed but has spreading crown; trees within hedgerow				

Tree ref T - individual G - Group W - Woodland H - Hedgerow V-Veteran	Species Latin name Common name	Height (m)	Stem dia. (mm) basal dia. (BD)	Crown spread (Where not measured on site, dimensions have been calculated using Bluesky aerial imagery) N S E W	Direction and height of lowest branch (m)	Height of crown clearance (m)	Maturity Young; Semi- mature; Middle Age; Early mature; Mature	Structural condition Good; Fair; Poor; Veteran	Physiological condition Good; Fair; Poor; Veteran	Comments on form condition, health and significant defects	BS5837 Tree Quality Category A, B, C, U (1,2,3)	Radius of RPA (m)	Management recommendations Reinspect all retained trees two years from survey date	Estimated remaining contribution less than 10yrs, 10- 20, 20-40, 40yrs+
H9	HawthornBlackthornField mapleRose species	up to 3m	not recorded	see plan 274/T/100-116	not recorded	0	Mature	Good	Good	Mature robust hedgerow over 30 years, has been recently managed but has spreading crown; trees within hedgerow				
H10	Hawthorn Blackthorn Field maple Rose species	up to 3m	not recorded	see plan 274/T/100-116	not recorded	0	Mature	Good	Good	Mature robust hedgerow over 30 years, has been recently managed but has spreading crown; trees within hedgerow				
H11	Hawthorn Blackthorn Field maple Rose species	up to 3m	not recorded	see plan 274/T/100-116	not recorded	0	Mature	Good	Good	Mature robust hedgerow over 30 years, has been recently managed but has spreading crown; trees within hedgerow				

APPENDIX 2 – SITE PHOTOGRAPHS



Tree T1 and group G1 showing overgrown hedgerows and scrub



G1 with mature oaks and bramble scrub, typical hedgerow condition



T1 with split to stem, decay and hollowing – recommended for removal



Overgrown hedgerow H1 and H2 with mature oaks



View along ditch near T1, showing overgrown hedgerow now G1



Oak T18



Oak T21 adjacent to lorry park



Group G4 with willow towards pond and oak, sycamore towards lorry park



Scrub, grassland and lorry park to south west of survey area; overgrown hedgerow and hedgerow trees typical of site



Willow group G5 adjacent to pond



Group G32



Woodland W1



Oak T35



Oak T36



Oak T35 potential veteran



Oak T36 potential veteran



Woodland edge W1



Overgrown hedgerows to the west area of the site
H4



Looking towards pond and groups G12, G15, G30



Prominent group of ash G9



Pond and willows G33



Willow group next to lorry park G10



Hedgerow H7 at site entrance



Hedgerow H7 with field maple above hawthorn



Mature oak T53 at pond



G11 young group of oak near pond



Willow group G13/G15



Poplar T64 to island



G20, G21 field maple and silver birch and G27 willow to pond



Natural regeneration G19



Silver birch and sycamore G17



G27 Willow around pond



G19



G15 willow and scrub



G24



Hedgerows and mature oak to east of site



Mature oak to east of site T70



T69



T71



T75



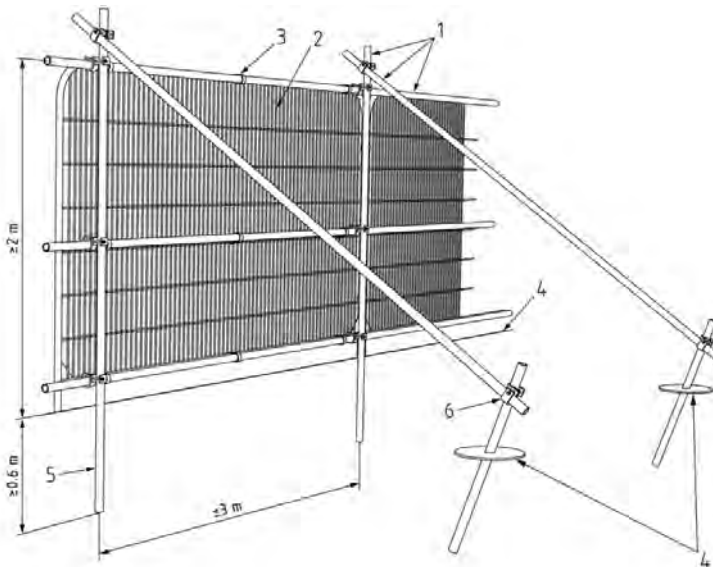
T82 oak, G23 to ditch and bank, dense scrub



G23

APPENDIX 3 – EXAMPLES OF TREE PROTECTION SYSTEMS

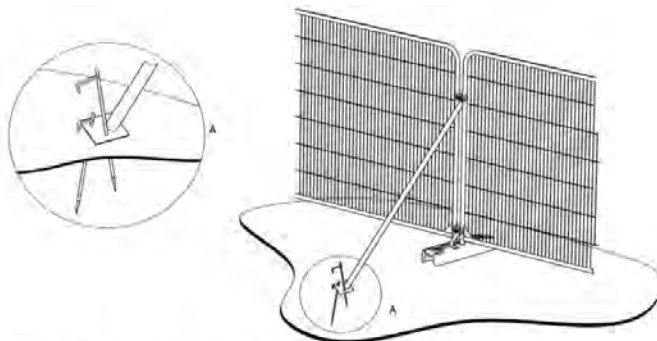
(Extracts taken from BS5837: (2012), “Trees in relation design, demolition and construction – Recommendations”.)



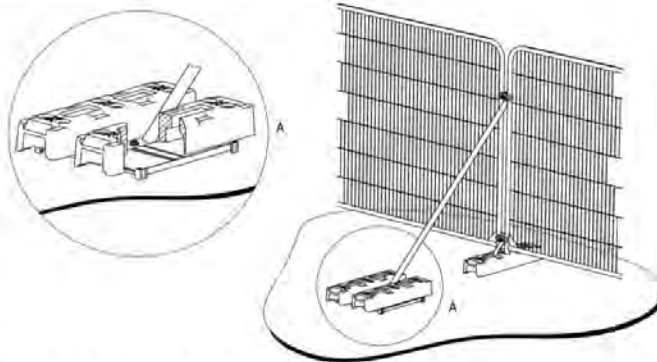
Key

- 1 Standard scaffold poles
- 2 Heavy gauge 2 m tall galvanized tube and welded mesh infill panels
- 3 Panels secured to uprights and cross-members with wire ties
- 4 Ground level
- 5 Uprights driven into the ground until secure (minimum depth 0.6 m)
- 6 Standard scaffold clamps

Default specification for protective barrier



a) Stabilizer strut with base plate secured with ground pins



b) Stabilizer strut mounted on block tray

APPENDIX 4 - GLOSSARY OF TERMS

Maturity	Newly planted - Not fully established and capable of being transplanted or easily replaced
	Young - Establishing, usually with good vigour, still capable of being transplanted or replaced
	Early mature - Established, usually vigorous and increasing in height
	Semi-mature – Established with an overall height in excess of 4 metres and or a stem girth measurement (circumference) of 20 centimetres or larger;
	Middle Age - Trees in the established growth stage of their life with the potential to continue increasing in size;
	Mature - Trees that have reached their ultimate size, given their location and surroundings;
	Over-mature - Fully mature, in last quarter of life expectancy, vigour decreasing
Condition	Good, Fair, Poor. An overall assessment of a tree's physiological and structural state
Veteran	Trees that have biological, cultural or aesthetic value due to age and / or condition. Typically trees that may be living beyond their expected age range for their species
BS 5837 Tree Quality Assessment	The tree quality assessment is based on four categories (A, B, C and U) are used to denote tree quality (A= High, B = Moderate, C = Low, U= Unsuitable for retention). Subcategories (1-3) denote the specific function value of the trees and the reasoning behind the allocation of a specific category.
Root Protection Area (RPA)	The theoretical rooting area of a tree as defined in <i>BS5837: 2012</i> . RPA is allocated to ensure that a sufficient area is left undisturbed during development. It is provided as an area (m ²) and as the radius of a circle (m) typically plotted from the centre of the stem.
Estimated Remaining Contribution	The approximate life expectancy as healthy functioning tree and relates to species and the condition of the tree at the time of survey. Long > 40 years Medium 20 – 40 years Short – Medium 10- 20 years Short - Imminent removal <10years
Adventitious or Epicormic shoots	Small branches that grow in clusters around the stem or base of a tree in an uncharacteristic fashion for a normally healthy tree, usually at the site of pruning wounds or as an indicator of stress
Bifurcate	Divided into two branches or forks
Buckling	Deformation of a structure subjected to a bending load Buttress zone, irreversible.
Chalara – Ash dieback	Chalara dieback of ash, also known as Chalara or ash dieback, is a disease of ash trees caused by a fungus called <i>Hymenoscyphus fraxineus</i>
Decurrent	The tree crown is borne on several major wide spreading limbs of similar size
Defect	A feature which detracts from the uniform distribution of mechanical stress, or which makes the tree mechanically unsuited to its environment
Dieback	A condition in which a tree or shrub begins to die from the tip of its leaves or roots backwards, owing to disease or an unfavourable environment.
Disease	A malfunction or destruction of tissues usually caused by pathogens.
Dominance	The tendency for a leading shoot to grow faster than the lateral shoots; also a tree that maintains a taller crown than its neighbours.
Excurrent	A well-defined central main stem to the crown, bearing branches which are limited in their length, diameter and secondary branching.
Flush-cut	A pruning cut which removes part of the branch bark ridge and or branch-collar.
Girdling root	A root which circles and constricts the stem.

Hazard beam	An upward curving part of a tree in which strong internal stresses may occur without being reduced by adaptive growth; prone to longitudinal splitting or may form a banana shaped crack.
Included bark (ingrown bark)	Bark of adjacent parts of a tree (usually forks, acutely joined branches or basal flutes) which is in face-to-face contact.
Infection	The establishment of a parasitic micro-organism in the tissues of a tree or other organism.
Lopping	Removal of large branches from a tree that does not follow natural target pruning practices.
Natural target pruning	The siting of pruning cuts at the branch bark ridge with a cut of minimal surface area to allow quicker healing of the wound.
Occlusion	The process of continual radial growth and healing of a wound which is progressively closed by the formation of new wood and bark around it.
Plant pathogen	Infectious organism that causes a disease on a plant. Although relatives of some plant pathogens are human or animal pathogens, most plant pathogens only harm plants. Plants are rarely cured of disease once infected.
Pollarding	The removal of the tree canopy, back to the stem or primary branches. The management regime is usually repeated as part of a regular management programme.
Primary branch	A major branch, of greater order than secondary branches.
Pruning	The removal or cutting back of lesser branches or twigs.
Reactive Growth/ Reaction Wood	Production of woody tissue in response to mechanical stresses.
Root-collar	The transitional area between the stem/s and roots prior to development of a root flare or buttress.
Secondary branch	A branch, of lower order than primary branch.
Veteran tree	An aged old specimen that has features which increase its value as habitat for wildlife (dead wood, cavities etc.) irrespective of its chronological age and that is of interest biologically, culturally or aesthetically because of its age, size or condition, is usually of advanced age.
Windthrow	The fall of a tree in high wind, blowing over of a tree at its roots.
Wound wood	Wood developing in response to a wound which gradually heals and occludes the wound