St. Athan Northern Access Road

Arboricultural Report

Prepared for:
Welsh Government

Prepared by:
AECOM Limited

MARCH 2017

60509148 / LDRP/0002

AECOM Limited
1 Callaghan Square
Cardiff
CF10 5BT
United Kingdom

Telephone: +44(0)29 2067 4600

www.aecom.com

Quality Information

Document name	Ref	Prepared for	Prepared by	Date	Reviewed by
Arboricultural Report	LDRP/0002	Welsh Government	Nick Harrison	March 217	Richard Bassindale

Revision History

Revision	Revision date	Details	Name	Position
Planning Submission Issue	27/03/2017	Issued for planning	Richard Bassindale	Principal Landscape Architect

Table of contents

1. INTRODUCTION

Introduction

AECOM was appointed by the Welsh Government to produce an Arboricultural Report, including a tree survey to British Standard (BS) 5837:2012 Trees in relation to design, demolition and construction – Recommendations and Arboricultural Impact Assessment (AIA) for the site of the proposed scheme at St. Athan (the 'survey area'). This report presents the findings of the tree survey carried out.

The Tree Schedule (see Appendix A) provides guidance as to the nature and quality of the existing tree stock both on and immediately adjacent to the proposed site.

The Tree Constraint Plans (Figures 01 to 07 provided as Appendix B to this report) show the locations of the surveyed trees, the assigned tree category, and the extent of the Root Protection Area (RPA) for each tree/ tree group surveyed.

Survey Area Description

The survey area included land within the boundaries of the site, as defined by the Planning Application Boundary (drawing 60509148-SHT-30-0000-CT-3020, Appendix C of this report) together with land adjacent to the route where existing trees may have an effect upon, or be affected by, the construction and operation of the proposed scheme.

The majority of the survey area comprises agricultural land along with some public highways and private/commercial sites as well as parts of the Royal Air Force (RAF) St Athan Ministry of Defence (MOD) site.

Farm land forms the majority to the north as well as encompassing the small village of Llanmaes. Further east along the northern boundary is an area with several large hangers which form part of the existing MOD site. The MOD site is within the boundary and forms a large component of the survey area. To the north east is the small village of Flemingston while directly east are a collection of private residences, public roads and a golf course. The town of St Athan lies to the south with the B4265 running east to west to the south of the town. Further agricultural fields are to the south while the village of Eglwys-Brewis sits directly on the southern boundary of the scheme. The B4265 extends along the southern area before turning north west where it then forms the western boundary of the scheme. Further west is the village of Boverton and the small town of Llantwit Major.

The survey area included trees within the application site boundary together with trees adjacent to the route that may have an effect upon its use, or be affected by its use.

Methodology

This tree survey was based upon topographical information relating to the site and was otherwise conducted in accordance with the requirements of BS 5837:2012 Trees in relation to design, demolition and construction – Recommendations.

Where additional trees were identified on site positons have been mapped using a Global Positioning System (GPS) enabled Panasonic Tough Pad utilising ArcGIS software. As these are not based on accurate topographical points they have been plotted indicatively and have been marked with a "*" within the Tree Schedule. Trees have been evaluated in accordance with the criteria within 'Table 1 Cascade chart for tree quality assessment' of BS 5837:2012 Trees in relation to design, demolition and construction – Recommendations. The arboricultural feature is initially classified upon the main categories below (U, A, B or C) followed by one or more sub-category (1, 2, and/or 3) It should be noted that each subcategory has equal weight.

Table 1: BS 5837:2012 Categorisation criteria

Category	**Criteria**
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
A	Trees of high quality with an estimated remaining life expectancy of at least 40 years
B	Trees of moderate quality with an estimated remaining life expectancy of at least 20 years
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
Sub-Category	**Criteria**
1	Mainly Arboricultural quality/value
2	Mainly Landscape quality/value
3	Mainly Cultural quality/value (including conservation)

Fieldwork was undertaken in August 2016 during which dimensional data and observational information were collected. A DBH (diameter at breast height) tape measure and 10 meter (m) tape measure were used in the collection of this, which now form the basis of this report.

Features comprising multiple trees, scrub or other arboreal features have, where sufficiently consistent, been categorised as grouped features listing species composition, age and condition ranges as appropriate *etc*. to best describe each feature. Within these, principal trees may have also have been identified.

The fieldwork informing this report has comprised a non-intrusive, visual survey undertaken from ground level. Where further inspection is deemed appropriate to ascertain the condition of the tree or other arboreal features, this has been identified within the preliminary management recommendations. Average dimensions or dimensional ranges have occasionally been used where appropriate to best describe arboreal features. References to habitat value should be taken as comparative observations compared with a baseline situation with no tree present

Weather

At the time of the survey it was wet with fair to good visibility.

2. GENERAL ARBORICULTURAL PRINCIPLES

General Principles

Trees are dynamic living organisms which provide essential benefits to society and the wider environment. Any project with the potential to impact on trees must take into consideration the value of trees on site, the impact of any proposed activity along with any potential future conflicts. Suitable measures to safeguard retained trees or mitigate the loss of trees to be removed will need to be fully considered and may be a condition of planning consent.

Tree branches and roots frequently grow across site boundaries and off site trees can pose a significant constraint and should be carefully considered when assessing a site.

Below Ground Constraints

Below ground tree roots and the soil environment in which they grow needs to be protected if the tree is to be retained. Trees grow in association with fungi and other soil organisms which are of key importance to tree health. Roots are essential for anchorage, the uptake of water and nutrients and the storage of energy (carbohydrates) for the future growth and function of the tree.

Roots can be damaged by physical severance or wounding (*e.g*. following excavation of the soil) which can lead to the development of decay and a decline in vitality and/ or instability. Raising soil level effectively buries tree roots at a depth where suitable conditions for growth are less available. Toxic materials discharged into the soil (such as cement based aggregates, fuel and chemicals) can lead to root death and dysfunction. Soils can be compacted to levels inhospitable to tree growth with even a single pass of machinery, regular pedestrian traffic or the storage of plant and materials. Relieving compaction can be problematic and may require costly remedial works. Changes in drainage and water levels can also have significant long term impacts for tree health.

The effects of these incursions may take many years to manifest, with a resulting decline in amenity value and potentially the death or failure of the tree. It should be noted that older trees are particularly sensitive to damage and changes in conditions.

The RPA is a notional area considered to be the minimum zone that must be protected to avoid any adverse impacts on retained trees. This area is deemed to be particularly important for tree stability, growth, function and health. However roots may extend far greater distances, with the distribution of the root system relating directly to the availability of suitable conditions for growth (namely oxygen, water and nutrients). It is generally accepted that tree roots are predominantly located in the upper 1000 mm of soil; however roots may develop at deeper levels where conditions allow.

RPAs are calculated as per BS5837: 2012 Annex C, D and Section 4.6.

The RPA of the existing tree stock is an important material consideration when considering site constraints and planning development activities.

The default position must be that all development, including any associated services will occur outside the RPAs of retained trees. Where this is unavoidable it may be appropriate to use special measures to install structures, services or surfacing within RPAs which allow the protection of roots and soil structure which are essential for tree growth and keep any incursion to a minimum.

Further steps to improve or increase the useable rooting area available to the tree may also be required.

Soils

On shrinkable clay soil tree growth can lead to the differential movement of structures as moisture is removed from the soil during the growing season.

Soils must be carefully assessed and any foundations must be installed following the recommendations of NHBC Standards Chapter 4.2: Building Near Trees (2008) to avoid potential future damage. Where trees which predate existing structures are to be removed this can result in heave as the soils re-wet. The advice of a suitably qualified engineer must be obtained to inform any potential issue of heave. The UK Soil Observatory records the general soil type in the area as 'Clayey Loam to Silty Loam' see http://mapapps2.bgs.ac.uk/ukso/home.html. Specific advice in relation to this topic is beyond the scope of this report.

Above Ground Constraints

Tree stems and branches can restrict available space on site. Damage or wounding (including excessive pruning) can significantly reduce the amenity contribution along with the energy production (via foliage) and storage capacity (via woody material) of the tree and may in turn lead to the development of dysfunction and decay with significant long term implications for tree health. The future impact of existing trees should be carefully considered, including individual species characteristics (such as potential future size, fruit fall, shade *etc*.) and how the tree will interact with any proposed development and future land use. Annual tree growth can lead to direct damage if stems/ branches (or roots) come into physical contact with structures and this must also be taken into consideration.

Root Protection Area

The RPA defines the approximate underground area occupied by the tree roots based on a calculation relating to the girth of the tree, point above ground at which the trunk begins to branch out and the number of stems. BS5837 outlines the calculation of RPA as follows:

$$\text{RPA } (m^2) = \left(\frac{\text{Stem diameter (mm) at 1.5 m height above ground x 12}}{1{,}000} \right)^2 \times \pi \ (3.142)$$

Trees with more than one stem below 1.5 m height are given an aggregate stem diameter using either of the following two calculations as outlined in BS5837. This diameter is then used in the above calculation to estimate RPA:

a) For trees with two to five stems:

$$\sqrt{(\text{stem diameter 1})^2 + (\text{stem diameter 2})^2 \ldots + (\text{stem diameter 5})^2}$$

b) For trees with more than five stems:

$$\sqrt{(\text{mean stem diameter})^2 \times \text{number of stems}}$$

The RPA of existing tree stock is an important material consideration when considering site constraints and planning development activities.

Construction operations, materials storage or changes in level should generally be avoided within the RPA of a tree to be retained on a developed site. This is because these operations have the potential to damage or kill the tree, the safe retention of which may be a condition of planning permission. This is significant when considering construction in close proximity to off-site/third party land. Special construction techniques, *i.e*. no-dig construction/permeable surfacing may be considered for light loadings, *e.g*. pedestrian footpaths *etc*., within the RPA.

It should be noted that the RPA often varies in size to the physical area occupied by the canopy spread (due to particular tree species or management practices to artificially alter the canopy size). This is of particular importance when integrating new development in close proximity of existing trees. Similarly, the canopy heights (as identified in the Schedule of Existing Trees) should be considered as the usable space below a low branching tree will be severely restricted without specific arboricultural works to raise the canopy (which may not always be appropriate).

It should also be noted that BS 5837: 2012 states that although RPAs should be plotted as a circle centred on the base of the stem, pre-existing site conditions or other factors may indicate that rooting has occurred asymmetrically and so RPAs may instead be represented as a polygon of equivalent area.

3. FIELDWORK OBSERVATIONS

The Site

The survey area is located within a semi-rural landscape with a mix of field boundary, garden and highway trees, a small private orchard and a MOD site with associated car parking area at the east of the site.

There is a broad range of existing trees within the survey area in varying conditions and age ranges. The predominant species are hawthorn (*Crataegus monogyna)*, ash *(Fraxinus excelsior)* and blackthorn *(Prunus spinosa)* with other species including oak *(Quercus sp.)*, Willow *(Salix sp.)*, elm *(Ulmus sp.)*, sycamore *(Acer pseudoplatanus)*, poplar *(Populus spp.)*, alder *(Alnus sp.)*, apple *(Malus spp.)* and several evergreen species. There are a small number of ornamental species situated in private gardens and small orchard.

The Trees

A large proportion of trees and tree groups within the survey area are in reasonable condition and consistent in form and condition with typical field boundary and highway trees. A large proportion of trees are contained within hedges and/or groups acting as field/property boundaries or screening. A small amount of amenity planting has been carried out in private gardens and a car parking area which is part of the MOD premises.

The trees were dominated by those categorised as C2 and C3, with several individual trees were categorized as C1. Two tree groups of B2 and B2/3.

No trees, tree groups or hedges categorised as ‘A’ or ‘U’ were identified.

A detailed schedule of all trees can be found in Appendix A.

4. ARBORICULTURAL IMPACT ASSESSMENT

Overview

The AIA sets out the potential direct and indirect impacts on trees in and adjacent to the proposed scheme. The severity of impacts is considered and where appropriate suitable mitigation is proposed where it is reasonable to do so.

Proposed Scheme

The development and landscape proposals are shown on the site layout included as Appendix C and relate to the construction of a new access road extending west to east through the site.

Construction

Construction works can lead to damage to above ground parts of trees, root severance, the discharge of materials toxic to roots and soil organisms into the soil, significant compaction of the soil to levels detrimental to tree health and the raising of soil levels burying tree roots at depths were function is impaired. These issues can lead to the death or decline of trees and the loss of the associated amenity that they provide.

Access for construction works will be required in close proximity to categorized trees or tree groups. Construction work activities required within the RPA and/ or crown spread of retained trees should be carefully controlled with the use of temporary fencing, ground protection measures and by adopting working methods should be set out in an Arboricultural Method Statement (AMS) approved by Vale of Glamorgan Council to minimize the risk of tree damage.

Tree Protective Fencing and Ground Protection

Where construction working space or temporary construction access is required within the identified RPAs suitable ground protection measures should be implemented to prevent the distortion or compaction of the underlying soil. The ground protection should be appropriate to the likely vehicle or pedestrian usage anticipated for the area concerned.

Protective Fencing and Ground Protection

Temporary tree protection fencing that meets the requirements of BS 5837:2012 will need to be installed before works commence and also for the duration of the works to protect the RPAs of retained trees.

Where construction working space or temporary construction access is required within the identified RPAs, suitable ground protection measures should be implemented to prevent the distortion or compaction of the underlying soil. The ground protection should be appropriate to the likely vehicle or pedestrian usage anticipated for the area concerned.

Where the extent of the RPA is less than the extent of the canopy, the tree protection barrier will be installed to provide adequate protection of the canopy from high sided machinery/equipment which may have the potential to come into contact with live parts of the tree.

Incursion into the RPA or Crown Spread of Retained Trees

Incursion into the RPA of a retained tree can result in unacceptable damage or injury to both above and below ground parts of the tree. This could be via physical injury (direct damage) or by impacting on the soil conditions which are essential to tree function and vitality (indirect damage).

The recommendations of BS 5837:2012 are that this can be avoided by the use of suitable protective fencing and the careful storage and management of materials, machinery and people in specially allocated zones outside RPAs. This will ensure that the RPA remain fully protected wherever possible.

Excavation within an RPA should be avoided at all times. Where this is not possible it is recommended that the construction methods are set out in an arboricultural method statement (AMS) and guidance followed as set out in Table A.1 from Annex A of BS 5837:2012 and the principles set out in the National Joint Utilities Group (NJUG) Vol 4: Guidelines for the planning, installation, and maintenance of utility apparatus in proximity to trees (issue 2). Section 7.2 of the BS 5837:2012 document offers guidance on best practice when working in and around the RPA of protected trees.

The movement of heavy machinery within the RPA of trees will result in soil compaction which will lead to root death/die back. Any deviation into the RPAs would need to take into account the following factors whilst still providing adequate protection for the root system:

- morphology and disposition of the roots when influenced by past or existing site conditions (e.g. the presence of roads);
- topography and drainage;
- soil type and structure; and
- likely tolerance of the tree to root disturbance or damage (based on factors such as species, age, condition and past management).

It is recommended that all tree works are carried out by suitably qualified arborists and adhere to BS 3998:2010 'Tree work Recommendations'.

Trees to be removed due to a direct conflict with the proposed scheme:

The loss of three hedges, four tree groups and one tree as well as the partial removal of ten hedges and four tree groups will be necessary to facilitate the proposed scheme. All are listed within the tree works table below.

All are categorized as Category C trees, the majority of which are of relatively low stature and amenity value, will be mitigated with the implementation of a comprehensive planting scheme across the site. This represents an opportunity to increase the diversity of species and ages of the tree stock to increase its future resilience.

Trees which will require pruning to facilitate the implementation of the proposals:

A number of trees/hedges will require partial removal to accommodate the scheme. The remaining vegetation may require clearance pruning to facilitate safe movement of people and machinery during construction. Further assessment will need to be made as and when partial removal has been carried out.

Trees to be retained:

Individual trees and tree groups categorised under BS 5837:2012 within the survey area will be retained and protected during construction. These are identified on Figures 1 t o7 within Appendix C.

Retained Trees: Species Characteristics

Where trees are retained near to new developments, the future growth and characteristics of individual species must be considered in the long term to minimise future conflicts and potential pressure for future tree removal.

Trees adjacent to footpaths, highways and parking areas may require periodic pruning to prevent an obstruction. This work would not have a significant impact on the health or amenity of retained trees.

There is unlikely to be significant future pressure to remove trees associated with the future use and management of the survey area.

Site Organisation

Suitable locations for site facilities and the washing, storage and mixing of materials should be identified such that they are at least 5 m from the outer edge of the RPA of any retained tree or protected tree planting area.

The mixing and washing of materials can lead to run off or inadvertent spillage into tree root zones. Many substances often used on construction sites can be toxic to tree roots (such as concrete, fuels, salts, builders sand and herbicides) and can result in the death of tree roots, beneficial soil organisms and have a significant impact on the future health and appearance of the tree. Potential for surface run off should be considered. Where appropriate, bunding comprising heavy duty polythene and sand bags can be used to contain spillages and direct run off into appropriate areas for drainage or collection, or other appropriate methods identified by the contractor, when appointed.

The storage of materials can result in an effective raised soil level. This buries tree roots at depths where air and water are less available and can lead to the decline or death of the tree. For these reasons it is essential that storage areas are located outside the RPA of retained trees.

Movement of Vehicles and People and the Movement and Operation of Machinery

The movement of people, construction works and in particular the movement and use of machinery must be carefully coordinated to avoid damage to retained trees. Physical damage caused by impact with machinery can lead to the loss of branches and damage to bark. This can predispose trees to decay, reduce the energy production and storage capacity of the tree and significantly impact on the future health, appearance and amenity contribution of the tree. For these reasons it is essential that site operations take place outside the RPA of retained trees. A banksman must be in place for any operations which occur within 5 m of any part of a retained tree. Boxing or additional protective fencing may be required where works close to tree stems is unavoidable to prevent potential impact damage.

Where access is required across areas of new permeable load bearing surfaces a temporary wearing course is to be in place to prevent the blocking of interstices. The surface must be suitable to prevent compaction of the soil from the heaviest expected load, from both future site use and construction traffic.

Installation of Services

Excavation to install services has the potential to result in root severance, which could result in instability, dysfunction or death of trees within the survey area. Repeated incursions are particularly damaging and should be avoided by bundling services wherever possible.

The following general principles will apply and where services must be routed within the RPA of a retained tree this process will be subject to a detailed method statement with approval from the Planning Authority.

All services must be bundled as far as possible and installed within RPAs using hand/compressed air excavation (e.g. for shallow service runs) or trenchless techniques such as impact moling (thrust boring) with all access pits and inspection chambers being located

outside of the RPA. The route must run as far from the main stem of a retained tree as possible and must be at a minimum depth of 600mm. This operation must take place as specified in an approved AMS . Any water pipes must be constructed so as to be resistant to ingress by tree roots which could include the use of root barriers where appropriate.

Due consideration must also be given to the location of any new tree planting in relation to the positioning of services, with particular reference to Table A.1 from Annexe A of BS5837:2012.

Installation of new hard surfacing

The construction of new route ways typically requires excavation and significant compaction of the soil. This will result in the severance of any tree roots located within the footprint area and the extensive compaction of the underlying soil which will result in conditions which are inhospitable for tree root growth and development. The severance of significant roots can lead to a decline in tree health and/or instability in the short term, or in the longer term as root decay progresses. Soil compaction physically prevents root development and also restricts the diffusion of air and water which are essential for tree functions. This in turn is likely to result in a decline in tree health and potentially the loss of the tree.

Alternative methods of construction where new surfaces are installed using 'no dig' techniques utilising a load bearing surface which is laid on the existing surface of the ground can be used to avoid root severance and to reduce soil compaction to acceptable levels. This method does have an impact on the final levels of the route way as it requires an increase of up to 300mm for the load bearing surface along with the depth of the final wearing course (dimensions of the surface should reflect the manufacturers specification).

Where new hard surfacing is required within the RPA of a retained tree this operation will follow the principles set out in an approved AMS.

New Tree Planting: Damage to Soil Structure

The soil in areas for new planting outside of existing RPAs should be protected from damage during the construction process so that new trees have access to soil of a suitable condition and volume for growth. This can be achieved using protective fencing and/or temporary ground protection (specified in relation to the typical loading expected). Where damage is unavoidable, remedial de-compaction works is likely to be required.

Site Supervision

Whenever significant works are to take place within the RPA of a retained tree, operations should adhere to the specification outlined in an approved AMS.

Site supervision by a suitably qualified person is likely to be required at agreed intervals for sensitive operations. This process should be auditable with a written report provided to the Planning Authority detailing the results of each visit.

Issues to be addressed by the Method Statement

- Pre-commencement site meeting
- Order of operations
- Site briefing
- Tree works
- Protective fencing and temporary ground protection

- Site organisation, storage and mixing of materials
- Site monitoring
- Installation of new hard surfacing within RPAs
- Installation of services within RPAs (if required)
- Removal of tree protection measures
- Soft landscaping operations

5. TREE WORKS

The table below sets out those trees which will require removal to allow the implementation of the proposed scheme: Trees have been assigned a category to indicate their quality as per Table 1 from Section 4.5.8 of BS5837:2012.

Table 2: Summary of tree removals

Operation	A	B	C	U
Removal in full	N/A	N/A	G1, G2, H4, H10, H12, G13, H18, G22, G47, G48, T49, H56	N/A
Removal in part	N/A	N/A	H5, G7, H14, H19, H20, G23, H29, H43, H44, G45, G46, G57	N/A
Pruning to facilitate access	N/A	N/A	N/A	N/A

1.1 Trees to be removed due to a direct conflict with the proposed scheme

The loss of the Category C trees, the majority of which are of relatively low stature and amenity value, can be mitigated with the implementation of a planting scheme across the site. This represents an opportunity to replace low quality trees with younger better quality trees that have the potential to provide greater amenity in a significantly visible location. The removal of 'B' category trees to facilitate development should be carefully considered. Suitable replacement planting should be provided as mitigation if their removal cannot be avoided. This linear belt of trees provides amenity and screening value along this section of the b4265. In summary, sufficient replacement planting should be considered to mitigate the loss of any moderate quality amenity trees.

1.2 Trees which will require pruning to facilitate the implementation of the proposed scheme

Pruning works are required in the interests of good arboricultural practice to ensure newly exposed trees within the groups that have been partially removed (G1, G7, G45 and G46), are structurally safe. Formerly sheltered trees exposed to inclement weather are at a higher risk to wind throw. An arboriculturist should inspect any newly exposed trees to assess their structural integrity.

Consideration will need to be made with regards to the sight lines needed with the installation of traffic signal systems. Ongoing pruning may also need to be considered where retained trees are sited close to the proposed traffic signal systems.

1.3 Trees to be retained

Individual trees and tree groups categorised under BS 5837:2012 within the survey area will be retained and should be suitably protected throughout the development. A Tree Protection Plan (TPP), (Figure 8 to 14 in Appendix D), identifies those trees which are to be retained and protected during the construction phase.

6. PLANTING RECOMMENDATIONS

On completion of the proposed construction works, it is recommended that the tree losses are mitigated through a re-planting programme.

Given the surrounding context of the survey area and the tree specimens contained therein, the importance of the vegetation is a mixture of landscape and habitat value. Where removal is necessary to facilitate the works, replacement should be provided where this is feasible.

Hedgerows are of landscape and conservation value within the local context of the survey area, therefore if removal is necessary, it is recommended that mitigation should be provided.

7. CONCLUSION

The vegetation that is listed for removal has been classified as Category C (low quality) and its removal is not considered to have a significant impact on the amenity of the area.

The vast majority of the tree stock is trees and hedges that have been planted to provide either boundary markers/stock proofing and/or screening from adjacent roads. A robust re-planting scheme provides the opportunity to replace low quality trees with a younger tree stock that will provide better quality amenity and other associated benefits for a longer period of time.

APPENDIX A TREE SCHEDULE

Ref. No	Species Common name (*Scientific name)*	Est. height (m)	Stem diameter (mm)	Canopy spread (m) N	E	S	W	Canopy clearance height (m)	Physiological Condition	Structural Condition	Age	First significant branch (m) & direction		Observations	Preliminary management recommendations	Estimated remaining contribution (years)	Category	Root protection area Radius (m)	m²
G1	Sycamore (*Acer pseudoplatanus*) Hawthorn (*Crataegus monogyna*) Elm (*Ulmus sp*) Oak (*Quercus sp*)	7.0 ave	150 # ave	As plan				<1.0	G	G - F	SM	<1.0	All	Linear tree belt with occasional young sycamore standards. Overhanging branches to highway	No action	20+	C2,3	As plan	
G2	Ash (*Fraxinus excelsior*) Sycamore (*Acer pseudoplatanus*) Hawthorn (*Crataegus monogyna*) Oak (*Quercus sp*)	12.0 ave	350 # ave	As plan				<1.0	G	G - P	SM - EM	<1.0	All	Minor to moderate deadwood. Overhanging branches to highway	No action	20+	C2,3	As plan	
G3	Oak (*Quercus sp*) Elm (*Ulmus sp*) Sycamore (*Acer pseudoplatanus*) Field Maple (*Acer campestre*)	15.0 ave	350 # ave	As plan				<1.0	G	G - P	SM - EM	<1.0	All	Extensive crown dieback on young elms, symptomatic of Dutch elm disease	Fell elms within 12 months	20+	C2,3	As plan	
H4	Hawthorn (*Crataegus monogyna*) Blackthorn (*Prunus spinosa*)	3.0 ave	150 # ave	As plan				<1.0	G	G	SM	<1.0	All	Typical boundary hedge	No action	20+	C2,3	As plan	
H5	Hawthorn (*Crataegus monogyna*) Blackthorn (*Prunus spinosa*)	3.0 ave	150 # ave	As plan				<1.0	G	G	SM	<1.0	All	Typical boundary hedge	No action	20+	C2,3	As plan	
H6	Hawthorn (*Crataegus monogyna*) Blackthorn (*Prunus spinosa*)	3.0 ave	150 # ave	As plan				<1.0	G	G	SM	<1.0	All	Typical boundary hedge	No action	20+	C2,3	As plan	
G7	Hazel (*Corylus avellana*) Hawthorn (*Crataegus monogyna*) Ash (*Fraxinus excelsior*) Blackthorn (*Prunus spinosa*)	11.0 ave	250 # ave	As plan				<1.0	G	G - P	SM	<1.0	All	Minor deadwood. Several ash standards in hedge	No action	20+	C2,3	As plan	
G8	Hawthorn (*Crataegus monogyna*) Ash (*Fraxinus excelsior*)	15.0 ave	750 # ave	As plan				<1.0	G	G - P	EM - M	<1.0	All	Mostly early to mature ash, minor to major deadwood throughout, various trees showing signs of ill health (ash canker), prolific epicormic growth to ash. High habitat potential due to decay pockets on several trees	No action	20+	C1,2,3	As plan	

Ref. No	Species Common name (*Scientific name)*	Est. height (m)	Stem diameter (mm)	Canopy spread (m) N	E	S	W	Canopy clearance height (m)	Physiological Condition	Structural Condition	Age	First significant branch (m) & direction		Observations	Preliminary management recommendations	Estimated remaining contribution (years)	Category	Root protection area Radius (m)	m²
H9	Hawthorn (*Crataegus monogyna*) Ash (*Fraxinus excelsior*) Blackthorn (*Prunus spinosa*) Elm (*Ulmus sp*)	9.0 ave	300 # ave	As plan				<1.0	G	G - F	Y - SM	<1.0	All	Field boundary hedge with ash and elm standards. Possibly lapsed coppice	No action	20+	C2,3	As plan	
H10	Ash (*Fraxinus excelsior*) Hawthorn (*Crataegus monogyna*) Blackthorn (*Prunus spinosa*) Elder (*Sambucus nigra*)	4.5 ave	200 # ave	As plan				<1.0	G	G - F	SM - EM	<1.0	All	Typical boundary hedge	No action	20+	C2,3	As plan	
G11	Ash (*Fraxinus excelsior*)	7.5 ave	350 # ave	As plan				<1.0	G	G - F	SM	<1.0	All	Small trees screening property	No action	20+	C2,3	As plan	
H12	Hawthorn (*Crataegus monogyna*) Blackthorn (*Prunus spinosa*) Elder (*Sambucus nigra*)	4.5 ave	200 # ave	As plan				<1.0	G	G - F	SM	<1.0	All	Typical boundary hedge	No action	20+	C2,3	As plan	
G13	Ash (*Fraxinus excelsior*)	6.5 ave	280 # ave	As plan				<1.0	G	G - F	Y	<1.0	All	Possible lapsed coppiced hedgerow trees	No action	20+	C2,3	As plan	
H14	Hawthorn (*Crataegus monogyna*)	2.0 ave	150 # ave	As plan				<1.0	G	G - F	SM	<1.0	All	Typical boundary hedge	No action	20+	C2,3	As plan	
G15	Hawthorn (*Crataegus monogyna*)	5.0 ave	150 # ave	As plan				<1.0	G	G - F	SM	<1.0	All	Lapsed coppiced trees within hedge	No action	20+	C2,3	As plan	
G16	Common Alder (*Alnus glutinosa*) Hazel (*Corylus avellana*) Hawthorn (*Crataegus monogyna*) Ash (*Fraxinus excelsior*)	13.0 ave	350 # ave	As plan				<1.0	G	G - F	Y - SM	<1.0	All	Group of bank edge trees	No action	20+	C2,3	As plan	
G17	5 x Hawthorn (*Crataegus monogyna*) Elder (*Sambucus nigra*)	6.0 ave	300 # ave	As plan				<1.0	G	G - P	EM - M	<1.0	All	Minor deadwood, ivy	No action	20+	C2,3	As plan	
H18	Hawthorn (*Crataegus monogyna*) Elder (*Sambucus nigra*)	2.5 ave	150 # ave	As plan				<1.0	G	G - D	SM - EM	<1.0	All	Typical boundary hedge	No action	20+	C2,3	As plan	

Ref. No	Species Common name (*Scientific name)*	Est. height (m)	Stem diameter (mm)	Canopy spread (m) N	E	S	W	Canopy clearance height (m)	Physiological Condition	Structural Condition	Age	First significant branch (m) & direction		Observations	Preliminary management recommendations	Estimated remaining contribution (years)	Category	Root protection area Radius (m)	m²
H19	Hawthorn (*Crataegus monogyna*) Blackthorn (*Prunus spinosa*) Elder (*Sambucus nigra*)	5.5 ave	250 # ave	As plan				<1.0	G	G - P	SM - EM	<1.0	All	Typical boundary hedge	No action	20+	C2,3	As plan	
H20	Field Maple (*Acer campestre*) Hawthorn (*Crataegus monogyna*) Blackthorn (*Prunus spinosa*)	2.5 ave	150 # ave	As plan				<1.0	G	G - F	SM	<1.0	All	Typical boundary hedge	No action	20+	C2,3	As plan	
H21	Hawthorn (*Crataegus monogyna*) Blackthorn (*Prunus spinosa*)	2.5 ave	150 # ave	As plan				<1.0	G	G - F	SM	<1.0	All	Typical boundary hedge	No action	20+	C2,3	As plan	
G22	Elm (*Ulmus sp*)	3.5 ave	250 # ave	As plan				<1.0	F	P	SM	3.0	All	Topped hedge elm	No action	<10	C2,3	As plan	
H23	Hawthorn (*Crataegus monogyna*) Blackthorn (*Prunus spinosa*) Alder (*Alnus sp*)	2.0 ave	150 # ave	As plan				<1.0	G	G - F	SM	<1.0	All	Typical boundary hedge	No action	20+	C2,3	As plan	
G24	Field Maple (*Acer campestre*) Cypress (*Chamaecyparis sp*) Ash (*Fraxinus excelsior*) Hawthorn (*Crataegus monogyna*)	7.5 ave	300 # ave	As plan				<1.0	G	G - P	SM	1.0	All	Not fully surveyed due to restricted access	No action	20+	C2,3	As plan	
G25	Ash (*Fraxinus excelsior*)	11.0 ave	500 # ave	As plan				4.0	G	F	EM	4.0	All	Overlapping canopies over entrance to house, dense ivy and undergrowth to base of both trees, dieback, minor to moderate deadwood throughout, overhanging public highway. Foliage present lower than canopy clearance due to smaller branch growths on main stem	Clear ivy and undergrowth to enable a full inspection within 6 months	20+	C2,3	As plan	
H26	Hawthorn (*Crataegus monogyna*) Field Maple (*Acer campestre*)	2.5 ave	150 # ave	As plan				<1.0	G	G - F	SM	<1.0	All	Typical boundary hedge	No action	20+	C2,3	As plan	

Ref. No	Species Common name (*Scientific name)*	Est. height (m)	Stem diameter (mm)	Canopy spread (m) N	E	S	W	Canopy clearance height (m)	Physiological Condition	Structural Condition	Age	First significant branch (m) & direction		Observations	Preliminary management recommendations	Estimated remaining contribution (years)	Category	Root protection area Radius (m)	m²
G27	Ash (*Fraxinus excelsior*)	8.0 ave	300 # ave	As plan				3.0	G	F	SM	5.0	All	Minor dead wood. Not fully surveyed at base due to undergrowth and ivy. Grouping as one canopy adjacent to streetlamp and telephone pole. Foliage present lower than canopy clearance due to smaller branch growths on main stem	No action	20+	C2,3	As plan	
G28	Poplar (*Populus sp*) Holly (*Ilex aquifolium*) Blackthorn (*Prunus spinosa*) Maidenhair Tree (*Ginkgo biloba*)	5.0 ave	250 # ave	As plan				<1.0	G	G - P	Y - SM	4.5	All	Ornamental garden trees. Not fully surveyed due to no access	No action	20+	C2,3	As plan	
H29	Hawthorn (*Crataegus monogyna*) Elder (*Sambucus nigra*) Elm (*Ulmus sp*)	3.0 ave	150 # ave	As plan				<1.0	G	G - F	SM	<1.0	All	Typical boundary hedge	No action	20+	C2,3	As plan	
H30	Cherry Laurel (*Prunus laurocerasus*) Elder (*Sambucus nigra*)	3.5 ave	150 # ave	As plan				<1.0	G	G - P	SM	<1.0	All	Formal garden hedge. Not fully surveyed due to no access	No action	20+	C2,3	As plan	
G31	Willow (*Salix sp*)	5.5 ave	250 # ave	As plan				<1.0	G	G - P	Y - SM	<1.0	All	Not fully surveyed due to no access	No action	20+	C2,3	As plan	
G32	Blackthorn (*Prunus spinosa*)	1.8 max	150 # ave	As plan				<1.0	G	G	Y - SM	<1.0	All	Shrubby trees growing adjacent to highway	No action	20+	C2,3	As plan	
G33	Hazel (*Corylus avellana*) Ash (*Fraxinus excelsior*) Hawthorn (*Crataegus monogyna*)	5.5 ave	250 # ave	As plan				<1.0	G	G – P	Y - SM	<1.0	All	Water edge trees	No action	20+	C2,3	As plan	
G34	Ash (*Fraxinus excelsior*) Blackthorn (*Prunus spinosa*)	7.0 ave	300 # ave	As plan				<1.0	G	G – P	SM	<1.0	All	Roadside trees	No action	20+	C2,3	As plan	
G35	Apple (*Malus sp*) Norway Spruce (*Picea abies*) Weeping Willow (*Salix X chrysocoma*)	16.0 ave	350 # ave	As plan				<1.0	G	G – P	SM - EM	<1.0	All	Not fully surveyed due to no access	No action	20+	C2	As plan	

Ref. No	Species Common name (*Scientific name)*	Est. height (m)	Stem diameter (mm)	Canopy spread (m) N	E	S	W	Canopy clearance height (m)	Physiological Condition	Structural Condition	Age	First significant branch (m) & direction		Observations	Preliminary management recommendations	Estimated remaining contribution (years)	Category	Root protection area Radius (m)	m²
H36	Hawthorn (*Crataegus monogyna*) Hazel (*Corylus avellana*) Elm (*Ulmus sp*)	3.5 ave	200 # ave	As plan				<1.0	G	G – F	SM	<1.0	All	Typical boundary hedge	No action	20+	C2,3	As plan	
G37	Apple (*Malus sp*) Holly (*Ilex aquifolium*) Cypress (*Chamaecyparis sp*) Bay (*Laurus nobilis*)	6.0 ave	350 # ave	As plan				1.0	G	G – F	Y - SM	1.0	All	Orchard with boundary trees	No action	20+	C2	As plan	
G38	Poplar (*Populus sp*)	12.0 ave	400 # ave	As plan				2.0	G	G – P	SM	4.0	All	Field boundary trees. Moderate deadwood to both, ivy to main stems, prolific epicormic growth,	No action	20+	C2	As plan	
H39	Hawthorn (*Crataegus monogyna*)	2.5 ave	150 # ave	As plan				<1.0	G	G – F	SM	<1.0	All	Typical boundary hedge	No action	20+	C2,3	As plan	
G40	Ash (*Fraxinus excelsior*) Goat Willow (*Salix caprea*) Hawthorn (*Crataegus monogyna*)	8.0 ave	500 # ave	As plan				5.0	G-F	G - F	EM - M	5.0	All	Roadside trees	No action	20+	B2,3	6.0	113
G41	Sycamore (*Acer pseudoplatanus*) Goat Willow (*Salix caprea*)	4.0 ave	150 # ave	As plan				<1.0	G	G	EM	<1.0	All	Roadside trees	No action	20+	C2	As plan	
T42	Hawthorn (*Crataegus monogyna*)	3.0	150 #	2.0	2.0	2.0	2.0	1.0	G	G	M	1.0	N	Field boundary tree	No action	20+	C1	1.8	11
G43	Hawthorn (*Crataegus monogyna*) English Elm (*Ulmus procera*)	5.0 ave	150 # ave	As plan				<1.0	G-D	G - D	EM - M	<1.0	All	Field boundary trees	No action	20+	C2,3	As plan	
G44	Hawthorn (*Crataegus monogyna*)	3.0 ave	100 # ave	As plan				<1.0	G	G	EM	3.0	All	Field boundary trees	No action	20+	C2	As plan	
G45	Blackthorn (*Prunus spinosa*) Hawthorn (*Crataegus monogyna*) Ash (*Fraxinus excelsior*)	8.0 ave	150 # ave	As plan				<1.0	G-F	G - F	EM - M	3.0	All	Roadside/field boundary trees	No action	20+	C2,3	As plan	
G46	Blackthorn (*Prunus spinosa*) Hawthorn (*Crataegus monogyna*) Hazel (*Corylus avellana*)	5.0 ave	100 # ave	As plan				<1.0	G-F	G - F	EM - M	<1.0	All	Roadside/field boundary trees	No action	20+	C2,3	As plan	

Ref. No	Species Common name (*Scientific name)*	Est. height (m)	Stem diameter (mm)	Canopy spread (m) N	E	S	W	Canopy clearance height (m)	Physiological Condition	Structural Condition	Age	First significant branch (m) & direction		Observations	Preliminary management recommendations	Estimated remaining contribution (years)	Category	Root protection area Radius (m)	m²
G47	Leyland Cypress (*X Cupressocyparis leylandii*)	16.0 ave	500 # ave	As plan				<1.0	G-F	G - F	SM - M	4.0	All	Unsafe trees in this group with potential to fall on road	Tree risk survey advised within 6 months	20+	C2	As plan	
G48	Blackthorn (*Prunus spinosa*)	5.0 ave	100 # ave	As plan				<1.0	G-F	G - F	EM - M	<1.0	All	Roadside/field boundary trees	No action	20+	C2,3	As plan	
T49	Field Maple (*Acer campestre*)	5.0	200 #	2.0	2.0	2.0	2.0	1.0	G	G	M	1.0	N	Roadside/field boundary tree	No action	20+	C1	2.4	18
H50	Blackthorn (*Prunus spinosa*) Hawthorn (*Crataegus monogyna*)	5.0 ave	100 # ave	As plan				<1.0	G-F	G - F	EM - M	<1.0	All	Typical boundary hedge	No action	20+	C2,3	As plan	
T51	Goat Willow (*Salix caprea*)	6.0	250 #	2.0	2.0	2.0	2.0	2.0	G	G	M	2.0	N	Field boundary tree	No action	10+	C1	3.0	29
G52	Elder (*Sambucus nigra*)	3.0 ave	120 # ave	As plan				<1.0	G	G	M	<1.0	All	Field grown trees	No action	10+	C2	As plan	
T53	Elder (*Sambucus nigra*)	3.0	150 #	1.0	1.0	1.0	1.0	2.0	G	G	M	2.0	N	Field boundary tree	No action	10+	C1	1.8	11
T54	Ash (*Fraxinus excelsior*)	6.0	220 #	2.0	2.0	2.0	2.0	2.0	G	G	EM	2.0	N	Field boundary tree	No action	20+	C1	2.6	22
G55	Leyland Cypress (*X Cupressocyparis leylandii*)	15.0 ave	400 # ave	As plan				<1.0	G	G	M	<1.0	All	Trees planted to form a natural screen from the highway	No action	20+	B2	As plan	
H56	Blackthorn (*Prunus spinosa*) Hawthorn (*Crataegus monogyna*) Field Maple (*Acer campestre*) Goat Willow (*Salix caprea*)	6.0 ave	150 # ave	As plan				<1.0	G-F	G - F	EM - M	<1.0	All	Typical boundary hedge	No action	20+	C2,3	As plan	
H57	Blackthorn (*Prunus spinosa*) Hawthorn (*Crataegus monogyna*) Ash (*Fraxinus excelsior*)	6.0 ave	150 # ave	As plan				<1.0	G-F	G	EM - M	<1.0	All	Typical boundary hedge	No action	20+	C2,3	As plan	
G58	Goat Willow (*Salix caprea*)	5.0 ave	150 # ave	As plan				<1.0	G	G	EM	<1.0	All	Roadside trees	No action	10+	C2	As plan	
T59	Holm Oak (*Quercus ilex*)	4.0	110 #	1.0	1.0	1.0	1.0	2.0	G	G	SM	2.0	N	Planted tree within car park	No action	20+	C1	1.3	6
T60	Holm Oak (*Quercus ilex*)	4.0	150 #	1.0	1.0	1.0	1.0	2.0	G	G	SM	2.0	N	Planted tree within car park	No action	20+	C1	1.8	11

Ref. No	Species Common name (*Scientific name)*	Est. height (m)	Stem diameter (mm)	Canopy spread (m) N	E	S	W	Canopy clearance height (m)	Physiological Condition	Structural Condition	Age	First significant branch (m) & direction		Observations	Preliminary management recommendations	Estimated remaining contribution (years)	Category	Root protection area Radius (m)	m²
T61	Birch (*Betula sp*)	4.0	100 #	1.0	1.0	1.0	1.0	2.0	G	G	SM	2.0	N	Planted tree within car park	No action	20+	C1	1.2	5
G62	Willow (*Salix sp*) Pine (*Pinus sp*) Common Oak (*Quercus robur*) Field Maple (*Acer campestre*)	5.0 ave	120 # ave	As plan				<1.0	G	G	SM - EM	<1.0	All	Planted trees to form edge along access road	No action	20+	C2	As plan	
G63	Willow (*Salix sp*) Pine (*Pinus sp*) Silver Birch (*Betula pendula*) Field Maple (*Acer campestre*)	5.0 ave	120 # ave	As plan				<1.0	G-F	G - F	SM - EM	<1.0	All	Planted trees to form edge along access road	No action	20+	C2	As plan	
T64	Holm Oak (*Quercus ilex*)	3.0	100 #	1.0	1.0	1.0	1.0	2.0	2.0	G	SM	2.0	N	Planted tree within car park	No action	20+	C1	1.2	5
T65	Holm Oak (*Quercus ilex*)	3.0	120 #	1.0	1.0	1.0	1.0	2.0	2.0	G	SM	2.0	N	Planted tree within car park	No action	20+	C1	1.4	7
T66	Holm Oak (Quercus ilex)	3.0	140 #	1.0	1.0	1.0	1.0	2.0	2.0	G	SM	2.0	N	Planted tree within car park	No action	20+	C1	1.7	9

Considerations

Tree owners/ managers have a legal duty to prevent foreseeable harm. It is generally accepted that this duty can be fulfilled by undertaking proactive inspections of significant trees to identify obvious defects and by taking appropriate remedial action or gaining further advice as appropriate. This survey is primarily for planning purposes, focusing on the quality and benefits of the trees and is not specifically designed to assess the safety of trees on site. When obvious issues have been identified recommendations will be included on the schedule.

Full consideration must be given to the presence of species protected under the Wildlife and Countryside Act (1981 - as amended), the Countryside Rights of Way Act (2000) and the 'The Conservations of Habitat and Species Regulations, 2010 (as amended), in particular the presence of bats and nesting birds. It is recommended that wherever possible, significant tree/ hedge works take place outside of the typical bird nesting season of March to September.

Any tree surgery recommendations contained within this report are to be undertaken in accordance with BS3998: 2010 Tree work – Recommendations (BS3998) by suitably qualified and insured contractors. Significant pruning works are best undertaken when trees are dormant or outside periods of high functional activity to reduce the overall impact on energy available to the tree for growth and processes. In general the optimum period for works is between November to February and July to August (subject to the presence of protected species) when the tree is less active and better placed to respond to wounding and a reduction in leaf area.

Fieldwork survey information is subject to seasonal/ access constraints.

This schedule should be read in conjunction with AECOM Tree Constraints Plan (see Appendix A).

Table A1: Key to Abbreviations Used in the Survey

Term	Definition		
Age	Classification given in relation to the life expectancy of the species.		
	Y	Young	Usually less than 10 years old
	SM	Semi mature	Tree in the first third of its normal life expectancy for the species (significant potential for future growth in size).
	EM	Early mature	Tree in the second third of its normal life expectancy for the species (some potential for future growth in size).
	M	Mature	Tree in the final third of its normal life expectancy for the species (having typically reached its approximate ultimate size).
	OM	Over Mature	Tree beyond the normal life expectancy for the species.
	V	Veteran	Tree of interest biologically, aesthetically or culturally because of its condition, size or age.
ave	Indicates an average representative measured dimension for the group or		

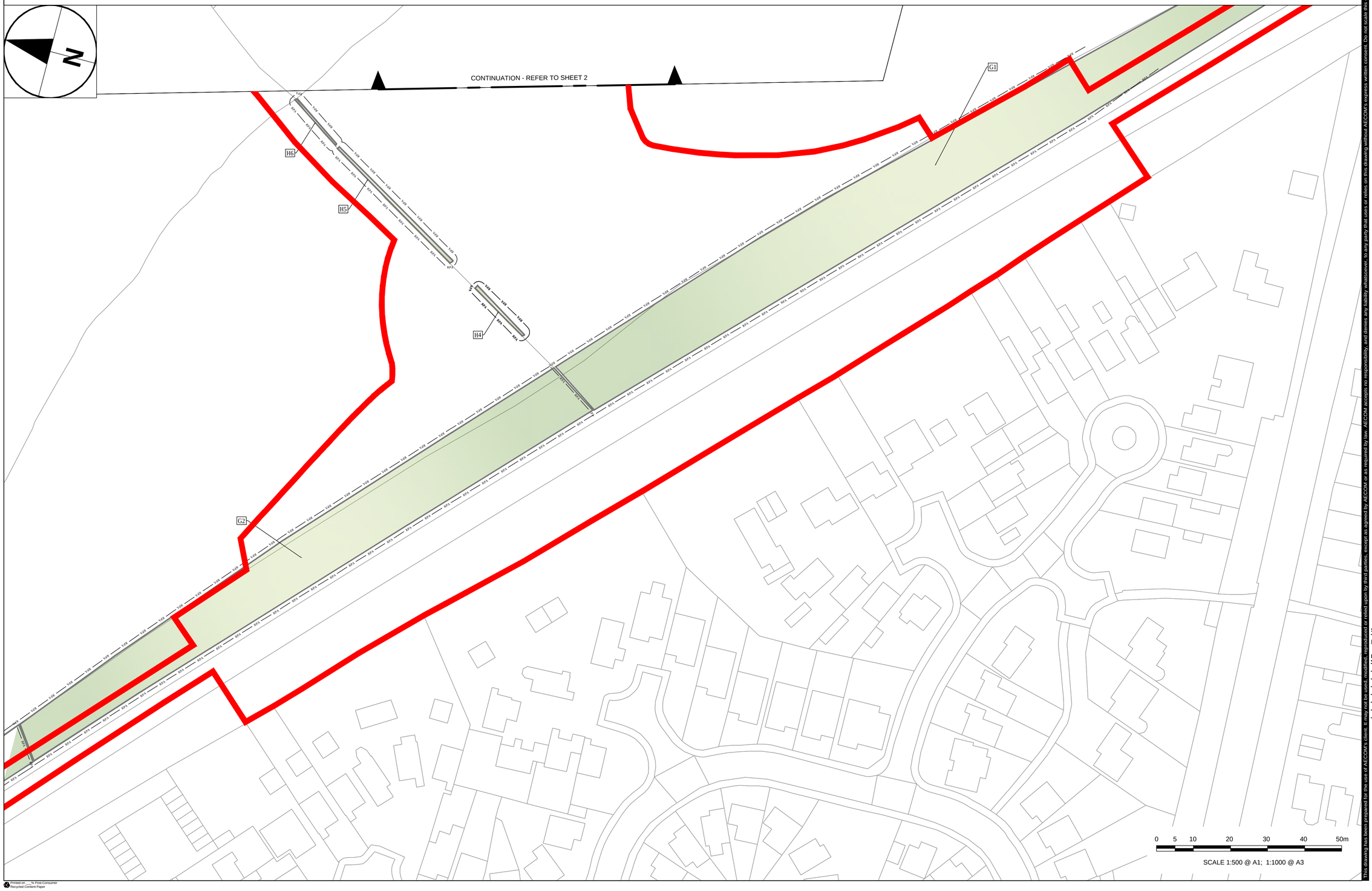
Term	Definition		
	feature.		
Canopy Spread	Extent of the tree canopy spread, measured in metres on the four compass points and recorded to the nearest half metre for dimensions up to 10 m and the nearest whole metre for dimensions over 10 m.		
Category	A	Trees of high quality/value, with an estimated remaining life expectancy of at least 40 years	
	B	Trees of moderate quality/value with an estimated remaining life expectancy of at least 20 years	
	C	Trees of low quality/value with an estimated remaining life expectancy of at least 10 years, stem diameter less than 150 mm.	
	U	Unsuitable for retention.	
	1	Arboricultural quality/value.	
	2	Landscape quality/value.	
	3	Cultural quality/value (including conservation).	
Condition	Classification given in relation to the life expectancy of the species.		
	G	Good	Normal vitality including leaf size, bud growth, density of crown and woundwood development, and/or no significant structural defects.
	F	Fair	Lower than normal vitality, reduced bud development, reduced crown density, and reduced response to wounds, and/or structural defects which can be resolved via remedial works.
	P	Poor	Low vitality, low development and distribution of buds, discoloured leaves, low crown density, little extension growth for the species and/or structural defects which cannot be resolved via remedial works.
	D	Dead	Dead
	Fair to Good		Indicates a range of conditions (e.g. within a group)
Crown clearance	The height to the lowest part of the crown, measured in metres and recorded to the nearest half metre for dimensions up to 10 m and the nearest whole metre for dimensions over 10 m.		
DBH	Diameter at Breast Height.		
Estimated Height	Height of the tree, measured in metres and recorded to the nearest half metre dimensions up to 10 m and the nearest whole metre for dimensions over 10 m.		

Term	Definition
Observations	General observations, particularly of structural and/or physiological condition (e.g. the presence of any decay and physical defect).
Preliminary Management Recommendations	Preliminary Management Recommendations are provided irrespective of whether the vegetation concerned will be lost to the proposed scheme or not. This accords with BS5837: (2012) 'Trees in Relation to Design, Demolition and Construction – Recommendations'. Amongst other functions, describing such measures ensures that any readily achievable potential value associated with vegetation can be taken into account during subsequent assessment.
Ref No	Specific identification number given to each tree or group Corresponding number on plan – T=Tree / H=Hedge / G=Group
Root Protection Area (RPA)	An area which defines the theoretical minimum area around a tree deemed to contain sufficient roots and rooting volume to maintain the tree's viability and where the protection of the roots and soil structure is treated as a priority. Measured as the radius of a circle in metres, and total area in square metres.
Species	Common name followed by scientific name shown in italics
Stem diameter	Diameter measured in millimetres at 1.5 m above ground level (MS = Multi-stem tree measured in accordance with BS5837)
#	Dimension estimated due to tree(s), hedgerow(s) etc. not being accessible and preventing accurate measuring.
##	Indicates the estimated position of a tree (that is not otherwise indicated on a topographical survey) or a value based upon an average of remaining measurements or visual estimate.
*	Indicates where it is not possible to determine the extent of growth due to canopies overlapping.

APPENDIX B TREE CONSTRAINTS PLANS

KEY

- APPLICATION BOUNDARY SURVEY BOUNDARY
- A - CATEGORY TREES (HIGH QUALITY & VALUE)
- B - CATEGORY TREES (MODERATE QUALITY & VALUE)
- C - CATEGORY TREES (LOW QUALITY & VALUE)
- U - CATEGORY TREES (DEAD, DEFECTIVE, INFECTED)
- RPA - ROOT PROTECTION AREAS (RPA) - AS DEFINED BY BS 5837:2012



0 5 10 20 30 40 50m

SCALE 1:500 @ A1; 1:1000 @ A3

Project Management Initials: Designer: NH Checked: HB Approved: RB ISO A1 594mm x 841mm

Filename: K:\NEWPROJE\60509148 - ST ATHAN LANDSCAPE\GRAPHICS\01_CAD\60509148-SHT-00-0000-CT-TCP APR 2017.DWG Last saved by: RICHARD.BASSINDALE Last Printed: 2017-03-27

AECOM

PROJECT

ST. ATHAN NORTHERN ACCESS ROAD

CLIENT

WELSH GOVERNMENT

Llywodraeth Cymru
Welsh Government

CONSULTANT

AECOM
1 CALLAGHAN SQUARE
CARDIFF
CF10 5BT
TEL: (029) 20674600
FAX: (029) 20674699

SAFETY, HEALTH AND ENVIRONMENTAL INFORMATION
In addition to the hazards/risks normally associated with the types of work detailed on this drawing, note the following specific residual risks (Reference shall also be made to the design hazard log).
Construction
For Hazards Refer to Document: Safety in Design - Designers Residual Hazard Register

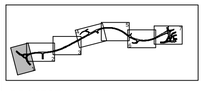
STATUS

PLANING SUBMISSION ISSUE

ISSUE/REVISION

I/R	DATE	DESCRIPTION
A	27-03-17	PLANING SUBMISSION ISSUE

KEY PLAN



PROJECT NUMBER

60509148

SHEET TITLE

TREE CONSTRAINTS DRAWING
SHEET 1 OF 7

FIGURE NUMBER

01

ISO A1 594mm x 841mm

Project Management (initials): Designer: NH Checked: HB Approved: RB

Filename: K:\NEWPROJE\60509148 - ST ATHAN LAN\DSCAPE\GRAPHICS\01_CAD\60509148-SHT-00-0000-CT-TCP-APR 2017.DWG Last saved by: RICHARD.BASSINDALE Last Printed: 2017-03-27

KEY

- APPLICATION BOUNDARY SURVEY BOUNDARY
- A - CATEGORY TREES (HIGH QUALITY & VALUE)
- B - CATEGORY TREES (MODERATE QUALITY & VALUE)
- C - CATEGORY TREES (LOW QUALITY & VALUE)
- U - CATEGORY TREES (DEAD, DEFECTIVE, INFECTED)
- ROOT PROTECTION AREAS (RPA) - AS DEFINED BY BS 5837:2012

N

CONTINUATION - REFER TO SHEET 1

CONTINUATION - REFER TO SHEET 3

G7 G8 G11 G13 G16 H9 H10 H12

0 5 10 20 30 40 50m

SCALE 1:500 @ A1; 1:1000 @ A3

AECOM

PROJECT

ST. ATHAN NORTHERN ACCESS ROAD

CLIENT

WELSH GOVERNMENT

Llywodraeth Cymru
Welsh Government

CONSULTANT

AECOM
1 CALLAGHAN SQUARE
CARDIFF
CF10 5BT
TEL: (029) 20674600
FAX: (029) 20674699

SAFETY, HEALTH AND ENVIRONMENTAL INFORMATION
In addition to the hazards/risks normally associated with the types of work detailed on this drawing, note the following specific residual risks (Reference shall also be made to the design hazard log).
Construction
For Hazards Refer to Document: Safety in Design - Designers Residual Hazard Register

STATUS

PLANING SUBMISSION ISSUE

ISSUE/REVISION

IIR	DATE	DESCRIPTION
A	27-03-17	PLANING SUBMISSION ISSUE

KEY PLAN

PROJECT NUMBER

60509148

SHEET TITLE

TREE CONSTRAINTS DRAWING
SHEET 2 OF 7

FIGURE NUMBER

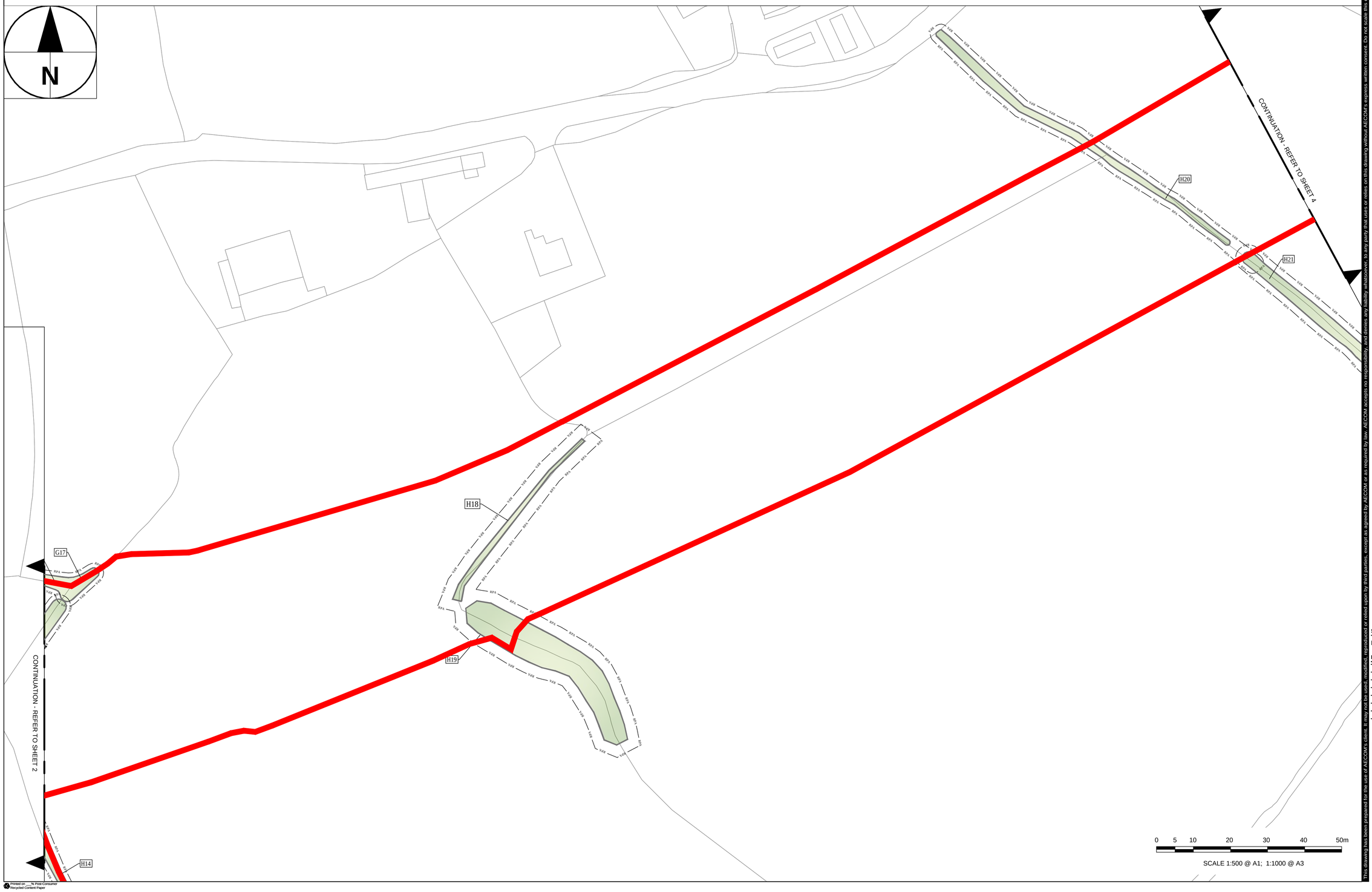
02

ISO A1 594mm x 841mm

Project Management Initials: Designer: NH Checked: HB Approved: RB

KEY

- APPLICATION BOUNDARY SURVEY BOUNDARY
- A - CATEGORY TREES (HIGH QUALITY & VALUE)
- B - CATEGORY TREES (MODERATE QUALITY & VALUE)
- C - CATEGORY TREES (LOW QUALITY & VALUE)
- U - CATEGORY TREES (DEAD, DEFECTIVE, INFECTED)
- ROOT PROTECTION AREAS (RPA) - AS DEFINED BY BS 5837:2012



0 5 10 20 30 40 50m

SCALE 1:500 @ A1; 1:1000 @ A3

Printed on ___% Post-Consumer Recycled Content Paper

Filename: K:\NEWPROJ\E\60509148 - ST ATHAN LAN\05C-APE\GRAPHICS\01_CAD\60509148-SHT-00-0000-CT-TCP APR 2017.DWG Last saved by: RICHARD.BASSINDALE Last Plotted: 2017-03-27

AECOM

PROJECT

ST. ATHAN NORTHERN ACCESS ROAD

CLIENT

WELSH GOVERNMENT

Llywodraeth Cymru
Welsh Government

CONSULTANT

AECOM
1 CALLAGHAN SQUARE
CARDIFF
CF10 5BT
TEL: (029) 20674600
FAX: (029) 20674699

SAFETY, HEALTH AND ENVIRONMENTAL INFORMATION
In addition to the hazards/risks normally associated with the types of work detailed on this drawing, note the following specific residual risks (Reference shall also be made to the design hazard log).
Construction
For Hazards Refer to Document: Safety in Design - Designers Residual Hazard Register

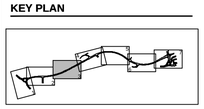
STATUS

PLANING SUBMISSION ISSUE

ISSUE/REVISION

IR	DATE	DESCRIPTION
A	27-03-17	PLANING SUBMISSION ISSUE

KEY PLAN



PROJECT NUMBER

60509148

SHEET TITLE

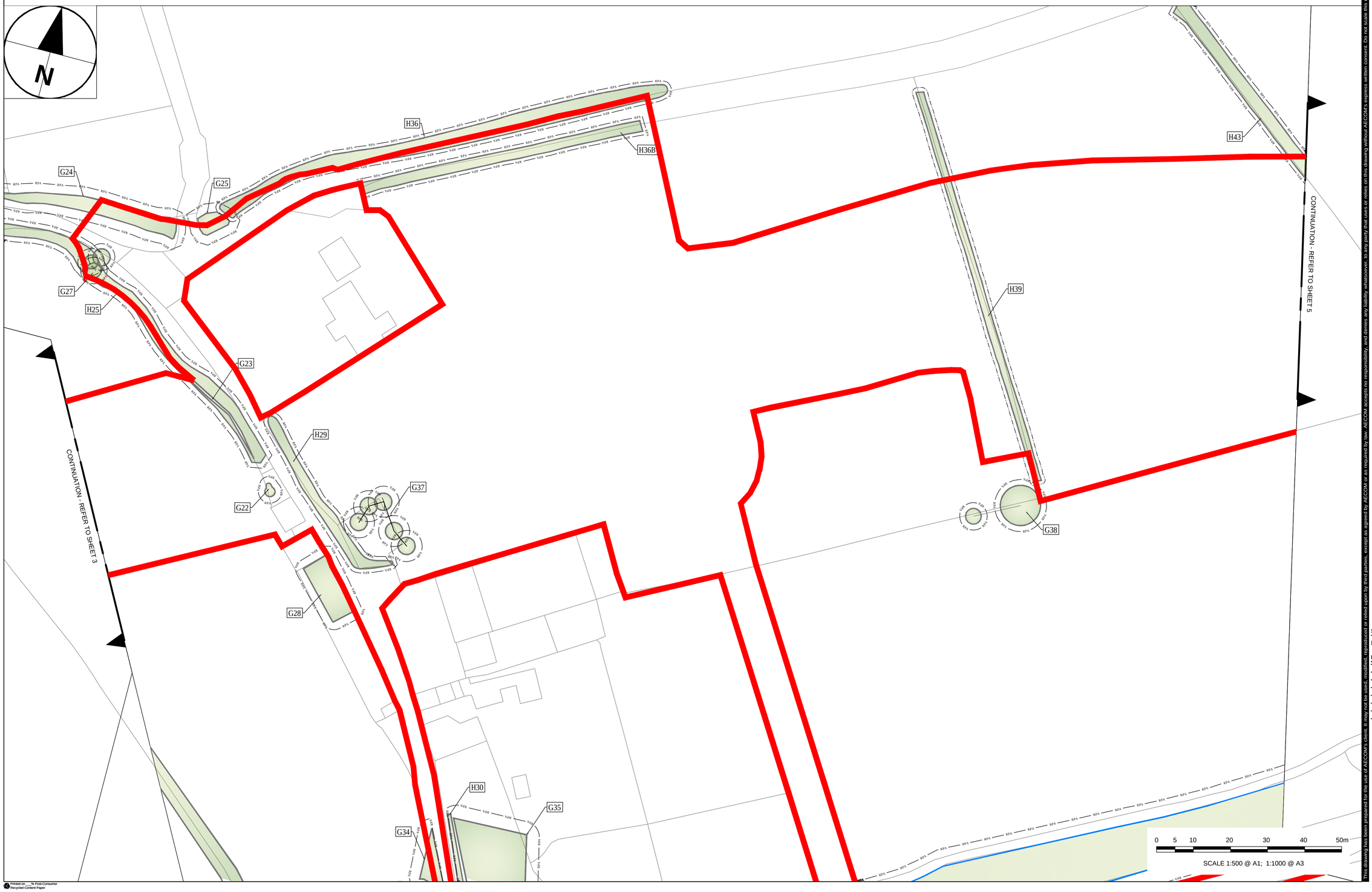
TREE CONSTRAINTS DRAWING
SHEET 3 OF 7

FIGURE NUMBER

03

KEY

- APPLICATION BOUNDARY SURVEY BOUNDARY
- A - CATEGORY TREES (HIGH QUALITY & VALUE)
- B - CATEGORY TREES (MODERATE QUALITY & VALUE)
- C - CATEGORY TREES (LOW QUALITY & VALUE)
- U - CATEGORY TREES (DEAD, DEFECTIVE, INFECTED)
- ROOT PROTECTION AREAS (RPA) - AS DEFINED BY BS 5837:2012



ISO A1 594mm x 841mm

Project Management Initials: Designer: NH Checked: HB Approved: RB

Filename: K:\NEWPROJ\60509148 - ST ATHAN LANDSCAPE\GRAPHICS\01_CAD\60509148-SHT-00-0000-CT-TCP APR 2017.DWG Last saved by: RICHARD.BASSINDALE Last Plotted: 2017-03-27

Printed on ___% Post-Consumer Recycled Content Paper

AECOM

PROJECT

ST. ATHAN NORTHERN ACCESS ROAD

CLIENT

WELSH GOVERNMENT

Llywodraeth Cymru
Welsh Government

CONSULTANT

AECOM
1 CALLAGHAN SQUARE
CARDIFF
CF10 5BT
TEL: (029) 20674600
FAX: (029) 20674699

SAFETY, HEALTH AND ENVIRONMENTAL INFORMATION
In addition to the hazards/risks normally associated with the types of work detailed on this drawing, note the following specific residual risks (Reference shall also be made to the design hazard log).
Construction
For Hazards Refer to Document: Safety in Design - Designers Residual Hazard Register

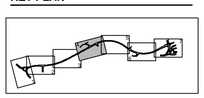
STATUS

PLANING SUBMISSION ISSUE

ISSUE/REVISION

IR	DATE	DESCRIPTION
A	27-03-17	PLANING SUBMISSION ISSUE

KEY PLAN



PROJECT NUMBER

60509148

SHEET TITLE

TREE CONSTRAINTS DRAWING
SHEET 4 OF 7

FIGURE NUMBER

04

KEY

- APPLICATION BOUNDARY SURVEY BOUNDARY
- A - CATEGORY TREES (HIGH QUALITY & VALUE)
- B - CATEGORY TREES (MODERATE QUALITY & VALUE)
- C - CATEGORY TREES (LOW QUALITY & VALUE)
- U - CATEGORY TREES (DEAD, DEFECTIVE, INFECTED)
- RPA - ROOT PROTECTION AREAS (RPA) - AS DEFINED BY BS 5837:2012

N

CONTINUATION - REFER TO SHEET 4

CONTINUATION - REFER TO SHEET 6

T42

H43

H44

G41

G45

0 5 10 20 30 40 50m

SCALE 1:500 @ A1; 1:1000 @ A3

AECOM

PROJECT

ST. ATHAN NORTHERN ACCESS ROAD

CLIENT

WELSH GOVERNMENT

Llywodraeth Cymru
Welsh Government

CONSULTANT

AECOM
1 CALLAGHAN SQUARE
CARDIFF
CF10 5BT
TEL: (029) 20674600
FAX: (029) 20674699

SAFETY, HEALTH AND ENVIRONMENTAL INFORMATION
In addition to the hazards/risks normally associated with the types of work detailed on this drawing, note the following specific residual risks (Reference shall also be made to the design hazard log).
Construction
For Hazards Refer to Document: Safety in Design - Designers Residual Hazard Register

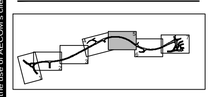
STATUS

PLANING SUBMISSION ISSUE

ISSUE/REVISION

IR	DATE	DESCRIPTION
A	27-03-17	PLANING SUBMISSION ISSUE

KEY PLAN



PROJECT NUMBER

60509148

SHEET TITLE

TREE CONSTRAINTS DRAWING
SHEET 5 OF 7

FIGURE NUMBER

05

ISO A1 594mm x 841mm

Project Management Initials: Designer: NH Checked: HB Approved: RB

Filename: K:\NEWPROJE\60509148 - ST ATHAN LANDSCAPE\GRAPHICS\01_CAD\60509148-SHT-00-0000-CT-TCP APR 2017.DWG Last saved by: RICHARD BASSINDALE Last Plotted: 2017-03-27

ISO A1 594mm x 841mm

Project Management Initials: Designer: NH Checked: HB Approved: RB

KEY

- APPLICATION BOUNDARY SURVEY BOUNDARY
- A - CATEGORY TREES (HIGH QUALITY & VALUE)
- B - CATEGORY TREES (MODERATE QUALITY & VALUE)
- C - CATEGORY TREES (LOW QUALITY & VALUE)
- U - CATEGORY TREES (DEAD, DEFECTIVE, INFECTED)
- ROOT PROTECTION AREAS (RPA) - AS DEFINED BY BS 5837:2012

N

CONTINUATION - REFER TO SHEET 5

CONTINUATION - REFER TO SHEET 7

G46 G47 G48 G52 G55 H50 H56 T49 T51 T53 T54

0 5 10 20 30 40 50m

SCALE 1:500 @ A1; 1:1000 @ A3

AECOM

PROJECT

ST. ATHAN NORTHERN ACCESS ROAD

CLIENT

WELSH GOVERNMENT

Llywodraeth Cymru
Welsh Government

CONSULTANT

AECOM
1 CALLAGHAN SQUARE
CARDIFF
CF10 5BT
TEL: (029) 20674600
FAX: (029) 20674699

SAFETY, HEALTH AND ENVIRONMENTAL INFORMATION
In addition to the hazards/risks normally associated with the types of work detailed on this drawing, note the following specific residual risks (Reference shall also be made to the design hazard log).
Construction
For Hazards Refer to Document: Safety in Design - Designers Residual Hazard Register

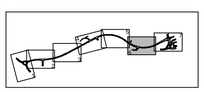
STATUS

PLANING SUBMISSION ISSUE

ISSUE/REVISION

I/R	DATE	DESCRIPTION
A	27-03-17	PLANING SUBMISSION ISSUE

KEY PLAN



PROJECT NUMBER

60509148

SHEET TITLE

TREE CONSTRAINTS DRAWING
SHEET 6 OF 7

FIGURE NUMBER

06

Filename: K:\NEWPROJE\60509148 - ST ATHAN LANDSCAPE\GRAPHICS\01_CAD\60509148-SHT-00-0000-CT-TCP APR 2017.DWG Last saved by: RICHARD.BASSINDALE Last Plotted: 2017-03-27

ISO A1 594mm x 841mm

Project Management Initials: Designer: NH Checked: HB Approved: RB

Filename: K:\NEWPROJ\EO\60509148 - ST ATHAN LAND\SCAPE\GRAPHICS\01_CAD\60509148-SHT-00-0000-CT-TCP APR 2017.DWG Last saved by: RICHARD.BASSINDALE Last Plotted: 2017-03-27

KEY

- APPLICATION BOUNDARY SURVEY BOUNDARY
- A - CATEGORY TREES (HIGH QUALITY & VALUE)
- B - CATEGORY TREES (MODERATE QUALITY & VALUE)
- C - CATEGORY TREES (LOW QUALITY & VALUE)
- U - CATEGORY TREES (DEAD, DEFECTIVE, INFECTED)
- RPA - ROOT PROTECTION AREAS (RPA) - AS DEFINED BY BS 5837:2012

N

G55

H56

G57

T58

T59

T60

G62

CONTINUATION - REFER TO SHEET 6

0 5 10 20 30 40 50m

SCALE 1:500 @ A1; 1:1000 @ A3

Printed on ___% Post-Consumer Recycled Content Paper

AECOM

PROJECT

ST. ATHAN NORTHERN ACCESS ROAD

CLIENT

WELSH GOVERNMENT

Llywodraeth Cymru
Welsh Government

CONSULTANT

AECOM
1 CALLAGHAN SQUARE
CARDIFF
CF10 5BT
TEL: (029) 20674600
FAX: (029) 20674699

SAFETY, HEALTH AND ENVIRONMENTAL INFORMATION
In addition to the hazards/risks normally associated with the types of work detailed on this drawing, note the following specific residual risks (Reference shall also be made to the design hazard log).
Construction
For Hazards Refer to Document: Safety in Design - Designers Residual Hazard Register

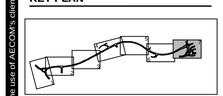
STATUS

PLANING SUBMISSION ISSUE

ISSUE/REVISION

IR	DATE	DESCRIPTION
A	27-03-17	PLANING SUBMISSION ISSUE

KEY PLAN



PROJECT NUMBER

60509148

SHEET TITLE

TREE CONSTRAINTS DRAWING
SHEET 7 OF 7

FIGURE NUMBER

07

APPENDIX C PLANNING APPLICATION BOUNDARY

ISO A1 594mm x 841mm

Project Management Initials: Designer: TAM Checked: RM Approved: RM

Last Plotted: 2017-03-21

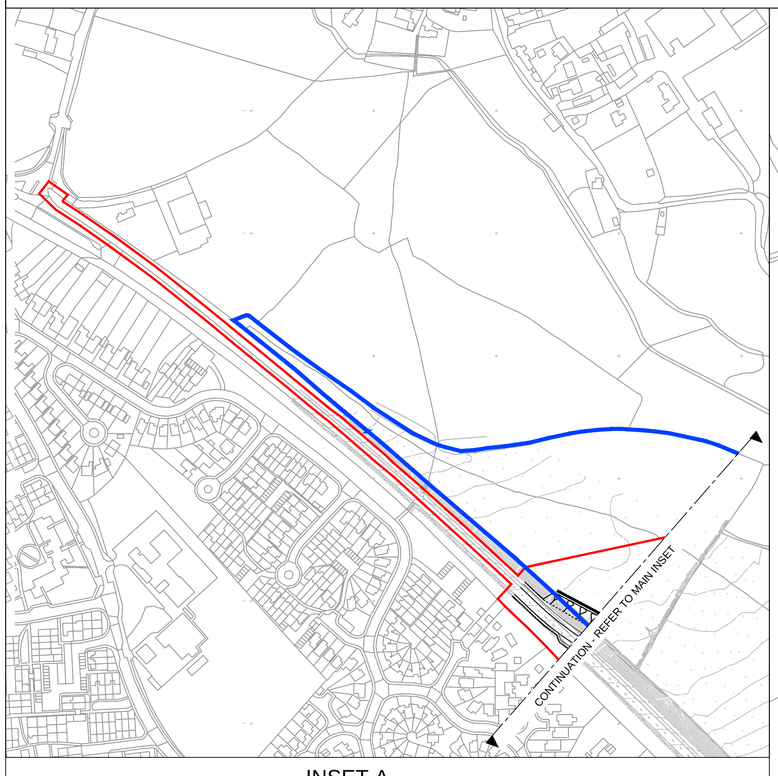
Filename: F:\PROJECTS\HIGHWAYS - ST ATHAN\03 EXECUTION\03 DOCUMENTS\08 CAD\01 WORKING\DRAWINGS\0050 - BOUNDARY & LAND AQUISITION\60509148-REF-00-0000-CT-3020.DWG Last saved by: TAYLOR012

NOTES

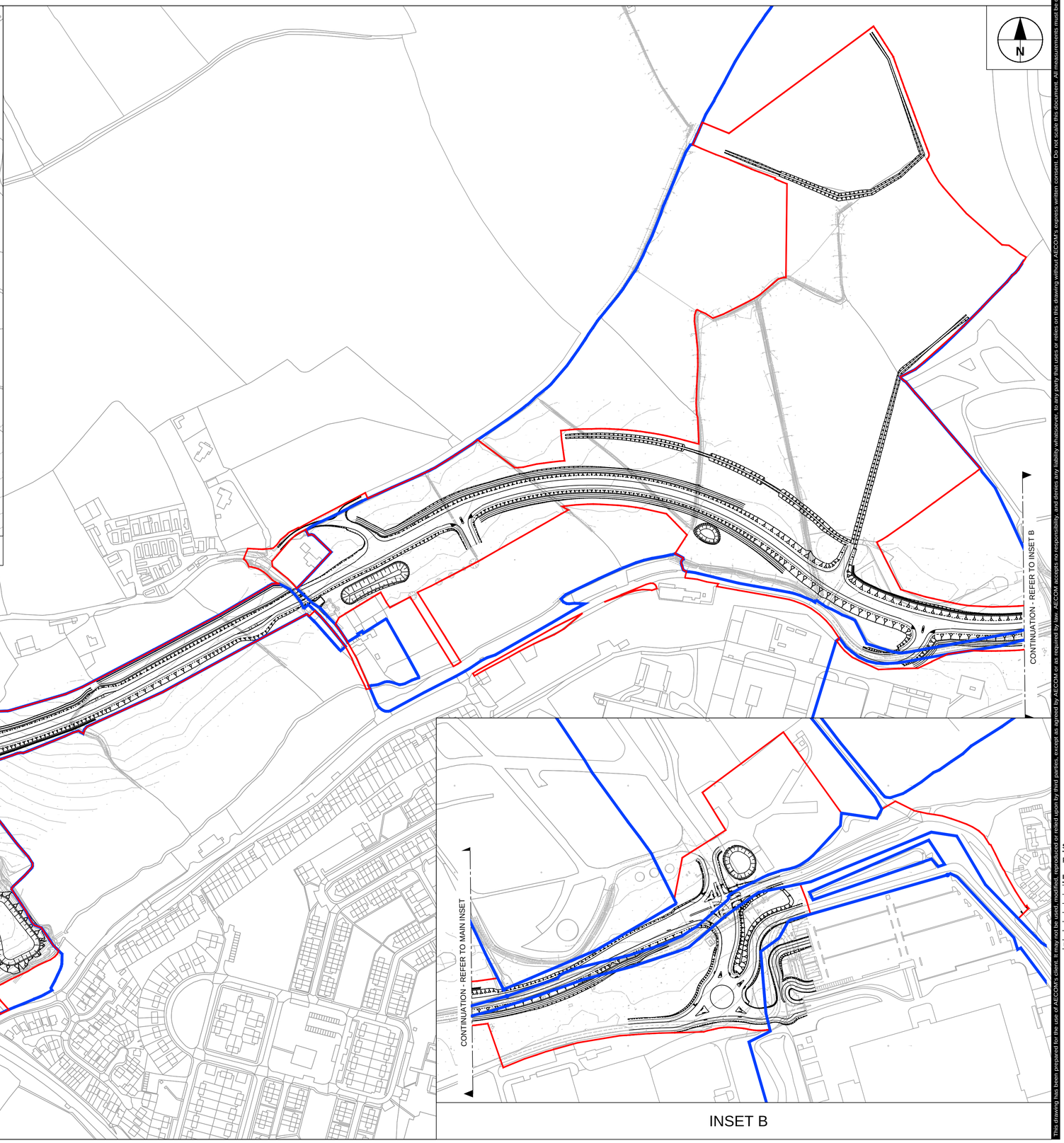
1. THIS DRAWING PROVIDES DETAILS OF THE PLANNING APPLICATION BOUNDARY FOR THE ST. ATHAN NORTHERN ACCESS ROAD.
2. FOR DETAILS OF THE DESIGN REFER TO THE GENERAL ARRANGEMENT DRAWINGS 60509148-SHT-30-000-CT-0121 TO 0127.

KEY

- PLANNING APPLICATION BOUNDARY
- WELSH GOVERNMENT LAND OWNERSHIP BOUNDARY



INSET A



INSET B

AECOM

PROJECT

ST. ATHAN NORTHERN ACCESS ROAD

CLIENT

WELSH GOVERNMENT

Llywodraeth Cymru
Welsh Government

CONSULTANT

AECOM
1 CALLAGHAN SQUARE
CARDIFF
CF10 5BT
TEL: (029) 20674600
FAX: (029) 20674699

SAFETY, HEALTH AND ENVIRONMENTAL INFORMATION
In addition to the hazards/risks normally associated with the types of work detailed on this drawing, note the following specific residual risks (Reference shall also be made to the design hazard log).
Construction
For Hazards Refer to Document: Safety in Design - Designers Residual Hazard Register

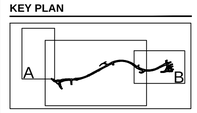
STATUS

PLANNING SUBMISSION ISSUE

ISSUE/REVISION

I/R	DATE	DESCRIPTION
A	21-03-2017	PLANNING SUBMISSION ISSUE

KEY PLAN



PROJECT NUMBER

60509148

SHEET TITLE

ST.ATHAN
PLANNING APPLICATION BOUNDARY

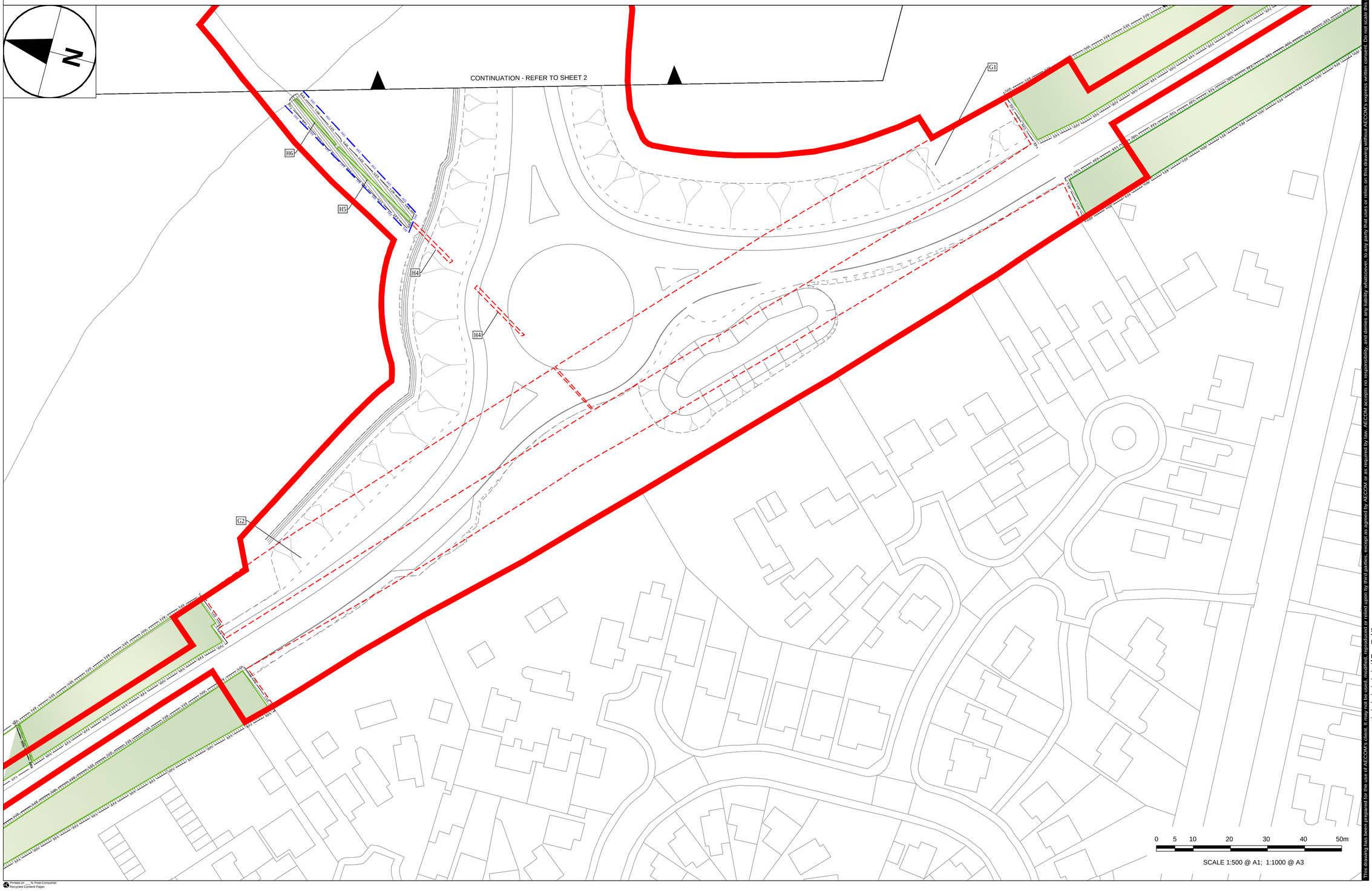
SHEET NUMBER

60509148-SHT-30-0000-CT-3020

APPENDIX D TREE PROTECTION PLANS

KEY

- APPLICATION BOUNDARY
- TPF TREE PROTECTION FENCING
- EXISTING RETAINED TREE, GROUP OR HEDGE
- EXISTING TREE, GROUP OR HEDGE TO BE REMOVED.
- RPA ROOT PROTECTION AREAS (RPA) - AS DEFINED BY BS 5837:2012
- CONSTRUCTION EXCLUSION ZONE



SCALE 1:500 @ A1; 1:1000 @ A3

AECOM

PROJECT

ST. ATHAN NORTHERN ACCESS ROAD

CLIENT

WELSH GOVERNMENT

Llywodraeth Cymru
Welsh Government

CONSULTANT

AECOM
1 CALLAGHAN SQUARE
CARDIFF
CF10 5BT
TEL: (029) 20674600
FAX: (029) 20674699

SAFETY, HEALTH AND ENVIRONMENTAL INFORMATION
In addition to the hazards/risks normally associated with the types of work detailed on this drawing, note the following specific residual risks (Reference shall also be made to the design hazard log).
Construction
For Hazards Refer to Document: Safety in Design - Designers Residual Hazard Register

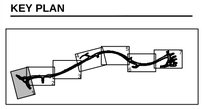
STATUS

PLANNING SUBMISSION ISSUE

ISSUE/REVISION

I/R	DATE	DESCRIPTION
-	15-03-2017	PLANNING SUBMISSION ISSUE

KEY PLAN



PROJECT NUMBER

60509148

SHEET TITLE

TREE PROTECTION PLAN
SHEET 1 OF 7

FIGURE NUMBER

08

ISO A1 594mm x 841mm
Project Management Initials: Designer: HB Checked: RB Approved: MJ
Filename: K:\NEWPROJE\60509148 - ST ATHAN LANDSCAPE\GRAPHICS\01_CAD\60509148-SHT-30-000-CT-TPP.DWG Last saved by: RICHARD.BASSINDALE Last Plotted: 2017-03-27
Printed on ___% Post-Consumer Recycled Content Paper

KEY

- APPLICATION BOUNDARY
- TREE PROTECTION FENCING
- EXISTING RETAINED TREE, GROUP OR HEDGE
- EXISTING TREE, GROUP OR HEDGE TO BE REMOVED.
- ROOT PROTECTION AREAS (RPA) - AS DEFINED BY BS 5837:2012
- CONSTRUCTION EXCLUSION ZONE

N

H10

G11

H12

G13

G7

H14

CONTINUATION - REFER TO SHEET 3

CONTINUATION - REFER TO SHEET 1

G8

H9

G16

0 5 10 20 30 40 50m

SCALE 1:500 @ A1; 1:1000 @ A3

ISO A1 594mm x 841mm

Project Management Initials: Designer: HB Checked: RB Approved: MJ

Filename: K:\NEWPROJE\60509148 - ST ATHAN LANDSCAPE\GRAPHICS\01_CAD\60509148-SHT-30-000-CT-TPP.DWG Last saved by: RICHARD.BASSINDALE Last Plotted: 2017-03-27

AECOM

PROJECT

ST. ATHAN NORTHERN ACCESS ROAD

CLIENT

WELSH GOVERNMENT

Llywodraeth Cymru
Welsh Government

CONSULTANT

AECOM
1 CALLAGHAN SQUARE
CARDIFF
CF10 5BT
TEL: (029) 20674600
FAX: (029) 20674699

SAFETY, HEALTH AND ENVIRONMENTAL INFORMATION
In addition to the hazards/risks normally associated with the types of work detailed on this drawing, note the following specific residual risks (Reference shall also be made to the design hazard log).
Construction
For Hazards Refer to Document: Safety in Design - Designers Residual Hazard Register

STATUS

PLANNING SUBMISSION ISSUE

ISSUE/REVISION

IR	DATE	DESCRIPTION
-	15-03-2017	PLANNING SUBMISSION ISSUE

KEY PLAN

PROJECT NUMBER

60509148

SHEET TITLE

TREE PROTECTION PLAN
SHEET 2 OF 7

FIGURE NUMBER

09

KEY

- APPLICATION BOUNDARY
- TPF TREE PROTECTION FENCING
- EXISTING RETAINED TREE, GROUP OR HEDGE
- EXISTING TREE, GROUP OR HEDGE TO BE REMOVED.
- RPA ROOT PROTECTION AREAS (RPA) - AS DEFINED BY BS 5837:2012
- CONSTRUCTION EXCLUSION ZONE

N

H20

H20

H21

CONTINUATION - REFER TO SHEET 4

H18

G17

H19

H19

H14

CONTINUATION - REFER TO SHEET 2

0 5 10 20 30 40 50m

SCALE 1:500 @ A1; 1:1000 @ A3

AECOM

PROJECT

ST. ATHAN NORTHERN ACCESS ROAD

CLIENT

WELSH GOVERNMENT

Llywodraeth Cymru
Welsh Government

CONSULTANT

AECOM
1 CALLAGHAN SQUARE
CARDIFF
CF10 5BT
TEL: (029) 20674600
FAX: (029) 20674699

SAFETY, HEALTH AND ENVIRONMENTAL INFORMATION
In addition to the hazards/risks normally associated with the types of work detailed on this drawing, note the following specific residual risks (Reference shall also be made to the design hazard log).
Construction
For Hazards Refer to Document: Safety in Design - Designers Residual Hazard Register

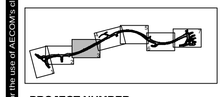
STATUS

PLANNING SUBMISSION ISSUE

ISSUE/REVISION

I/R	DATE	DESCRIPTION
-	15-03-2017	PLANNING SUBMISSION ISSUE

KEY PLAN



PROJECT NUMBER

60509148

SHEET TITLE

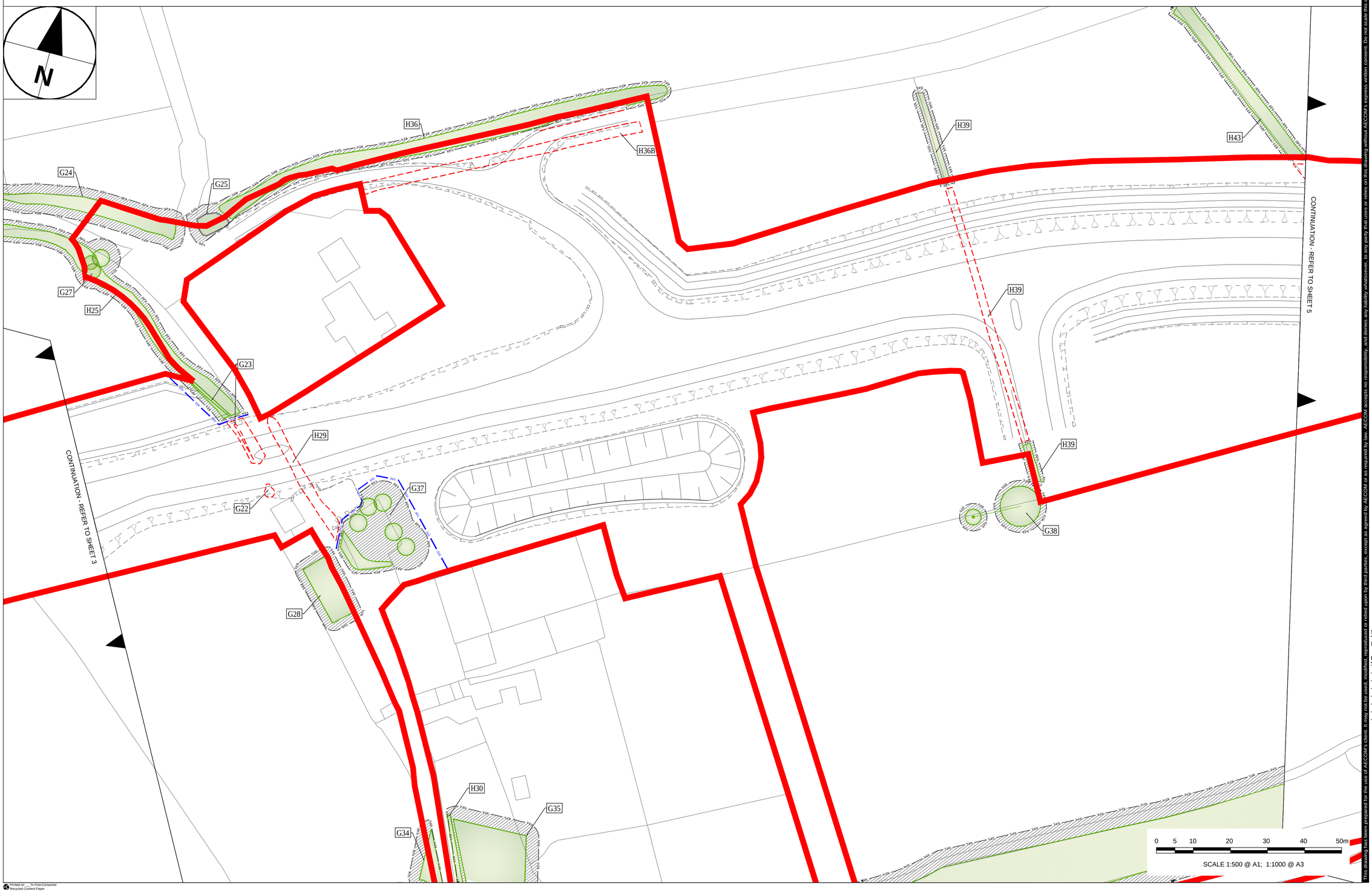
TREE PROTECTION PLAN
SHEET 3 OF 7

FIGURE NUMBER

10

KEY

- APPLICATION BOUNDARY
- TPF TREE PROTECTION FENCING
- EXISTING RETAINED TREE, GROUP OR HEDGE
- EXISTING TREE, GROUP OR HEDGE TO BE REMOVED.
- RPA ROOT PROTECTION AREAS (RPA) - AS DEFINED BY BS 5837:2012
- CONSTRUCTION EXCLUSION ZONE



AECOM

PROJECT

ST. ATHAN NORTHERN ACCESS ROAD

CLIENT

WELSH GOVERNMENT

Llywodraeth Cymru
Welsh Government

CONSULTANT

AECOM
1 CALLAGHAN SQUARE
CARDIFF
CF10 5BT
TEL: (029) 20674600
FAX: (029) 20674699

SAFETY, HEALTH AND ENVIRONMENTAL INFORMATION
In addition to the hazards/risks normally associated with the types of work detailed on this drawing, note the following specific residual risks (Reference shall also be made to the design hazard log).
Construction
For Hazards Refer to Document: Safety in Design - Designers Residual Hazard Register

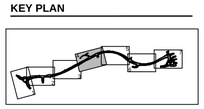
STATUS

PLANNING SUBMISSION ISSUE

ISSUE/REVISION

I/R	DATE	DESCRIPTION
-	15-03-2017	PLANNING SUBMISSION ISSUE

KEY PLAN



PROJECT NUMBER

60509148

SHEET TITLE

TREE PROTECTION PLAN
SHEET 4 OF 7

FIGURE NUMBER

11

ISO A1 594mm x 841mm

Project Management Initials: Designer: HB Checked: RB Approved: MJ

Filename: K:\NEWPROJE\60509148 - ST ATHAN LANDSCAPE\GRAPHICS\01_CAD\60509148-SHT-30-000-CT-TPP.DWG Last saved by: RICHARD.BASSINDALE Last Plotted: 2017-03-27

KEY

- APPLICATION BOUNDARY
- TPP — TREE PROTECTION FENCING
- EXISTING RETAINED TREE, GROUP OR HEDGE
- EXISTING TREE, GROUP OR HEDGE TO BE REMOVED.
- RPA — ROOT PROTECTION AREAS (RPA) - AS DEFINED BY BS 5837:2012
- CONSTRUCTION EXCLUSION ZONE

N

CONTINUATION - REFER TO SHEET 4

CONTINUATION - REFER TO SHEET 6

H43

H44

T42

G41

G45

0 5 10 20 30 40 50m

SCALE 1:500 @ A1; 1:1000 @ A3

ISO A1 594mm x 841mm

Project Management Initials: Designer: HB Checked: RB Approved: MJ

Filename: K:\NEWPROJ\AE\60509148 - ST ATHAN LAND\SCAPE\GRAPHICS\01_CAD\60509148-SHT-30-000-CT-TPP.DWG Last saved by: RICHARD.BASSINDALE Last Plotted: 2017-03-27

Printed on ___% Post-Consumer Recycled Content Paper

AECOM

PROJECT

ST. ATHAN NORTHERN ACCESS ROAD

CLIENT

WELSH GOVERNMENT

Llywodraeth Cymru
Welsh Government

CONSULTANT

AECOM
1 CALLAGHAN SQUARE
CARDIFF
CF10 5BT
TEL: (029) 20674600
FAX: (029) 20674699

SAFETY, HEALTH AND ENVIRONMENTAL INFORMATION
In addition to the hazards/risks normally associated with the types of work detailed on this drawing, note the following specific residual risks (Reference shall also be made to the design hazard log).
Construction
For Hazards Refer to Document: Safety in Design - Designers Residual Hazard Register

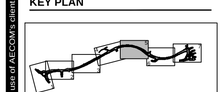
STATUS

PLANNING SUBMISSION ISSUE

ISSUE/REVISION

I/R	DATE	DESCRIPTION
-	15-03-2017	PLANNING SUBMISSION ISSUE

KEY PLAN



PROJECT NUMBER

60509148

SHEET TITLE

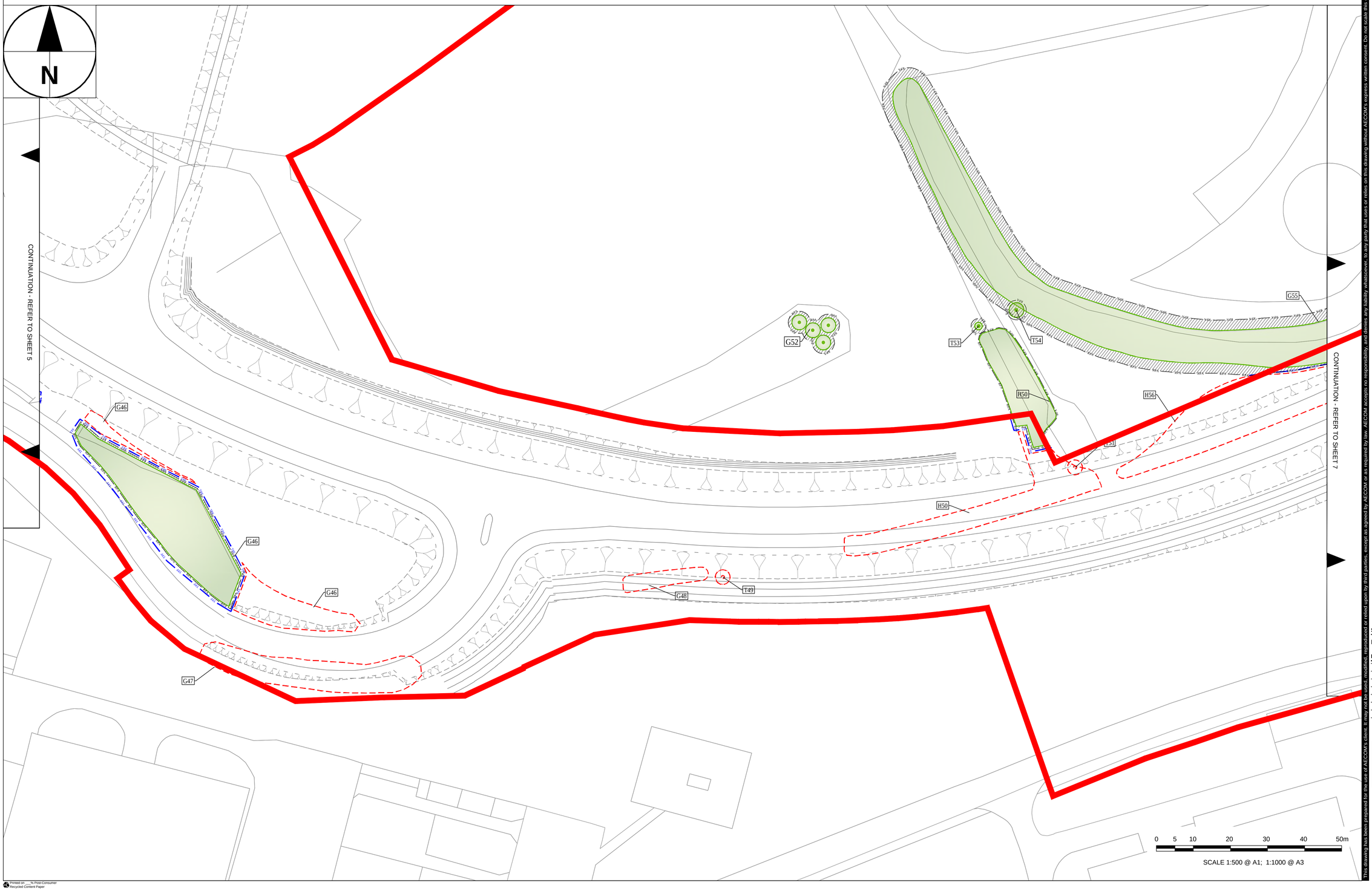
TREE PROTECTION PLAN
SHEET 5 OF 7

FIGURE NUMBER

12

KEY

- APPLICATION BOUNDARY
- TPF — TREE PROTECTION FENCING
- EXISTING RETAINED TREE, GROUP OR HEDGE
- EXISTING TREE, GROUP OR HEDGE TO BE REMOVED.
- RPA — ROOT PROTECTION AREAS (RPA) - AS DEFINED BY BS 5837:2012
- CONSTRUCTION EXCLUSION ZONE



0 5 10 20 30 40 50m

SCALE 1:500 @ A1; 1:1000 @ A3

AECOM

PROJECT

ST. ATHAN NORTHERN ACCESS ROAD

CLIENT

WELSH GOVERNMENT

Llywodraeth Cymru
Welsh Government

CONSULTANT

AECOM
1 CALLAGHAN SQUARE
CARDIFF
CF10 5BT
TEL: (029) 20674600
FAX: (029) 20674699

SAFETY, HEALTH AND ENVIRONMENTAL INFORMATION
In addition to the hazards/risks normally associated with the types of work detailed on this drawing, note the following specific residual risks (Reference shall also be made to the design hazard log).
Construction
For Hazards Refer to Document: Safety in Design - Designers Residual Hazard Register

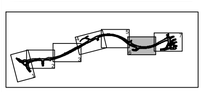
STATUS

PLANNING SUBMISSION ISSUE

ISSUE/REVISION

I/R	DATE	DESCRIPTION
-	15-03-2017	PLANNING SUBMISSION ISSUE

KEY PLAN



PROJECT NUMBER

60509148

SHEET TITLE

TREE PROTECTION PLAN
SHEET 6 OF 7

FIGURE NUMBER

13

Project Management Initials: Designer: HB Checked: RB Approved: MJ ISO A1 594mm x 841mm
Last saved by: RICHARD.BASSINDALE Last Plotted: 2017-03-27
Filename: K:\NEWPROJE\60509148 - ST ATHAN LANDSCAPE\GRAPHICS\01_CAD\60509148-SHT-30-000-CT-TPP.DWG

ISO A1 594mm x 841mm

Project Management Initials: Designer: HB Checked: RB Approved: MJ

Filename: K:\NEWPROJE\60509148 - ST ATHAN LANDSCAPE\GRAPHICS\01_CAD\60509148-SHT-30-000-CT-TPP.DWG Last saved by: RICHARD.BASSINDALE Last Plotted: 2017-03-27

KEY

- APPLICATION BOUNDARY
- TPF — TREE PROTECTION FENCING
- EXISTING RETAINED TREE, GROUP OR HEDGE
- EXISTING TREE, GROUP OR HEDGE TO BE REMOVED.
- RPA — ROOT PROTECTION AREAS (RPA) - AS DEFINED BY BS 5837:2012
- CONSTRUCTION EXCLUSION ZONE

N

G55

H56

G57

T58

T59

T60

G62

CONTINUATION - REFER TO SHEET 6

0 5 10 20 30 40 50m

SCALE 1:500 @ A1; 1:1000 @ A3

AECOM

PROJECT

ST. ATHAN NORTHERN ACCESS ROAD

CLIENT

WELSH GOVERNMENT

Llywodraeth Cymru
Welsh Government

CONSULTANT

AECOM
1 CALLAGHAN SQUARE
CARDIFF
CF10 5BT
TEL: (029) 20674600
FAX: (029) 20674699

SAFETY, HEALTH AND ENVIRONMENTAL INFORMATION
In addition to the hazards/risks normally associated with the types of work detailed on this drawing, note the following specific residual risks (Reference shall also be made to the design hazard log).
Construction
For Hazards Refer to Document: Safety in Design - Designers Residual Hazard Register

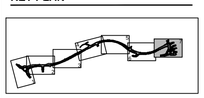
STATUS

PLANNING SUBMISSION ISSUE

ISSUE/REVISION

I/R	DATE	DESCRIPTION
-	15-03-2017	PLANNING SUBMISSION ISSUE

KEY PLAN



PROJECT NUMBER

60509148

SHEET TITLE

TREE PROTECTION PLAN
SHEET 7 OF 7

FIGURE NUMBER

14

About AECOM

AECOM (NYSE: ACM) is built to deliver a better world. We design, build, finance and operate infrastructure assets for governments, businesses and organizations in more than 150 countries.

As a fully integrated firm, we connect knowledge and experience across our global network of experts to help clients solve their most complex challenges.

From high-performance buildings and infrastructure, to resilient communities and environments, to stable and secure nations, our work is transformative, differentiated and vital. A Fortune 500 firm, AECOM companies had revenue of approximately US$19 billion during the 12 months ended June 30, 2015.

See how we deliver what others can only imagine at aecom.com and @AECOM.

Contact
Rhys Mander
Associate
T +44 (0)29 2067 4600
E rhys.mander@aecom.com

1 Callaghan Square
Cardiff
CF10 5BT
United Kingdom