



WBLR Phase 3

Arboricultural Impact Assessment

December 2024

Waterman Infrastructure & Environment Limited

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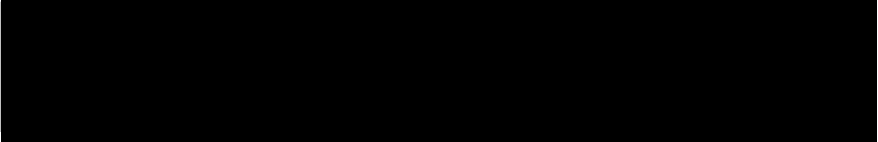
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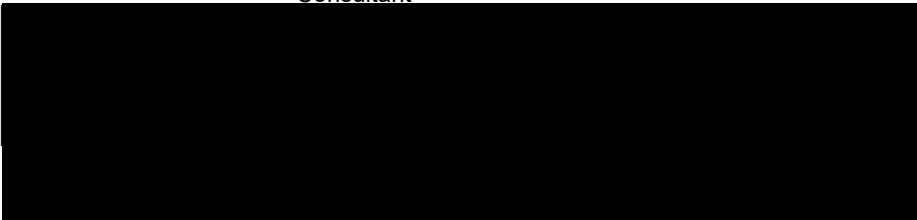
This document has been prepared and checked in accordance with Waterman Group’s IMS (BS EN ISO 9001: 2015, BS EN ISO 14001: 2015 and BS EN ISO 45001:2018)

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Comments

Disclaimer

This report has been prepared by Waterman Infrastructure & Environment Limited, with all reasonable skill, care and diligence within the terms of the Contract with the client, incorporation of our General Terms and Condition of Business and taking account of the resources devoted to us by agreement with the client.

We disclaim any responsibility to the client and others in respect of any matters outside the scope of the above.

This report is confidential to the client and we accept no responsibility of whatsoever nature to third parties to whom this report, or any part thereof, is made known. Any such party relies on the report at its own risk.

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Executive Summary

The Western Bridge and Link Road (WBLR) Phase 3 site (hereafter referred to as the 'Site') located on the outskirts of Burgess Hill in West Sussex is being considered for development. The development proposals (hereafter referred to as the 'Development') are for the construction of a pedestrian footpath and cycle path alongside the A273 and A2300 carriageways.

The Site comprises approximately 370m of the A273 (Jane Murray Way) and approximately 290m in length of the A2300.

A tree survey of the Site was undertaken in October 2022 and the results of that tree survey exercise have been used to guide the design process.

The tree survey and the recommendations made in this report follow the principles of BS5837:2012 Trees in Relation to Design, Demolition and Construction – Recommendations¹ (BS5837) and relevant Mid Sussex District Council planning policy.

A total of 26No. individual trees, groups of trees and hedgerows were recorded as part of the tree survey. Of these arboricultural features, 11No. were awarded a moderate B grade and 15No. were awarded a low C grade.

At the time of writing this report, none of the trees present on the Site were afforded protection through the provisions of a Tree Preservation Order and no part of the Site is located within a Conservation Area.

The purpose of this Arboricultural Impact Assessment (AIA) is to evaluate the direct and indirect effects of the proposed design on the tree stock present both on and adjacent to the Site. In line with Annex B of BS5837, it also contains sufficient information to be submitted in support of any planning application pertinent to the Site and the design layout shown on **Drawing 2**.

A total of 7No. individual trees, 2No. tree groups and 6No. partial tree groups will be removed to facilitate the Development. Of these, 3No. groups were awarded a moderate B grade and 12No. individuals and groups were awarded a low C grade.

¹ British Standard Institution (2012) *BS5837 Trees in Relation to Design, Demolition and Construction - Recommendations*

1. Introduction

- 1.1. Waterman Infrastructure & Environment Limited (Waterman) was instructed by the Jackson Civil Engineering Ltd (hereafter referred to as the 'Applicant') to undertake an Arboricultural survey and Impact Assessment (AIA) of trees on land at the WBLR Phase 3 site on the outskirts of Burgess Hill in West Sussex ('the Site'). The Site is currently being considered for development.
- 1.2. The current development proposals ('the Development') broadly comprise the construction of a pedestrian footpath and cycle path along approximately 370m of the A273 (Jane Murray Way) and approximately 290m of the A2300.
- 1.3. The purpose of this AIA is to evaluate the direct and indirect effects of the proposed design on the tree stock present both on and adjacent to the Site. It includes recommendations for an appropriate level of mitigation and/or compensation where necessary.
- 1.4. It documents the findings of a baseline survey of the arboricultural features on and immediately adjacent to the Site. The above and below ground constraints posed by the canopy shape and subterranean rooting area of the surveyed trees are described.
- 1.5. This report should be read in conjunction with the other documents, plans and technical studies submitted to support the proposed development of the Site.
- 1.6. Trees are a material consideration in the planning process and as such, the information within this report has been aligned where possible with the general policies and development objectives of the relevant planning policies outlined within **Appendix A** and the principles set out in BS5837.

2. Site Description

- 2.1. The Site is centred on Ordnance Survey Grid Reference TQ 29598 20076. It is located on the outskirts of Burgess Hill in West Sussex and is approximately 2km from the centre of the town.
- 2.2. The site extends along the verge of the northbound carriageway on the A273 (Jane Murray Way) for approximately 370m then on both sides of the A2300 northwest for approximately 290m.
- 2.3. The existing roadside verges on the A273 comprised flat grassed areas immediately adjacent to the road which then dropped off to bank down to adjacent land. The verges were intermittently covered with dense blackthorn and overhanging branches from adjacent land. The verge adjacent to the northwest-bound lane of the A2300 was similar to that of the A273 with grassed verge and overhanging branches. The verge adjacent to the southeast-bound lane of the A2300 was comprised of a flat, grassed area with between 6m and 10m clearance between the road and adjacent vegetation.



Photograph 1: View looking northeast towards the Triangle Roundabout.



Photograph 2: View looking northeast along Jane Murray Way (A273).



Photograph 3: View looking northeast along Jane Murray Way (A273) and overhanging branches of T1.



Photograph 4: View looking southwest along Jane Murray Way.



Photograph 5: View looking northwest along the A2300.

3. Tree Survey Methodology

- 3.1. A tree survey of the Site was carried out on the 14th October 2022. The tree survey methodology followed the recommendations set out in BS5837.
- 3.2. The survey involved collecting the following information on all trees (both on and off-site) with a stem diameter over 75mm which have the potential to influence the proposed Development.

Tree Numbers

- 3.3. Individual trees surveyed were given the prefix 'T'. Trees have been grouped where they form cohesive aerodynamic (i.e. companion shelter), visual (i.e. screening) or cultural (i.e. parkland) arboreal features of similar quality, as identified by the prefix 'G'.

Species

- 3.4. Species are listed by both their common name and Latin name in the schedule in **Appendix C** and by their common name in the body of the report.

Height

- 3.5. Tree heights are approximate and estimated in metres.

Stem Diameter

- 3.6. The stem diameter of single stemmed trees is measured at 1.5m above ground level and given in millimetres. The diameter measurement of multi-stemmed trees is shown as a measurement of each major stem present. Where stems fork or swell, the measurement is taken at the narrowest point below the fork or swelling. Where access to the trunk of a tree is not available, an estimation of the stem diameter is made and identified by "*" on the accompanying tree survey table.

Crown Spread

- 3.7. Radial crown spread is measured in metres to the nearest 0.5m (rounded up). These are recorded for each of the four cardinal points where access allows. Where access is not available the crown spread is a visual estimate derived from site-based observations and identified by "*" on the accompanying tree survey table. As such, the canopy shape for surveyed trees depicted on the accompanying plans accurately represents the canopy spread as measured on Site.

Height of Crown Clearance and Canopy

- 3.8. The height of crown clearance is the height above ground in metres of the first significant branch and the direction of growth. The height of canopy is the average height above ground in metres of the main canopy. These are measured to the nearest half metre (rounded up) for dimensions up to 10m and the nearest whole metre for dimensions over 10m.

Age Class

- 3.9. The age of each tree is defined as follows:

- Young (Y): Within the first 1/4 of useful life expectancy.
- Semi-mature (SM): Within the second 1/4 of useful life expectancy.
- Early Mature (EM): Within the third 1/4 of useful life expectancy.
- Mature (M): Within the fourth 1/4 of useful life expectancy.
- Over Mature (OM): Tree has exceeded normal life expectancy.
- Veteran (V) Tree displaying veteran characteristics ².

Physiological and Structural Condition

- 3.10. The physiological or structural condition of each tree and tree group is described, highlighting specific features. The survey involved ground level examination of the external features of the trees. The structural condition for each tree is described as being Good, Fair or Poor and the physiological condition is described as Good, Fair, Poor, Moribund or Dead.
- 3.11. Where appropriate, notes on the structural integrity are provided on form, taper, forking habit, storm damage, decay, fungi, pests, etc. Where identified, signs of substantial defects or debility have been recorded. Where access to a tree was not possible, an estimation of physiological and structural condition has been made.

Estimated Remaining Contribution (ERC) in Years

- 3.12. The Estimated Remaining Contribution (ERC) for each tree is based on species and the existing physiological and structural condition of the tree. The ERC may affect proposed development layout because the longer the tree is likely to live, the greater the contribution it will make and the greater the need for retention.

Category Grading

- 3.13. Each individual tree was given a Category Grading in accordance with BS5837 to reflect their overall quality and value. Further details of the tree categorisation method can be found in **Appendix B** and Section 7 of this report.

Preliminary Management Recommendations

- 3.14. Any recommendations made for management of the trees (for example, tree surgery) prior to development are not a 'specification' for tree work. These recommendations are proposed on the basis that they are undertaken by a qualified arboricultural contractor, such as those listed in the Arboricultural Association's Approved Contractors Directory (www.trees.org.uk). Any work undertaken by the contractor should be in accordance with best practice, such as the European Tree Pruning Guide³, or required by BS3998: 2010 'Tree work – recommendations'⁴.
- 3.15. Where management recommendations are made, they are accompanied by a recommended timeframe in which they should be undertaken.

² <http://www.ancienttreeforum.co.uk/ancient-trees/what-are-ancient-veteran-trees/>

³ European Tree Pruning Guide, 2001, Arboricultural Association

⁴ BS3998:2010 'Tree work - recommendations', 2010, BSI

4. Root Protection Area

- 4.1. The Root Protection Area (RPA) of a tree is defined in BS5837 as a “*layout design tool indicating the minimum area around a tree deemed to contain sufficient roots and rooting volume to maintain the tree’s viability and where the protection of the roots and soil structure is treated as a priority*”. For single stemmed trees it is equivalent to a circle with a radius 12 times the stem diameter when measured at 1.5m above ground level. BS5837 outlines the calculation of RPA as follows:

$$RPA(m^2) = \left(\frac{\text{stem diameter (mm) @ 1.5 m} \times 12}{1\,000} \right)^2 \times \pi \quad (3.142)$$

- 4.2. Trees with more than one stem originating below 1.5m above ground level 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:

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

- b) For trees with more than five stems:

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

- 4.3. The RPA of existing tree stock is an important material consideration when considering site constraints and planning development activities.
- 4.4. Unless there is an overriding justification for them, construction activities, materials storage or changes in level should be avoided within the RPA of a retained tree. 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. If operations are proposed within the RPA of a retained tree, it may be necessary to prove to the relevant Local Planning Authority that:
- All other alternative solutions have been explored and proven unviable;
 - That the tree can remain viable and that the area lost to encroachment can be compensated for elsewhere, contiguous with its RPA;
 - That mitigation measures can be put in place to improve the soil environment that is used by the tree (if necessary).

5. Limitations

- 5.1. This report is intended to assist with the planning and management of construction, refurbishment and/or demolition operations under current best practice guidance. It focuses on measures which will need to be implemented to ensure the protection of retained trees. It is the responsibility of the design team and site manager to ensure that any recommendations made also comply with all relevant health, safety and construction guidance and legislation.
- 5.2. This report is concerned with the arboricultural features of the Site only. Ground condition/history information has not been consulted as part of this assessment (such as history of ground disturbance, root damage, changes in soil levels, previous utility installations or changes in site conditions) unless otherwise stated.
- 5.3. All trees were visually inspected from ground level with no climbing, boring or core sampling undertaken. All measurements are metric and approximate. The comments made are based on observable factors present at the time of inspection.
- 5.4. Trees that were not directly accessible at the time of survey have been denoted with a '*' and detailed in the comments section within **Appendix C**.
- 5.5. The tree survey was based upon existing topographical information relating to the Site, produced by Midland Survey Ltd and provided by the Applicant (drawing ref. X-TOPO-2D-00000-1 dated March 2020). For the purposes of this report, it is assumed that the detail of the topographical survey is accurate and correct.
- 5.6. The design and construction of foundations on Site should be informed by appropriate soil sampling and laboratory testing in accordance with Chapter 4.2 of 'Building Near Trees' of the National House Building Council's Standards 2019. This report does not specifically relate to risks associated with subsidence, heave or other forms of disturbance associated with tree root growth or tree removal.
- 5.7. This report is not intended to confirm the safety (or otherwise) of surveyed trees or tree groups. References to defects or potential safety issues are not exhaustive and are intended as a guide only to inform the provision of further resources / more detailed investigations. The persons(s) responsible for the management of trees surveyed as part of this report are recommended to commission a separate Tree Condition Survey by a suitably qualified and experienced person in order to manage the health and safety aspects of trees under their control and discharge their reasonable 'Duty of Care' owed under the Occupiers' Liability Act 1984⁵.
- 5.8. Owing to the changing nature of trees as living, dynamic features and other Site circumstances, the baseline survey results are representative of the arboricultural features on the date of survey only and are subject to change.
- 5.9. The impact assessment is based on development proposals as provided to Waterman IE and contained in **Drawing 2**. Any alteration to the application Site or development proposals could change the current circumstances and may invalidate this report and any recommendations made.
- 5.10. Unless otherwise stated, trees should be inspected regularly to satisfy the 'Duty of Care' owed under the Occupiers' Liability Act 1984⁶, or directly after heavy storms (i.e. force 6-7 and above on the Beaufort scale). It is recommended that advice from an ecologist is sought prior to carrying out any works to trees, in order to ensure these are carried out in accordance with (in particular) the

⁵ Occupiers' Liability Act 1957 and 1984. HMSO

⁶ Occupiers' Liability Acts 1957 and 1984. HMSO

protection afforded to wild birds and bats under The Wildlife and Countryside Act⁷ and The Conservation of Habitats and Species Regulations⁸.

⁷ The Wildlife and Countryside Act 1981 (as amended), OPSI

⁸ The Conservation of Habitats and Species (Amendment) (EU Exit) Regulations 2019, OPSI

6. Tree Preservation Orders and Conservation Areas

- 6.1. Under Part VII of the *Town and Country Planning Act 1990* and as amended in the *Town and Country Planning (Tree Preservation) (England) Regulations 2012*, local planning authorities are given the powers to protect trees, groups of trees and woodlands through the provisions of a Tree Preservation Order (TPO). TPOs prohibit:
- cutting down;
 - topping;
 - lopping;
 - uprooting;
 - wilful damage; and
 - wilful destruction
- without the local planning authority's written consent.
- 6.2. All trees with a stem diameter above 75mm in diameter when measured at 1.5m above ground level are also afforded protection if they are located within a Conservation Area.
- 6.3. A check carried out on the 27th September 2024 of the Mid Sussex District Council on-line mapping portal⁹ has indicated that none of the trees present on the Site were afforded protection through the provisions of a TPO and no part of the Site is located within a Conservation Area.
- 6.4. Further details on TPOs and Conservation Areas can be found in **Appendix A**.

⁹ <https://www.midsussex.gov.uk/planning-building/trees-and-hedgerows/tree-preservation-order-tpo-map/>

7. Existing Tree Stock

- 7.1. Trees on site comprised predominantly mixed species Category B and C roadside groups. In most areas these groups were dense and formed effective screens between the highway and adjacent property.
- 7.2. Further details relating to the existing tree stock on or adjacent to the Site can be found in **Appendix C** and on **Drawing 1**.

Quality Category Grading

- 7.3. Each arboricultural feature was given a Category Grading in accordance with the principles of BS5837. The Category Gradings are defined according to the following criteria, which are further divided into sub-categories based on arboriculture, landscape and/or historic/cultural value, as defined within BS5837 and contained at **Appendix B** Table 1 summarises the arboricultural features by category.
- **Category Grading A:** Trees of high quality and value (with an estimated remaining life expectancy of at least 40 years) (coloured green on **Drawing 1**).
 - **Category Grading B:** Trees of moderate quality and value (with an estimated remaining life expectancy of at least 20 years) (coloured blue on **Drawing 1**).
 - **Category Grading C:** Trees of low quality and value (with an estimated remaining life expectancy of at least 10 years or young trees with a stem diameter less than 150mm) (coloured grey on **Drawing 1**).
 - **Category Grading U:** Trees which are 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 (coloured red on **Drawings 1**).

Table 1 Summary of tree features by category

	Tree Numbers & BS5837 Categories				Total
	Cat A	Cat B	Cat C	Cat U	
Trees	N/A	6	7	N/A	13
Groups	N/A	5	8	N/A	13
Total	0	11	15	0	26

8. Arboricultural Impact Assessment

- 8.1. This impact assessment is based on the General Arrangement drawing (Drawing ref. 19442-WIE-ZZ-XX-DR-C-900101 to 900104) which is contained as **Drawing 2**.
- 8.2. The Development proposals as shown on the Tree Removal and Protection Plan (TRPP) which is contained as **Drawing 3** comprise the construction of a pedestrian footpath and cycle path along approximately 370m of the A273 (Jane Murray Way) and approximately 290m of the A2300.
- 8.3. The relationship between the proposed Development and the existing tree stock has been assessed taking into account existing site-specific factors such as topography, waterbodies and existing built form.
- 8.4. **Table 2** identifies the impact of the proposed layout on those trees under the following headings:
 - i. **Trees unaffected by the development proposals:** These are trees which are unaffected by the works and can therefore safely be retained. These trees are still likely to require protection through the placement of Tree Protection Barriers.
 - ii. **Trees to be retained but requiring additional protection:** Trees fall into this category where the assessment has identified that they can be retained, but additional protection measures may be required to ensure their continued health and structural integrity. This is usually where works are proposed within their RPA or below their crowns; and
 - iii. **Trees to be removed:** Trees will need to be removed if they are directly under proposed structures; if they are so close to proposed works that the impact of the works on the roots or crowns of the tree will render the retention of the tree unviable; if they create an unacceptable constraint on occupants of the site post construction (shading, nuisance etc.); for reasons of sound arboricultural management;
- 8.5. **Table 3** summarises the cause of potential harm along with any mitigation measures for those trees which require additional protection. Where specific construction measures are prescribed, these are detailed in Section 10 of this report.

Table 2 Arboricultural Impact Assessment

	Tree Numbers			
	Cat A	Cat B	Cat C	Cat U
Trees unaffected by the development proposals	N/A	N/A	G17, G18	N/A
Trees/groups to be fully or partially retained but requiring additional protection	N/A	T1, T3, T4, T5, T7, T8,	G6, G12	N/A
Trees to be removed	N/A	G15*, G16*, G20*	G9, T10, T11, G13*, G14, G19*, T21, T22, G23*, T24, T25, T26	N/A

*group to be removed in part.

Table 3: Summary of Potential Damage to Retained Trees and Mitigation Measures

Tree Number	Species	Cause of Damage	Mitigation
T1	English oak	Footprint of proposed footpath in indicative RPA. Removal of hard surface within RPA.	The proposed footpath is to be based on a no-dig cellular confinement system (Cellweb or similar product) as specified in Section 10 of this report. Existing surfaces only to be removed in line with the specifications set out in Section 10 of this report.
T3, T4, T5	Leyland cypress	Hard surfacing to be replaced in indicative RPA.	Existing surfaces to be removed and replaced in line with the specifications set out in Section 10 of this report.
T7, T8	Common ash	Footprint of proposed footpath in indicative RPA.	The proposed footpath is to be based on a no-dig cellular confinement system (Cellweb or similar product) as specified in Section 10 of this report.
G6, G12	Mixed species	Branches overhang proposed footpath	Prune overhanging branches to provide 3m clearance over footpath.
All trees to be retained	Mixed species	Roadworks in proximity to tree stems, crown extremities and RPAs. Vehicular impact with tree branches.	Tree protection fencing as specified in Appendix D to be installed around group boundaries to prevent construction access and impact with branches.

9. Proposed Tree Works

- 9.1. **Table 2** and **Drawing 3** provides details of all trees and tree groups which will be removed to facilitate the Development.
- 9.2. These tree works will not be undertaken until a full planning approval has been granted for the proposed Development and they will be undertaken by a suitably qualified, experienced and insured tree works contactor with the works compliant with best practice, such as the European Tree Pruning Guide¹⁰, or required by BS3998: 2010 'Tree Work – Recommendations'¹¹.
- 9.3. Tree work will be timed to avoid the bird nesting season and other potential ecological constraints with legally protected species, subject to consultation with an ecologist. If required, tree surgery work on trees with deadwood, cavities, split/lifted bark and dense ivy should be carried out under an Ecological Watching Brief. Care will be taken not to damage any surrounding vegetation to be retained.
- 9.4. English oak T1 will require crown lifting of its southeast crown to a height of 3m to facilitate construction access and future footpath pedestrian use.
- 9.5. Trees T7 and T8 will require the pruning of 2.5m from their southeast crown extents in order to facilitate construction access and future footpath pedestrian use.

¹⁰ European Tree Pruning Guide, 2001, Arboricultural Association

¹¹ BS3998:2010 'Treework - Recommendations', 2010, BSI

10. Tree Protection Measures

Site Monitoring

- 10.1. A retained Arboricultural Consultant will be appointed prior to the commencement of any works on Site. Their purpose will be to ensure compliance with all agreed tree protection measures. As a minimum, a pre-commencement site meeting should be held with a representative of the appointed contractor(s), the retained Arboricultural Consultant and a representative of Mid Sussex District Council. The purpose of this meeting will be to agree the location and design of any tree protection barriers, as well as to agree the need for / frequency of any on-going arboricultural clerk-of-works visits.

Construction Exclusion Zone

- 10.2. All trees to be retained in proximity to construction work will require tree protection to mitigate for potential above and below ground impacts and ensure these trees are retained successfully. The factors which most commonly result in below ground damage affecting oxygen diffusion (and therefore must be avoided) include:
- Compaction of the ground;
 - Any change in soil levels (even if temporary), including ground excavation and soil stripping;
 - Covering the root zone with impervious surfaces;
 - Changes in the water table level or ground saturation; and
 - Damage by the direct toxicity of phytotoxic materials, dust and runoff.
- 10.3. A **Construction Exclusion Zone (CEZ)** will be established around these trees where no unauthorised access or construction operations (including Site compounds / facilities / storage of materials) are permitted to protect the ground from compaction or excavation and canopies from physical damage. This will be secured by means of temporary protective fencing with weatherproof signage.
- 10.4. Following the principles set out in section 6.2.2 of BS5837, these barriers should be “*fit for the purpose of excluding construction activity and appropriate to the degree and proximity of the work taking place around the retained trees*”. In this instance, it is proposed that the CEZ will be secured using 2m tall, welded mesh panels on rubber or concrete feet. The fence panels will be joined together using a minimum of two anti-tamper couplers, installed so that they can only be removed from inside the fence. The distance between the fence couplers will be at least 1m and should be uniform throughout the fence. The panels will be supported on the tree side by stabilizer struts, which will be attached to a base plate secured with ground pins. An example of this fencing is contained in **Appendix D**.
- 10.5. All weather notices should be secured to the barrier, examples of which are contained in **Appendix E**.

Replacement of Existing Hard Surfaces.

- 10.6. It will be necessary to replace some of the existing hard surfaces where they are within the RPAs of trees T3, T4 and T5. To ensure this is done in such a way that the trees are not damaged the following precautions will be followed.
- Hard surfaces should be retained in-situ for as long as possible during works to act as ground protection;
 - Within the RPAs, the existing wearing courses will be removed using hand tools or pedestrian operated breakers only;
 - If the sub-base needs to be removed within the RPAs, this will again be removed using hand tools and pedestrian operated plant only. There is the potential for roots to be present in the sub-base and care will be taken to retain any root above 25mm in diameter. Care will also be taken to avoid disturbing the soil below the sub-base.
 - The existing surfaces and sub-bases will be removed in a rolling operation working backwards through the RPAs with all operatives and equipment working from the existing surfaces;
 - The new surfaces will ideally utilise the existing sub-base. Where new sub-bases are required, they will not extend deeper than the depth of the existing sub-base;
 - The new surfaces will be constructed with a porous finish to allow for moisture and air movement into the area occupied by the tree roots;
 - The new surfaces will be installed in a forward rolling direction to ensure that all plant and operatives work from the new surfaces.

Utility Connections

- 10.7. At the time of writing this report, the locations of any proposed service runs are not known. If for any reason services are required to be located within the RPAs of the retained trees, the following precautions will be followed:
- Mechanical trenching will not be permitted within the RPA.
 - To limit the extent of any excavations, and where possible, any services will be located within shared ducts.
 - The preference will be to install the services using trenchless technology, but where this isn't viable, the trenches will be dug using hand tools and under the supervision of the retained arboricultural consultant. Roots over 25mm in diameter will be retained. Where this is not possible, they will only be severed if approved by the retained arboricultural consultant.
 - Any trenches within RPAs will be backfilled using the native material or another inert granular material.

Permanent Hard Surfacing

- 10.8. New hard surfacing is proposed to be installed within existing areas of soft earth within the RPA of trees T1, T7 and T8.

- 10.9. It is proposed that the new surfacing be constructed using a no-dig methodology. The proposed hard surfacing to be used as footpaths will be based on a cellular confinement system (Cellweb or similar) to prevent soil compaction (example in **Appendix F**). The Cellweb should be of a suitable thickness to support pedestrian weight (75mm), filled with washed aggregate and topped with a permeable hardstanding in order to protect the existing soil strata from overloading while maintaining gaseous and aqueous exchange capacity.
- 10.10. The installation of Cellweb will be undertaken in a forward rolling direction to ensure that all plant and operatives work only from the new surfaces.

DRAWINGS

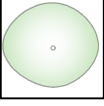
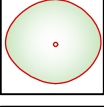
Drawing 1: Tree Survey Plan (Drawing ref. 19442-100-WIE-ZZ-XX-DR-V-77-001)



This drawing should not be scaled. Dimensions to be verified on site.
Any discrepancies should be referred to the Engineer prior to work being put in hand.

This drawing is the property of Waterman Infrastructure & Environment Limited, and the drawing is issued on the condition that it is not copied reproduced, retained or disclosed to any unauthorised person, either wholly or in part without the consent in writing of Waterman Infrastructure & Environment Limited
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GENERAL NOTES

-  CATEGORY GRADE A
Trees of high quality
-  CATEGORY GRADE B
Trees of moderate quality
-  CATEGORY GRADE C
Trees of low quality
-  CATEGORY GRADE U
Trees unsuitable for retention
-  ROOT PROTECTION AREAS (RPA)

NOTES:

ROOT PROTECTION AREA
Root Protection Areas are calculated in accordance with BS5837: 2012. The precise morphology and disposition of roots may not be fully reflected by these areas, particularly where there are hard standings, however they provide a good indication of potential root constraint.

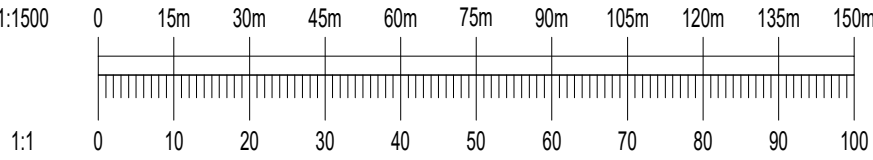
P01	S0	26.10.22	PLANNING ISSUE	DC	RH
Status	Date	Description		By	CHK

Amendments	
Project	BURGESS HILL
Title	ARBORICULTURAL CONSTRAINTS PLAN
Client	-

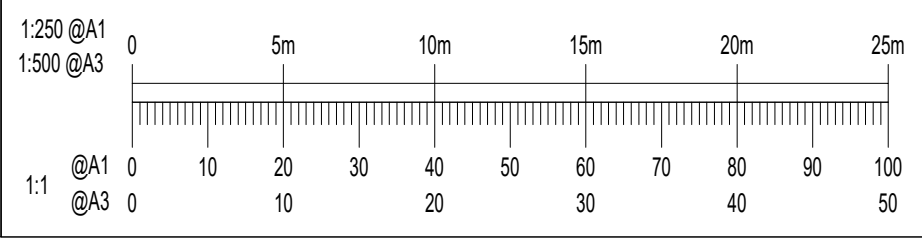
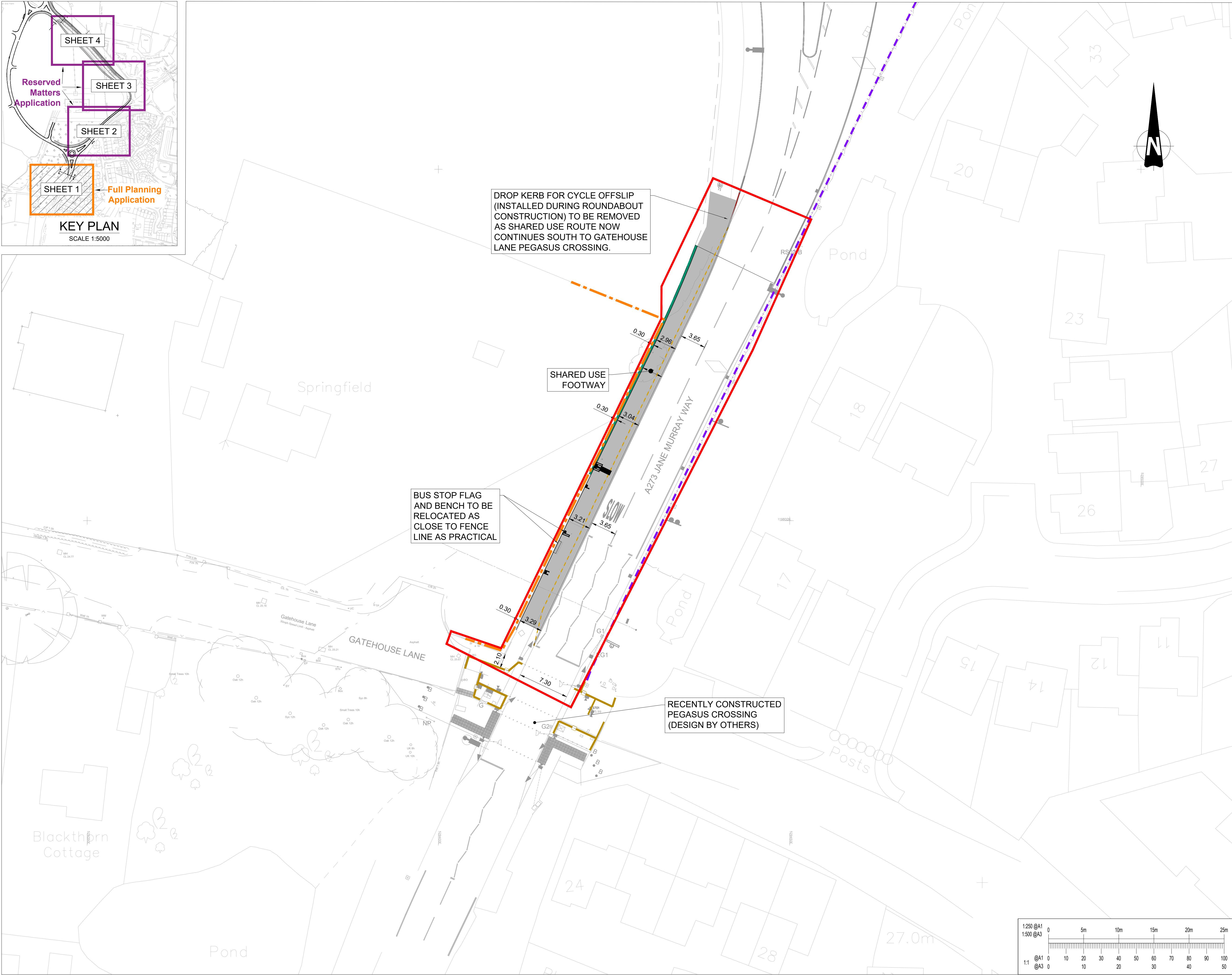
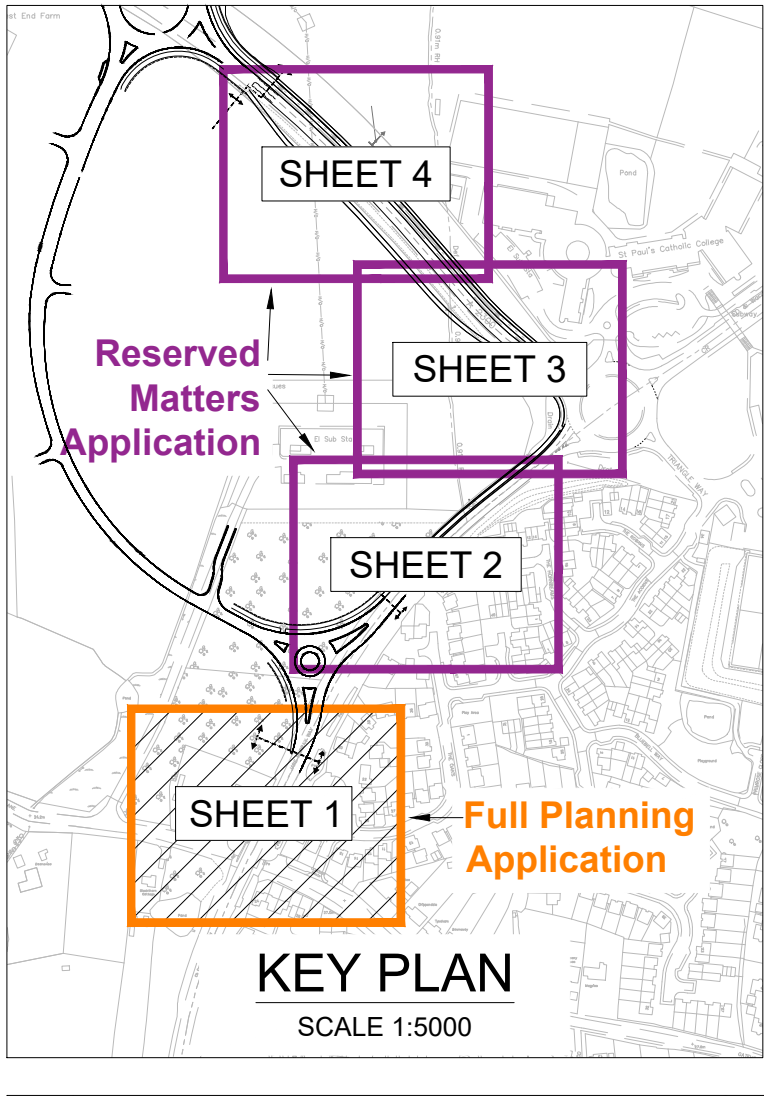


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Status				PLANNING	
Designed By	FG	Director	RH	Waterman Ref	WIE19442-100
Drawn By	DC	Date	OCTOBER 2022	Scales @ A2	1:1500
Project - Originator - Volume - Level - Type - Role - Number					Revision
19442-100-WIE-ZZ-XX-DR-V-77-001					P01



Drawing 2: General Arrangement (Drawing ref. 19442-WIE-ZZ-XX-DR-C-900101 to 900104)



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GENERAL NOTES

Key:

- PHASE 3 CONSTRUCTION WORKS BOUNDARY
- PROPOSED GRASS VERGE
- FOOTWAY - ASPHALT SURFACING (AC6 ASPHALT CONCRETE WITH 6mm AGGREGATE)
- FOOTWAY SHARED USE - ASPHALT SURFACING (AC6 ASPHALT CONCRETE WITH 6mm AGGREGATE)
- CYCLE ROUTE - FINISHED IN GREEN SURFACING
- BUFF COLOURED BLISTER TACTILE PAVING
- GREY COLOURED TRAMLINE/LADDER STYLE TACTILE PAVING.
- FILTER DRAIN
- EXISTING WATERCOURSE/DRAINAGE DITCH
- PROPOSED WATERCOURSE/DRAINAGE DITCH
- PROPOSED LAYOUT (KERBS & EDGINGS)
- EXISTING EDGE OF CARRIAGEWAY
- EXISTING PUBLIC FOOTPATH RIGHT OF WAY (NO.98CR) RETAINED
- RECENTLY DIVERTED PUBLIC FOOTPATH RIGHT OF WAY (NO.14HU, LEGAL ORDER COMPLETE).
- EXISTING VEHICLE RESTRAINT SYSTEMS
- EXISTING TIMBER PANEL FENCE
- EXISTING TIMBER POST RAIL FENCE
- PROPOSED TIMBER POST RAIL FENCE
- EXISTING LIGHTING COLUMNS RETAINED
- PROPOSED LIGHTING COLUMN LOCATION (PRELIMINARY LAYOUT)
- PROPOSED ROAD SIGN (VARIOUS SIZES)
- EXISTING ROAD SIGN RETAINED

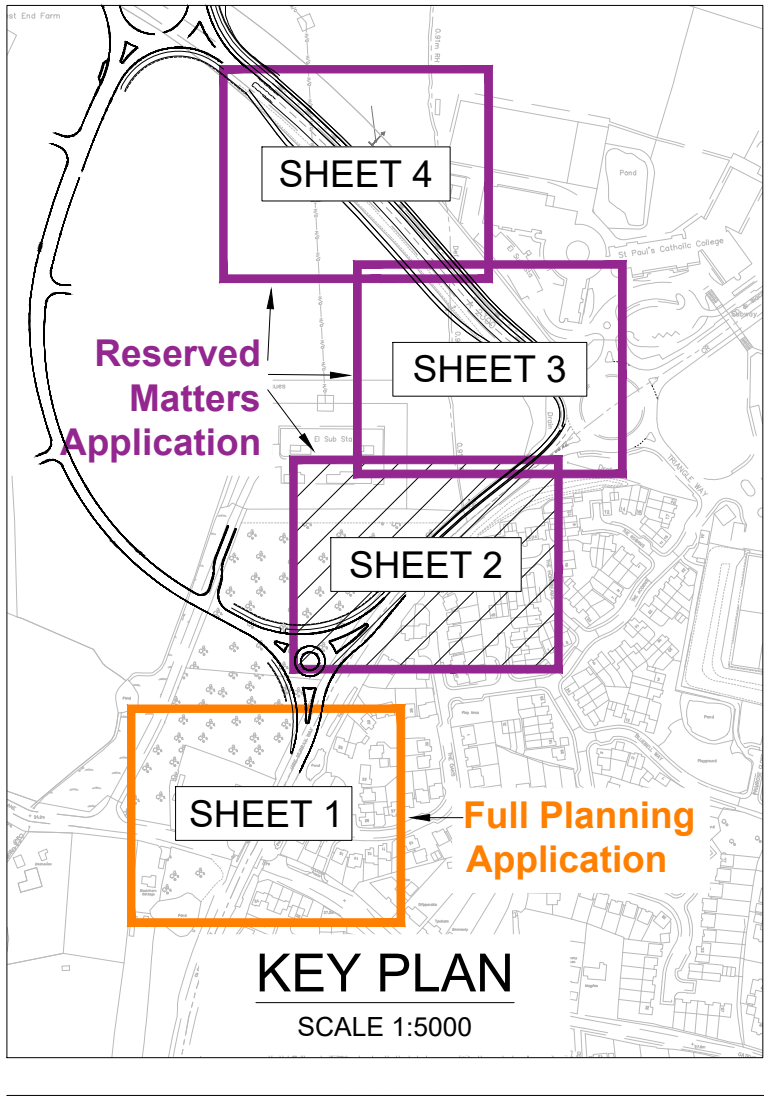
P06	02.12.24	FOOTWAY AND FOOTWAY SHARED USE KEY ITEM DESCRIPTIONS AMENDED	JTR
P05	09.10.24	DIVERTED FOOTPATH KEY AMENDED, FENCES AND VRS SHOWN	MK
P04	19.08.24	FOLLOWING DISCUSSION WITH WSCC: KERB LINE OF SHARED USE PATH NORTH OF GATEHOUSE LANE MOVED FURTHER INTO CARRIAGEWAY, REMOVING THE EXISTING HARDSTRIP ENTIRELY, TO MAXIMISE PAVED WIDTH OF PATH. (PREVIOUSLY A 0.5M HARDSTRIP WAS RETAINED TO ACT AS SEPARATION BETWEEN CYCLISTS AND LIVE TRAFFIC)	SP
Rev	Date	Description	By

Amendments
Project
Title
GENERAL ARRANGEMENT SHEET 1



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Status
FOR PLANNING
Designed By
SP
Checked By
SP
Waterman Ref
WIE19442
Drawn By
JS
Date
AUG. 22
Scales @ A1
1:250
Project - Originator - Volume - Level - Type - Role - Number
19442-WIE-ZZ-XX-DR-C-900101
P06



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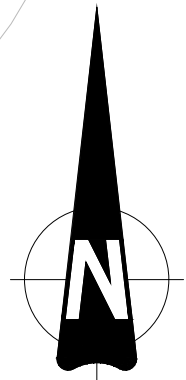
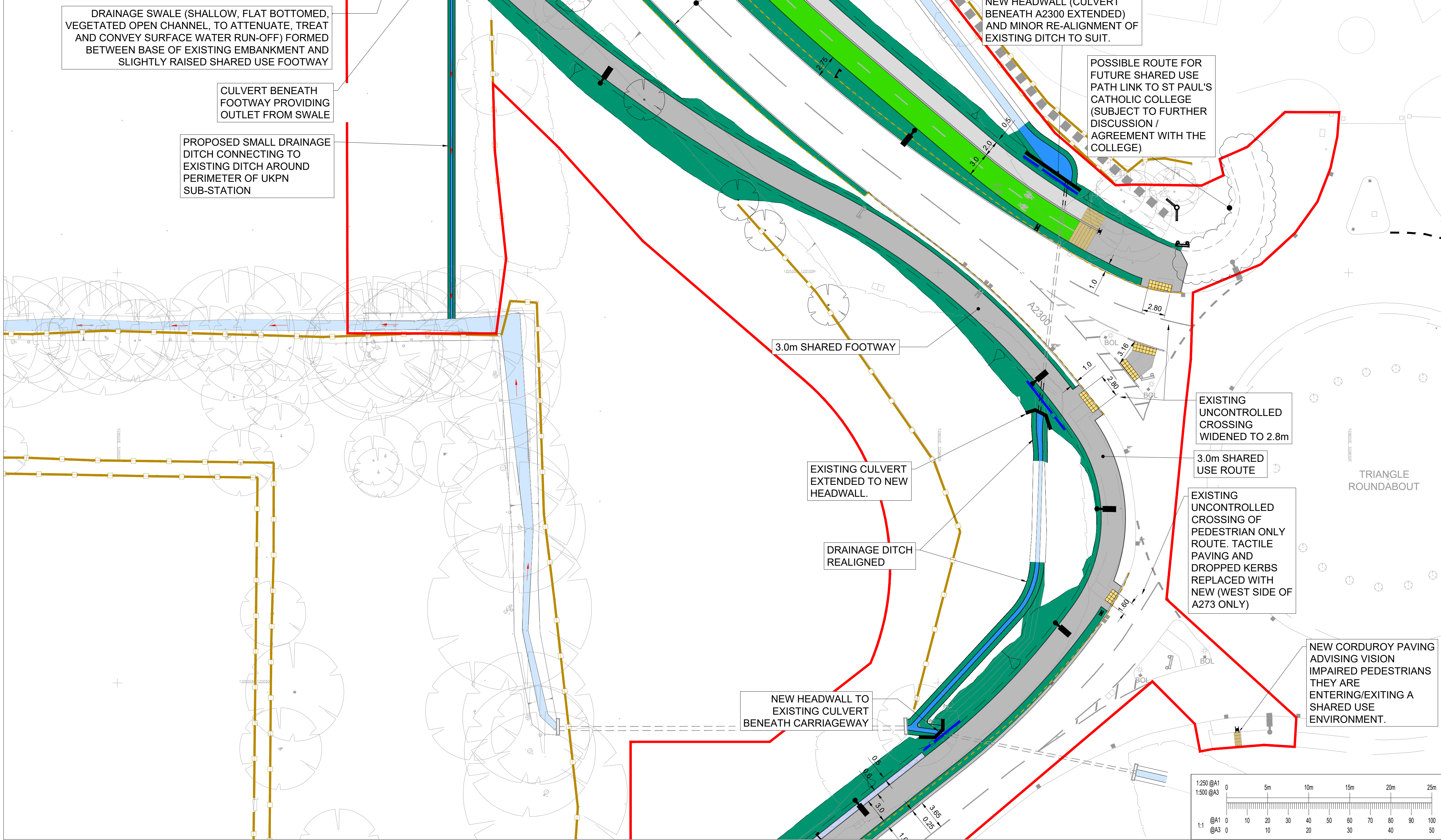
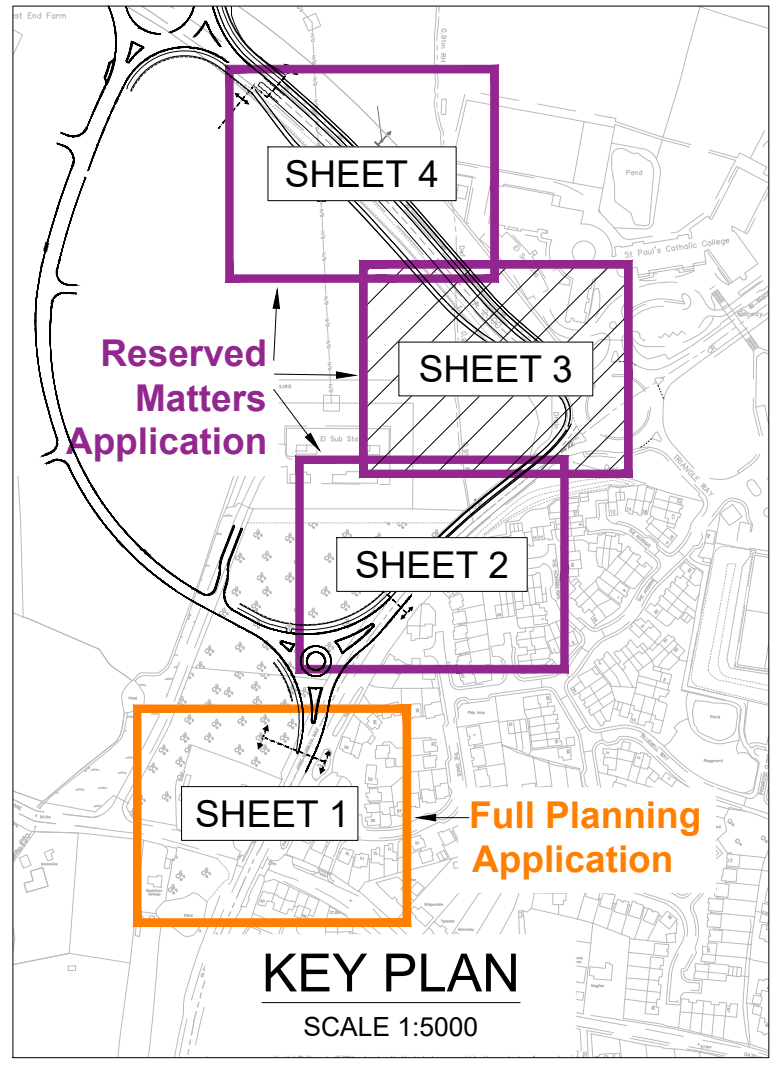
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GENERAL NOTES

Key:

- PHASE 3 CONSTRUCTION WORKS BOUNDARY
- PROPOSED GRASS VERGE
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- CYCLE ROUTE - FINISHED IN GREEN SURFACING
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- EXISTING TIMBER PANEL FENCE
- EXISTING TIMBER POST RAIL FENCE
- PROPOSED TIMBER POST RAIL FENCE
- EXISTING LIGHTING COLUMNS RETAINED
- PROPOSED LIGHTING COLUMN LOCATION (PRELIMINARY LAYOUT)
- PROPOSED ROAD SIGN (VARIOUS SIZES)
- EXISTING ROAD SIGN RETAINED

P06	26.11.24	ADJUSTMENT TO RED LINE BOUNDARY & FOOTWAY AND FOOTWAY SHARED USE KEY ITEM DESCRIPTIONS AMENDED	JTR
P05	04.10.24	ANNOTATION ADJUSTED, UNKNOWN HATCH REMOVED FROM CARRIAGEWAY, DIVERTED FOOTPATH KEY AMENDED, FENCES AND VRS SHOWN	MK
P04	30.09.24	ADS SIGN LAYOUT AMENDED, LIGHTING LAYOUT UPDATED	SP
P03	17.07.24	MINOR UPDATES, PRIMARILY TO DRAWING PRESENTATION, FOLLOWING JCE DESIGN OUTPUT REVIEW REVIEW 03	MK
P02	26.06.24	DRAWING UPDATED TO SHOW TIE-IN INTO NEWLY CONSTRUCTED PEGASUS CROSSING AT GATE HOUSE LANE AND VERGE WIDTH REDUCED TO 1m AT KEY LOCATIONS	UF
Rev	Date	Description	By
Amendments			
Project			
Title			
GENERAL ARRANGEMENT SHEET 2			
Client			
			
			
Crown House 2 - 8 Gloucester Road Redhill Surrey RH1 1FH 1 01342 893800 1 03333 444 501 mail@watermangroup.com www.watermangroup.com			
Status			
FOR PLANNING			
Designed By		Checked By	Waterman Ref
SP		SP	WIE19442
Drawn By		Date	Scales @ A1
JS		AUG. 22	1:250
Project - Originator - Volume - Level - Type - Role - Number			Revision
19442-WIE-ZZ-XX-DR-C-900102			P06



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GENERAL NOTES

- Key:**
- PHASE 3 CONSTRUCTION WORKS BOUNDARY
 - PROPOSED GRASS VERGE
 - FOOTWAY - ASPHALT SURFACING (AC6 ASPHALT CONCRETE WITH 6mm AGGREGATE)
 - FOOTWAY SHARED USE - ASPHALT SURFACING (AC6 ASPHALT CONCRETE WITH 6mm AGGREGATE)
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 - EXISTING TIMBER POST RAIL FENCE
 - PROPOSED TIMBER POST RAIL FENCE
 - EXISTING LIGHTING COLUMNS RETAINED
 - PROPOSED LIGHTING COLUMN LOCATION (PRELIMINARY LAYOUT)
 - PROPOSED ROAD SIGN (VARIOUS SIZES)
 - EXISTING ROAD SIGN RETAINED

P06	26.11.24	ADJUSTMENT TO RED LINE BOUNDARY & FOOTWAY AND FOOTWAY SHARED USE KEY ITEM DESCRIPTIONS AMENDED	MK
P05	09.10.24	DIVERTED FOOTPATH KEY AMENDED, FENCES AND VRS SHOWN	MK
P04	29.07.24	CYCLE TRACK SPLIT EITHER SIDE OF SIGN POST LOCATIONS. FOOTPATH (PROW) TIE-IN AT TRIANGLE ROUNDABOUT ADDED. ADDITIONAL FOOTPATH DIRECTION SIGNS ADDED.	SP
P03	18.07.24	MINOR UPDATES, PRIMARILY TO DRAWING PRESENTATION, FOLLOWING JCE DESIGN OUTPUT REVIEW 03	MK
Rev	Date	Description	By

Amendments

Project

WBLR Phase 3

Title

GENERAL ARRANGEMENT SHEET 3

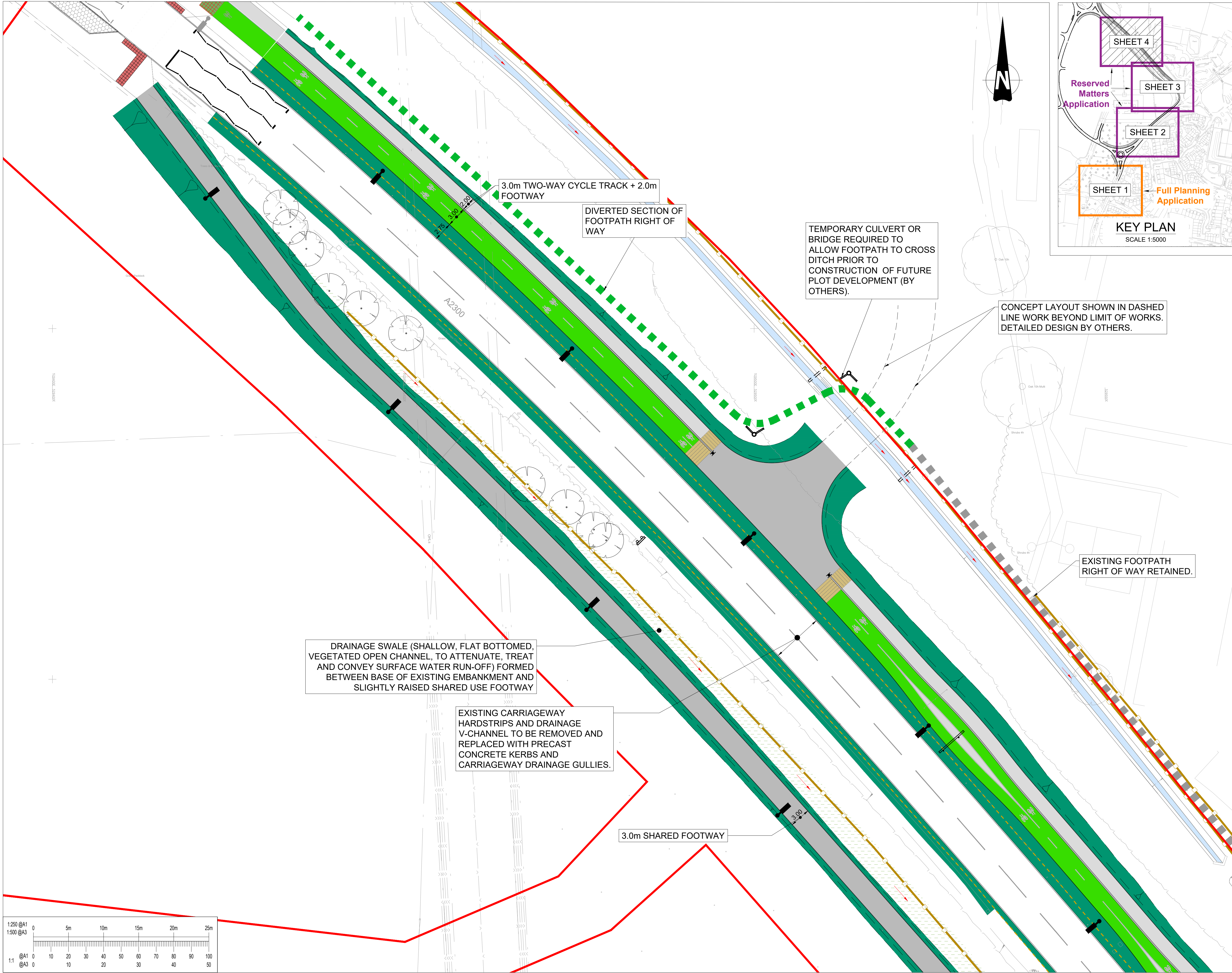
Client

Homes England Jackson

waterman

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FOR PLANNING			
Designed By	SP	Checked By	UF
Drawn By	JS	Date	AUG. 22
Project - Originator - Volume - Level - Type - Role - Number			Revision
19442-WIE-ZZ-XX-DR-C-900103			P06



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GENERAL NOTES

Key:

- PHASE 3 CONSTRUCTION WORKS BOUNDARY
- PROPOSED GRASS VERGE
- FOOTWAY - ASPHALT SURFACING (AC6 ASPHALT CONCRETE WITH 6mm AGGREGATE)
- FOOTWAY SHARED USE - ASPHALT SURFACING (AC6 ASPHALT CONCRETE WITH 6mm AGGREGATE)
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- EXISTING VEHICLE RESTRAINT SYSTEMS
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- EXISTING TIMBER POST RAIL FENCE
- PROPOSED TIMBER POST RAIL FENCE
- EXISTING LIGHTING COLUMNS RETAINED
- PROPOSED LIGHTING COLUMN LOCATION (PRELIMINARY LAYOUT)
- PROPOSED ROAD SIGN (VARIOUS SIZES)
- EXISTING ROAD SIGN RETAINED

P06	02.12.24	FOOTWAY AND FOOTWAY SHARED USE KEY ITEM DESCRIPTIONS AMENDED	JTR
P05	09.10.24	DIVERTED FOOTPATH KEY AMENDED, FENCES AND VRS SHOWN	MK
P04	29.07.24	CYCLE TRACK SPLIT EITHER SIDE OF SIGN POST LOCATIONS. ADDITIONAL FOOTPATH DIRECTION SIGNS ADDED.	SP
Rev	Date	Description	By

Amendments

Project

WBLR Phase 3

Title

GENERAL ARRANGEMENT SHEET 4

Client

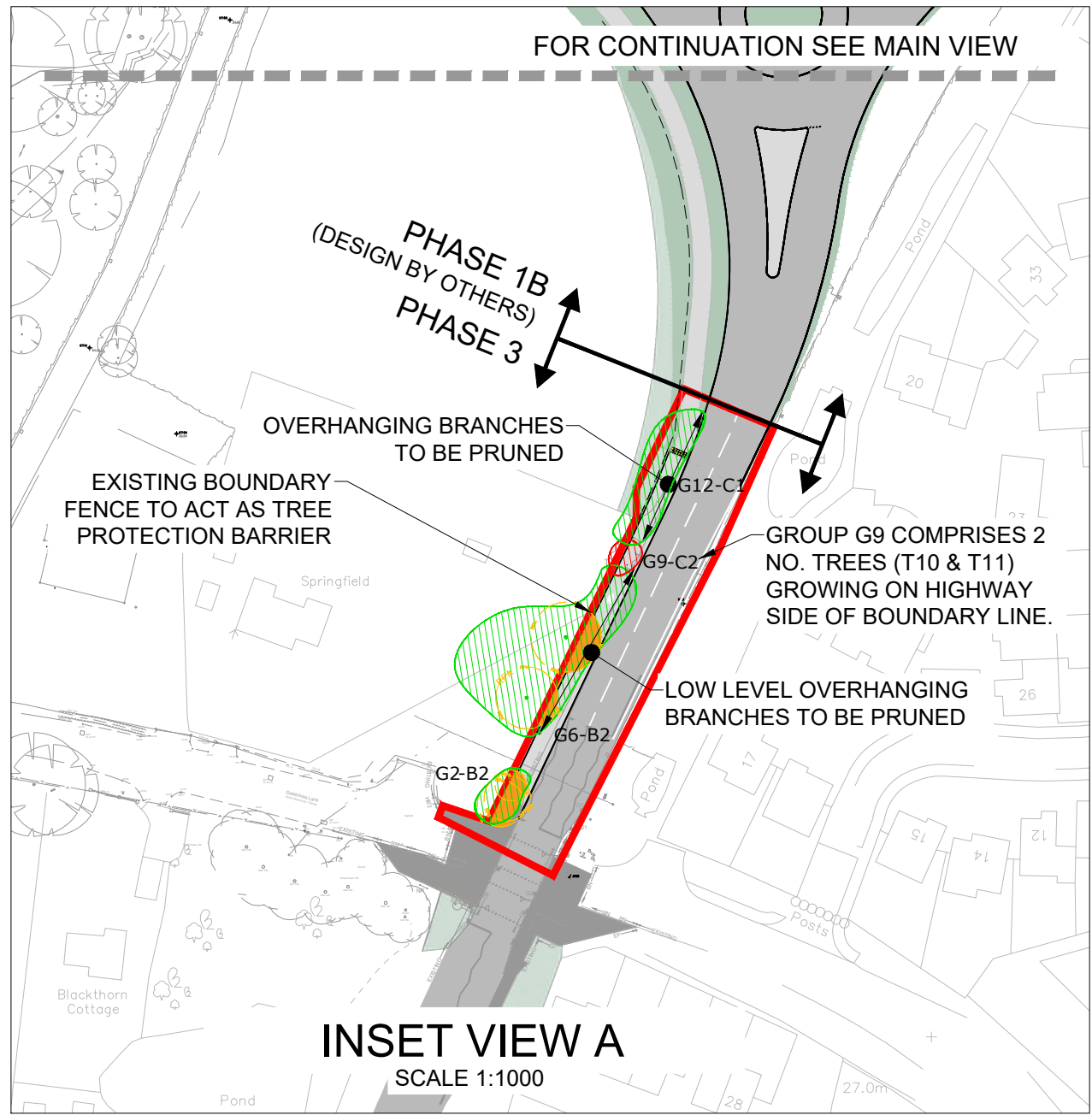
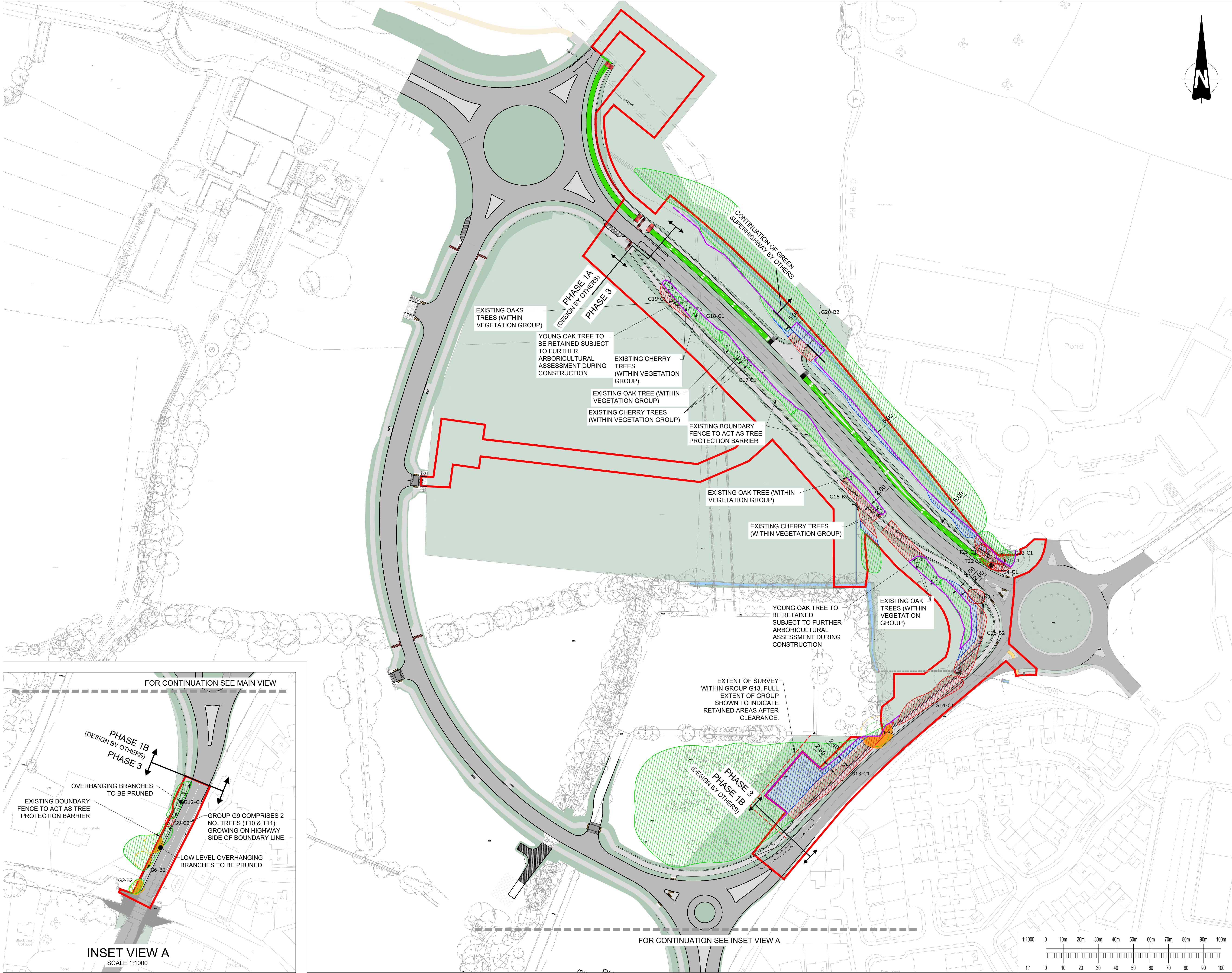
Homes England Jackson

waterman

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FOR PLANNING			
Designed By	SP	Checked By	SP
Drawn By	JS	Date	AUG. 22
Project	Originator	Volume	Level
19442-WIE-ZZ-XX-DR-C-900104			
Revision			P06

Drawing 3: Tree Removal and Protection Plan (Drawing ref. 19442-100-WIE-ZZ-XX-DR-V-77-002)



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GENERAL NOTES

- KEY:**
- PHASE 3 CONSTRUCTION WORKS BOUNDARY
 - TREES, GROUPS & HEDGES TO BE RETAINED
 - TREES, GROUPS & HEDGES TO BE REMOVED
 - ADDITIONAL TREES, GROUPS & HEDGES REMOVAL TO CREATE CONTRACTOR ACCESS
 - PRECAUTIONARY CONSTRUCTION (THE PROPOSED PAVEMENTS AND ASSOCIATED WORKS ARE TO BE DESIGNED TO MINIMISE EXCAVATION AND CONSTRUCTION WORKS ARE TO BE UNDERTAKEN IN ACCORDANCE WITH THE ARBORICULTURAL IMPACT ASSESSMENT & METHOD STATEMENT)
 - TREE PROTECTION FENCING
 - ROOT PROTECTION AREAS (RPA)

NOTES:

ROOT PROTECTION AREA
Root Protection Areas are calculated in accordance with BS5837: 2012. The precise morphology and disposition of roots may not be fully reflected by these areas, particularly where there are hard standings, however they provide a good indication of potential root constraint.

P05	08.10.24	PRECAUTIONARY CONSTRUCTION NOTE UPDATED AND ADJUSTMENT RED LINE BOUNDARY	MK	SP
P04	20.04.24	UPDATED WITH AGREED ALTERNATIVE LAYOUT OPTION WITH 1.0m WIDE VERGE	MK	SP
P03	08.04.24	ADDITIONAL AREA OF TREE CLEARANCE IS AT SOUTHER SIDE OF A2300 AND ALTERNATIVE LAYOUT OPTION ADDED BASED ON 1.0m WIDE VERGE.	UF	SP
P02	08.03.24	TREE CLEARANCE PLAN UPDATED TO SHOW THE LOWER LEVEL SHARED FOOTWAY ON A2300.	UF	RH
P01	04.01.23	PLANNING ISSUE	DC	RH
Rev	Date	Description	By	

Amendments

Project

BURGESS HILL

Title

TREE REMOVAL AND PROTECTION PLAN



Crown House 2 - 8 Gloucester Road Redhill Surrey RH1 1FH
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Status		PLANNING									
Designed By		FG		Checked By		RH		Waterman Ref		WIE19442-100	
Drawn By		DC		Date		JANUARY 2023		Scales @ A1		1:1000	
Project - Originator - Volume - Level - Type - Role - Number										Revision	
19442-100-WIE-ZZ-XX-DR-V-77-002										P05	

APPENDICES

A. Relevant Planning Policy and Legislation

National Planning Policy

The National Planning Policy Framework (NPPF 2023)^[1] sets out the government's planning policies for England and how these are expected to be applied. Under the NPPF, Local Planning Authorities (LPAs, including borough, district or unitary councils or nation park authorities), have a statutory duty to consider the protection and planting of trees when granting planning permission for a proposed development. The potential effect of a development on trees, whether statutorily protected or not (see below), is a material consideration within a planning application. The following paragraphs are of relevance to trees;

Paragraph 136: Trees make an important contribution to the character and quality of urban environments and can also help mitigate and adapt to climate change. Planning policies and decisions should ensure that new streets are tree-lined, that opportunities are taken to incorporate trees elsewhere in developments (such as parks and community orchards), that appropriate measures are in place to secure the long-term maintenance of newly-planted trees, and that existing trees are retained wherever possible. Applicants and local planning authorities should work with highways officers and tree officers to ensure that the right trees are planted in the right places, and solutions are found that are compatible with highways standards and the needs of different users.

Paragraph 186: When determining planning applications, local planning authorities should apply the following principles;

- (a) If significant harm resulting from a development cannot be avoided (through locating on an alternative Site with less harmful impacts), adequately mitigated, or, as a last resort, compensated for, then planning permission should be refused.*
- (b) development resulting in the loss or deterioration of irreplaceable habitats (such as ancient woodland and ancient or veteran trees) should be refused, unless there are wholly exceptional reasons and a suitable compensation strategy exists.*

Local Planning Policy

Mid Sussex District Council's District Plan 2014 – 2031

The Mid Sussex District Plan sets out a vision for how Mid Sussex wants to evolve and a delivery strategy for how that will be achieved. It supports the National Planning Policy Framework's 'presumption in favour of sustainable development'. As such, it sets out broad guidance on the distribution and quality of development in the form of 'higher level' strategic policies. It also provides the framework for all subsequent planning documents, including Neighbourhood Plans. The District Plan covers the period up to 2031 and will replace the majority of the Mid Sussex Local Plan adopted in 2004.

DP37: Trees, Woodland and Hedgerows

Strategic Objectives: 3) To protect valued landscapes for their visual, historical and biodiversity qualities; 4) To protect valued characteristics of the built environment for their historical and visual qualities; and 5) To create and maintain easily accessible green infrastructure, green corridors and spaces around and within the towns and villages to act as wildlife corridors, sustainable transport links and leisure and recreational routes.

^[1] <https://www.gov.uk/guidance/national-planning-policy-framework>

Evidence Base: Green Infrastructure mapping; Mid Sussex Ancient Woodland Survey, Tree and Woodland Management Guidelines, Tree Preservation Order records.

The District Council will support the protection and enhancement of trees, woodland and hedgerows, and encourage new planting. In particular, ancient woodland and aged or veteran trees will be protected.

Development that will damage or lead to the loss of trees, woodland or hedgerows that contribute, either individually or as part of a group, to the visual amenity value or character of an area, and/ or that have landscape, historic or wildlife importance, will not normally be permitted.

Proposals for new trees, woodland and hedgerows should be of suitable species, usually native, and where required for visual, noise or light screening purposes, trees, woodland and hedgerows should be of a size and species that will achieve this purpose.

Trees, woodland and hedgerows will be protected and enhanced by ensuring development:

- incorporates existing important trees, woodland and hedgerows into the design of new development and its landscape scheme; and
- prevents damage to root systems and takes account of expected future growth; and
- where possible, incorporates retained trees, woodland and hedgerows within public open space rather than private space to safeguard their long-term management; and
- has appropriate protection measures throughout the development process; and
- takes opportunities to plant new trees, woodland and hedgerows within the new development to enhance on-site green infrastructure and increase resilience to the effects of climate change; and
- does not sever ecological corridors created by these assets. Proposals for works to trees will be considered taking into account:
 - the condition and health of the trees; and
 - the contribution of the trees to the character and visual amenity of the local area; and
 - the amenity and nature conservation value of the trees; and
 - the extent and impact of the works; and
 - any replanting proposals.

The felling of protected trees will only be permitted if there is no appropriate alternative. Where a protected tree or group of trees is felled, a replacement tree or group of trees, on a minimum of a 1:1 basis and of an appropriate size and type, will normally be required. The replanting should take place as close to the felled tree or trees as possible having regard to the proximity of adjacent properties.

Development should be positioned as far as possible from ancient woodland with a minimum buffer of 15 metres maintained between ancient woodland and the development boundary.

Tree Preservation Orders (TPOs)

TPOs are administered by Local Planning Authorities (LPA) and are made to protect trees which bring significant amenity benefit to the local area. All types of tree, tree species and sizes

can be protected and a TPO can protect a single tree, tree groups, all trees within a defined area (Area TPO) or a woodland (Woodland TPO).

A TPO is a written order which makes it a criminal offence without the Authority's permission (liable to an unlimited fine) to;

- Cut down, top, lop, uproot, wilfully damage or wilfully destroy a tree protected by that order; or
 - Cause or permit such actions.

In the Secretary of State's view, cutting roots is also a prohibited activity which requires the authority's consent. Applications to carry out works to trees covered by TPOs need to be submitted to the LPA for approval, via forms which can be found on the Planning Portal, however LPA consent is not required for carrying out work on trees subject to a TPO so far as such work is necessary to implement a full planning permission. Where full planning permission has been granted showing the loss of (or work to) TPO trees is required to implement the permitted scheme, the Order is overwritten.

Conservation Areas (CA)

Normal TPO procedures apply if a tree within a CA is protected by a TPO. If a tree within a CA is not protected by a TPO and is above 75mm in trunk diameter when measured at 1.5m height, written notice must be given to the LPA for any proposed work, describing what work is proposed, at least six weeks before the proposed work date. This is called a 'section 211 notice' which gives the LPA an opportunity to consider whether the tree should be subject to a TPO.

Felling Licences

To fell trees, a felling licence from the Forestry Commission is required. It is an offence to fell trees, including in advance of a planning application, without a licence if an exemption does not apply. Exemptions include;

- locations (gardens, orchards, churchyards or designated open spaces);
- type of tree work (lopping, topping, pruning and pollarding);
- volume and diameter of trees to be felled (less than 5 cubic meters in one calendar quarter, trees of a girth at 1.3m height of less than 80mm, 100mm if thinning and 150mm if coppicing);
 - other permissions (such as having planning permission granted); and
- statutory/legal requirements (there is a real or immediate threat of danger or abatement of nuisance, to prevent the spread of a pest/disease, to comply with an Act of Parliament or undertake your duties as a statutory service provider (gas, water, electric)).

B. Cascade Chart for Tree Quality Assessment (extract from BS5837)

[Schedule Chart for Tree Quality Assessment \(Updated from 2009\)](#)

TREES FOR REMOVAL				
Category and Definition	Criteria			Identification on Drawing / Within Tree Schedule
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 trees (i.e. where, for whatever reason, the loss of companion shelter cannot be mitigated by pruning); - Trees that are dead or are showing signs of significant, immediate, and irreversible overall decline; and - Trees infected with pathogens of significance to the health and/or safety of other trees nearby, or very low quality trees suppressing adjacent trees of better quality. NOTE: Category U trees can have existing or potential conservation value which it might be desirable to preserve.			DARK RED
TREES TO BE CONSIDERED FOR RETENTION				
Category and Definition	Criteria - Subcategories			Identification on Drawing / Within Tree Schedule
	1 Mainly Arboricultural Values	2 Mainly Landscape Values	3 Mainly Cultural Values, including Conservation	
Category A Trees of high quality with an estimated remaining life expectancy minimum of at least 40 years	Trees that are particularly good examples of their species, especially if rare or unusual, or essential components of groups, or of formal or semi-formal arboricultural features (e.g. the dominant and/or principal trees within an avenue)	Trees, groups or woodlands of particular visual importance as arboricultural and/or landscape features	Trees, groups or woodlands of significant conservation, historical, commemorative or other value (e.g. veteran trees or wood-pasture)	LIGHT GREEN
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 as groups or woodlands, such that they attract a higher collective rating than they might as individuals; or trees occurring as collectives but situated so as to make little visual contribution to the wider locality	Trees with material conservation or other cultural value	MID BLUE
Category C Trees of low quality with an estimated remaining life expectancy of at least 10 years, or young trees with a stem diameter below 150mm	Unremarkable trees of very limited merit or such impaired condition that they do not qualify in higher categories	Trees present in groups or woodlands, but without this conferring on them significantly greater collective landscape value; and/or trees offering low or only temporary/transient landscape benefits	Trees with no material conservation or other cultural value	GREY

C. Schedule of Existing Trees

No.	Species	Height	Trunk Dia.	Radial Crown Spread	Crown Clearance	Height to 1st Branch	Life Stage	Physiology	Structure	Est. Years	Comments	Preliminary Management Advice	Category	RPA Radius	RPA m2
T1	Common Oak (<i>Quercus robur</i>)	9m	350mm 450mm 280mm 400mm	N6m E7m S8m W6m	5m	2m S	EM	Good	Good	40+	UKPN land; multi-stemmed from base; minor deadwood.	No immediate works required.	B (2)	9.0m	254.9m ²
G2	Leyland cypress (<i>X Cupressocyparis leylandii</i>)	9m	Avg. 300mm est	N3m E5m S3m W4m	3m	2m E	EM	Good	Fair	20+	Of some boundary screening value; off-site tree group.	No immediate works required.	B (2)	N/A	N/A
T3 part of G2	N/A		300mm	N/A			EM	Good	N/A			No immediate works required.	B (2)	3.6m	40.7m ²
T4 part of G2	N/A		300mm	N/A			EM	Good	N/A			No immediate works required.	B (2)	3.6m	40.7m ²
T5 part of G2	N/A		200mm	N/A			EM	Good	N/A			No immediate works required.	B (2)	2.4m	18.1m ²
G6	Ash (<i>Fraxinus excelsior</i>), Common Hawthorn (<i>Crataegus monogyna</i>) and Blackthorn (<i>Prunus spinosa</i>)	8m	N/A	4m	2m	N/A	M	Good	Good	20+	Of moderate boundary screening value; behind boundary fence. Branches overhanging.	No immediate works required.	B (2)	N/A	N/A

No.	Species	Height	Trunk Dia.	Radial Crown Spread	Crown Clearance	Height to 1st Branch	Life Stage	Physiology	Structure	Est. Years	Comments	Preliminary Management Advice	Category	RPA Radius	RPA m2
T7 part of G6	N/A		400mm est	N/A			M	Good	N/A			No immediate works required.	B (2)	4.8m	72.4m ²
T8 part of G6	N/A		450mm est	N/A			M	Good	N/A			No immediate works required.	B (2)	5.4m	91.6m ²
G9	Ash (<i>Fraxinus excelsior</i>)	10m	N/A	3m	1m	N/A	SM	Fair	Fair	10+	Self-seeded; rooted in road verge.	No immediate works required.	C (2)	N/A	N/A
T10 part of G9	N/A		130mm	N/A			SM	Good	N/A			No immediate works required.	C (2)	1.6m	7.6m ²
T11 part of G9	N/A		120mm	N/A			SM	Good	N/A			No immediate works required.	C (2)	1.4m	6.5m ²
G12	Common Hawthorn (<i>Crataegus monogyna</i>) and Blackthorn (<i>Prunus spinosa</i>)	4m	N/A	N/A	0m	N/A	EM	Good	Good	10+	Dense group on road verge.	No immediate works required.	C (1)	N/A	N/A

No.	Species	Height	Trunk Dia.	Radial Crown Spread	Crown Clearance	Height to 1st Branch	Life Stage	Physiology	Structure	Est. Years	Comments	Preliminary Management Advice	Category	RPA Radius	RPA m2
G13	Common Hawthorn (<i>Crataegus monogyna</i>), Blackthorn (<i>Prunus spinosa</i>), Common Oak (<i>Quercus robur</i>) and Crab apple (<i>Malus sp.</i>)	5m	N/A		0m	N/A	M	Good	Fair	10+	Dense group lining woodland edge.	No immediate works required.	C (1)	N/A	N/A
G14	Common Hawthorn (<i>Crataegus monogyna</i>), Blackthorn (<i>Prunus spinosa</i>) and Common Oak (<i>Quercus robur</i>)	5m	N/A		0m	N/A	EM	Good	Fair	10+	Dense group lining field edge; branches growing into the road in some places. Restricting road user view.	No immediate works required.	C (1)	N/A	N/A
G15	Goat willow (<i>Salix caprea</i>), Common Oak (<i>Quercus robur</i>), Ash (<i>Fraxinus excelsior</i>) and Sycamore (<i>Acer pseudoplatanus</i>)	9m	Avg 400mm est	N/A	1m	N/A	EM	Good	Fair	20+	Dense group on field boundary; thick bramble restricting access.	No immediate works required.	B (2)	N/A	N/A
G16	Goat willow (<i>Salix caprea</i>), Common Oak (<i>Quercus</i>)	8m	Avg 300mm est	N/A	0m	N/A	EM	Good	Fair	20+	Dense group on field boundary; of moderate	No immediate works required.	B (2)	N/A	N/A

No.	Species	Height	Trunk Dia.	Radial Crown Spread	Crown Clearance	Height to 1st Branch	Life Stage	Physiology	Structure	Est. Years	Comments	Preliminary Management Advice	Category	RPA Radius	RPA m2
	<i>robur</i>), Ash (<i>Fraxinus excelsior</i>), Sycamore (<i>Acer pseudoplatanus</i>), Field maple (<i>Acer campestre</i>) and Wild cherry (<i>Prunus avium</i>)										boundary screening value; off-site tree.				
G17	Goat willow (<i>Salix caprea</i>), Common Oak (<i>Quercus robur</i>), Ash (<i>Fraxinus excelsior</i>), Sycamore (<i>Acer pseudoplatanus</i>), Field maple (<i>Acer campestre</i>) and Wild cherry (<i>Prunus avium</i>)	6m	Avg 200mm est	N/A	0m	N/A	SM	Good	Fair	20+	Of mainly low-level screening value; some ash dieback present.	No immediate works required.	C (1)	N/A	N/A
G18	Common Hawthorn (<i>Crataegus monogyna</i>)	4m	Avg 150mm est	N/A	0m	N/A	EM	Good	Good	10+	Dense group lining field; dense vegetation limits survey; of some boundary screening value.	No immediate works required.	C (1)	N/A	N/A

No.	Species	Height	Trunk Dia.	Radial Crown Spread	Crown Clearance	Height to 1st Branch	Life Stage	Physiology	Structure	Est. Years	Comments	Preliminary Management Advice	Category	RPA Radius	RPA m2
G19	Ash (<i>Fraxinus excelsior</i>) and Wild cherry (<i>Prunus avium</i>)	6m	Avg 150mm est	N/A	0m	N/A	SM	Fair	Fair	10+	Dense group lining field; dense vegetation limits survey; low level boundary screening.	No immediate works required.	C (1)	N/A	N/A
G20	Common Oak (<i>Quercus robur</i>), Ash (<i>Fraxinus excelsior</i>), Common Hawthorn (<i>Crataegus monogyna</i>), Blackthorn (<i>Prunus spinosa</i>), Field maple (<i>Acer campestre</i>), Wild cherry (<i>Prunus avium</i>) and Goat willow (<i>Salix caprea</i>)	9m	Avg 400mm est	N/A	0m	N/A	EM	Good	Fair	20+	Dense group lining field.	No immediate works required.	B (2)	N/A	N/A

No.	Species	Height	Trunk Dia.	Radial Crown Spread	Crown Clearance	Height to 1st Branch	Life Stage	Physiology	Structure	Est. Years	Comments	Preliminary Management Advice	Category	RPA Radius	RPA m2
T21	Common Oak (<i>Quercus robur</i>)	8m	250mm	N2m E3m S4m W3m	3m	3.5m S	SM	Good	Good	10+	Drawn-up stem; suppressed.	No immediate works required.	C (1)	3.0m	28.3m ²

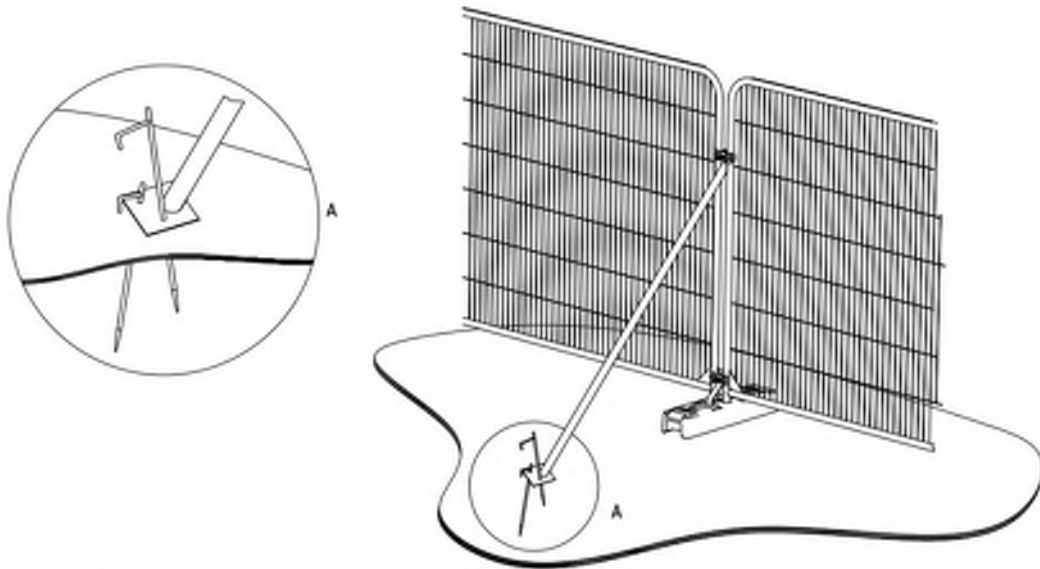
No.	Species	Height	Trunk Dia.	Radial Crown Spread	Crown Clearance	Height to 1st Branch	Life Stage	Physiology	Structure	Est. Years	Comments	Preliminary Management Advice	Category	RPA Radius	RPA m2
T22	Common Oak (<i>Quercus robur</i>)	9m	300mm	N1m E2m S3m W3m	3m	2m S	SM	Good	Fair	10+	Suppressed; dense vegetation limits survey.	No immediate works required.	C (1)	3.6m	40.7m ²
G23	Blackthorn (<i>Prunus spinosa</i>)	4m			0m		SM	Good	Good	10+	Dense group on roadside.	No immediate works required.	C (1)	N/A	N/A
T24	Wild cherry (<i>Prunus avium</i>)	9m	300mm	N2m E2m S2m W3m	3m	2m S	SM	Good	Fair	10+	Suppressed; dense vegetation limits survey.	No immediate works required.	C (1)	3.6m	40.7m ²

No.	Species	Height	Trunk Dia.	Radial Crown Spread	Crown Clearance	Height to 1st Branch	Life Stage	Physiology	Structure	Est. Years	Comments	Preliminary Management Advice	Category	RPA Radius	RPA m2
T25	Goat willow (<i>Salix caprea</i>)	6m	300mm est	N4m E4m S4m W4m	0m		EM	Good	Fair	10+	Dense vegetation limits survey.	No immediate works required.	C (1)	3.6m	40.7m ²
T26	Blackthorn (<i>Prunus spinosa</i>)	5m	5 stems @ 100mm est	N4m E5m SE5m S4m W5m NW5m	0m		EM	Good	Fair	10+	Dense vegetation limits survey.	No immediate works required.	C (1)	2.7m	22.6m ²

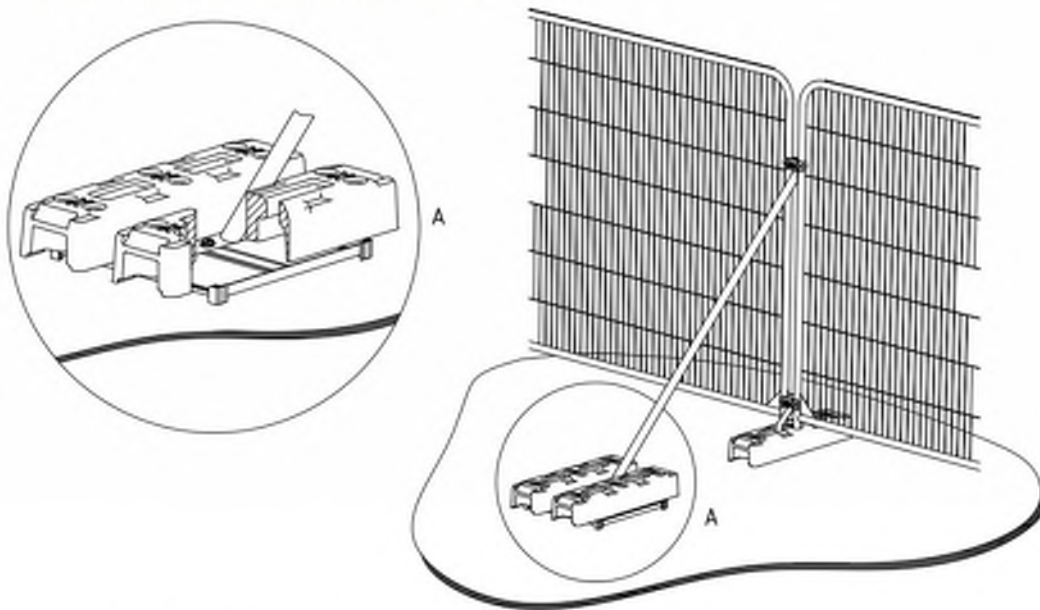
Notes

- Any management recommendations in this report subject to presence of nesting birds or protected species (e.g. Bats) checks.
- Any tree surgery recommendations contained within this report to be undertaken in accordance with BS3998(2010) 'Tree work – Recommendations' (BS3998)
- Fieldwork survey information provided within this table is subject to seasonal/access constraints.
- N/A - measurement not accessible/applicable.
- '*' - estimated position of tree (not indicated on topographical survey);
- '^' – average value based upon average of remaining measurements or visual estimate.
- Unless otherwise stated, all group dimensions are an estimated average.
- This schedule should be read in conjunction with **Drawing 1**.

D. Example Specification for Tree Protection Barrier.



a) Stabilizer strut with base plate secured with ground pins

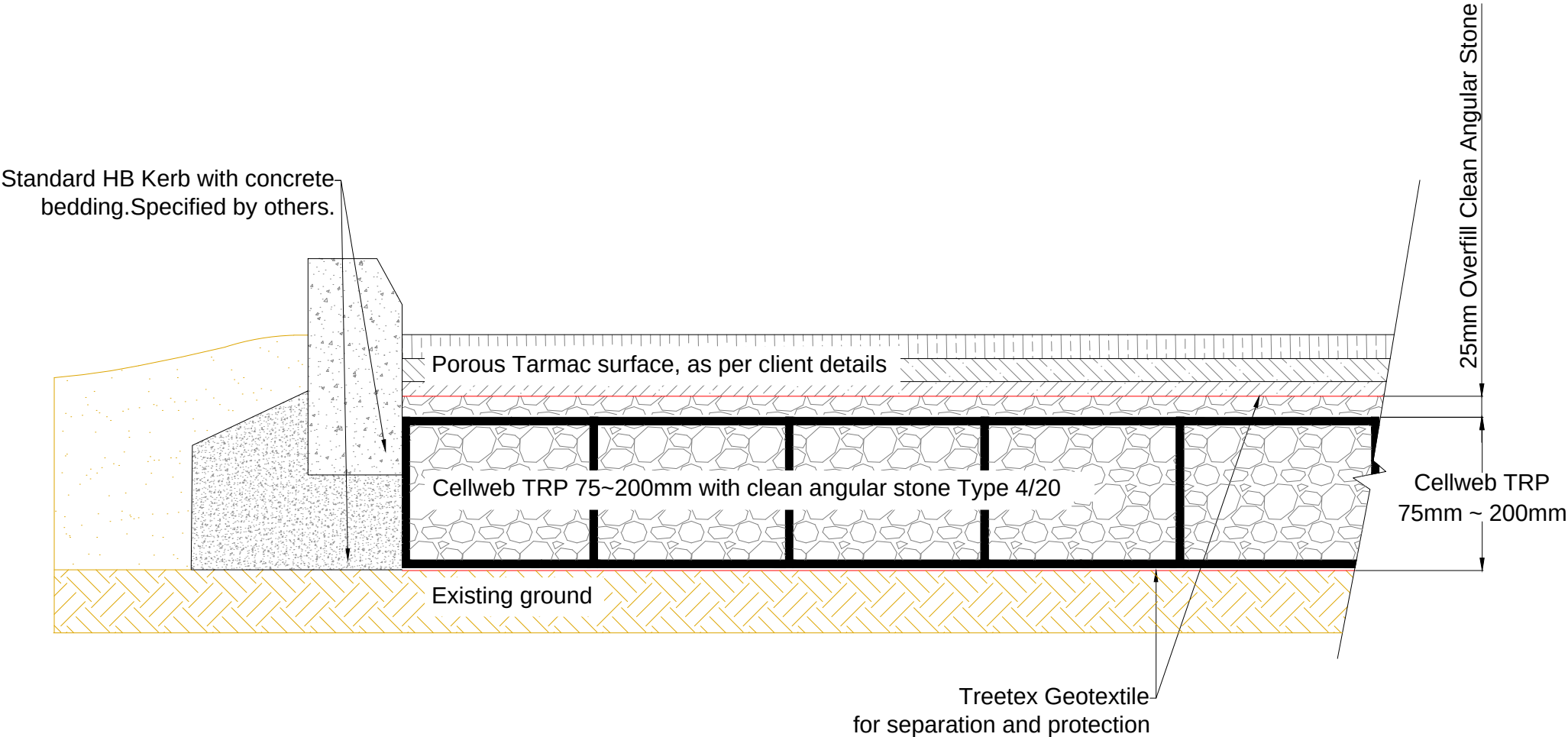


b) Stabilizer strut mounted on block tray

E. Tree Protection Signage (Example)



F. Cellweb TRP Example



Note: Subbase could be required depending on the existing ground CBR % and the type of traffic on the surface.

Our vision

“Engineering a better environment for people and the planet”

Our mission

“To solve complex problems for the benefit of clients, communities and the climate”

Our values

People orientated

Individually and collectively, people are our business. We strive to create environments for everyone to flourish and thrive.

Flexible

Pragmatic by nature and dedicated to getting the job done to the highest possible standard.

Professional

Operating at pace with integrity to deliver technical and robust solutions.

Environmentally aware

We understand our responsibility to the environment, it shapes our decision making and informs our practice.

Innovative

Our forensic questioning provides the ability to deliver appropriate innovations at every stage on every project.

Relationship focused

We value individuality and the benefits of working collaboratively to achieve positive outcomes for all.

