

WOODLAND MANAGEMENT PLAN  
FOR LAND AT PARCEL X,  
St. FRANCIS HOSPITAL,  
HAYWARDS HEATH, WEST SUSSEX

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## TABLE OF CONTENTS

<u>Section</u>	<u>Page No</u>
1. <u>INTRODUCTION AND BACKGROUND</u>	1
2. <u>EXISTING SITE DESCRIPTION</u>	2
3. <u>MANAGEMENT RATIONALE AND OBJECTIVES</u>	6
4. <u>MANAGEMENT RESPONSIBILITIES</u>	18
5. <u>MONITORING AND REVIEW OF MANAGEMENT</u>	19
6. <u>REFERENCES</u>	20
7. <u>TIMELINE FOR INITIAL WORKS</u>	21

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### MAPS

<u>Map No</u>	<u>Description</u>
1	Site Location Plan
2	Existing Habitats from 2002 EIA
3	Existing Woodland Vegetation Types from 2002 EIA
4	Habitat Creation Proposals
5	Priority Areas for Topsoil Donor Sites
6	Finished Ground Levels

## 1 INTRODUCTION AND BACKGROUND

1.1 Following the Public Inquiry into proposals to redevelop the St Francis Hospital site and to build Stage 6 of the Hayward's Heath Relief Road, the Inspector, affirmed by the Secretary of State accepted that there was a need for the development and acknowledged that this would necessitate the loss of part of Anscombe Wood. A copy of the Office of the Deputy Prime Minister's letter dated 17 March 2003 is attached as Appendix 1. This wood is ancient replanted woodland with a small area of ancient semi-natural woodland according to the West Sussex Inventory of Ancient Woodland. It is approximately 5.3ha in extent.

1.2 Around 3.4ha of Anscombe Wood would be lost. The new woodland would cover approximately 4 ha, thus achieving a net gain in area. Principles for its creation were set out in the Environmental Statement (Broadway Malyan 2002). Planning permission for the scheme was granted subject to a series of conditions. Condition 9 relates specifically to the woodland. It states:

***“9 A woodland management plan, including long term ecological objectives, management responsibilities and maintenance schedules for the areas of woodland identified on Site X on the masterplan (drawing L90/009) shall be submitted to and approved by the local planning authority before commencement of the development hereby permitted. The approved plan shall be implemented in accordance with the submitted details.”***

1.3 This management plan has been written to meet the above condition.

Section 2	Existing site description.
Section 3	Management rationale and objectives.
Section 4	Management responsibilities.
Section 5	Monitoring and Review of Management.
Section 6	References.
Section 7	Timeline for initial works.

### **Maps**

Map 1	Site location plan
Map 2	Existing habitats 2002 EIA Appendices extract
Map 3	Existing woodland vegetation types 2002 EIA Appendices extract
Map 4	Habitat creation proposals
Map 5	Priority areas for topsoil donor sites.
Map 6	Finished ground levels, Parcel X

### **Appendices**

1	Extract of Inspector's Decision
2	2002 biological data on site from EIA
3	2005 Updated Survey.
4	Plants Available from Bolnore Village Phase 2

## 2 EXISTING SITE DESCRIPTION

2.1 The physical features of the site are described first, followed by a summary of the site's history and a description of its biological features. Information is taken from published maps and from the 2002 Environmental Statement. Further survey work has been provided by Jaquelin Fisher Associates Ltd (JFA) during 2005.

### **Physical description**

2.2 Anscombe Wood lies on the southern edge of Haywards Heath. The site for which this management plan has been written includes Anscombe Wood itself and two tree belts and an improved grassland field to the south of the wood. These areas are shown on Map 1. The grid reference of the site is TQ 335225.

2.3 The drift geology beneath the area is the Upper Tunbridge Wells Sands. Soil conditions vary, with some areas dominated by clay and others with more silty or fine sandy material. Detailed soil investigations have not been undertaken, but Anscombe Wood appears to be underlain by the typically heavy Wealden clay.

### **Historic information.**

2.4 Anscombe Wood is on an ancient woodland site, which means that there are no positive records of it being under any land use other than woodland during the last 400 years. However, the original native trees were felled and replaced with alien conifers over most of the woodland during the early 20<sup>th</sup> Century (date of planting unknown, based on map evidence). According to the landscape section of the Environmental Statement, most of the woodland was damaged during the Great Storm of 1987. The vegetation is now dominated by self-seeded young trees and scrub. More mature woodland remains in narrow strips on the western and southern edges of Anscombe Wood and in the wooded gully where a stream runs from north to south at the eastern end of the wood.

### Biological Description

#### **Habitats**

2.5 The habitats on and around Anscombe Wood are shown on Map 2. A more detailed map of the different woodland stand types within Anscombe Wood is provided in Map 3. For detailed descriptions of the Target Notes referred to below, See Appendix 2, pages 1 - 2.

*“Most of this woodland, ... comprised a dense growth of thin silver birch (Betula pendula) trees with scattered sweet chestnut (Castanea sativa) and pedunculate oak (Quercus robur) trees. The understorey was sparse and the ground flora was dominated by bracken (Pteridium aquifolium), bramble (Rubus fruticosus agg.) and bluebell (Hyacinthoides non-scripta). Along the southern edge of this woodland the canopy was more open. This part of the woodland comprised scattered mature pedunculate oak trees and the field layer was dominated by a dense growth of broom (Cystis scoparius) shrubs, bramble scrub, bracken fronds and bluebells. Again the understorey was poorly developed.*

*A larger number of mature trees were also recorded along the western boundary of Anscombe Wood, indicated by target notes 1 and 2. The area indicated by target note 1 largely comprised mature trees including pedunculate oak, beech (Fagus sylvatica), sweet chestnut and Scots pine (Pinus sylvestris) with a bramble-dominated field layer and no understorey. The area indicated by target note 2 supported a similar suite of tree species, but also contained a few understorey shrubs. These included hawthorn (Crataegus monogyna), holly (Ilex aquifolium) and hazel (Corylus avellana). Semi-mature broad-leaved trees dominated the woodland identified by target note 9. Although silver birch trees were recorded they did not dominate the canopy. The dominant trees in this area were ash, beech and sycamore. A dense growth of Rhododendron (Rhododendron ponticum) and Japanese knotweed (Fallopia japonica) were recorded in the northern half of this area.*

*Part of Anscombe Wood had been planted with conifer trees and most of the area indicated by target note 8 was dominated by Norway spruce (Picea abies) trees. Again, the understorey was poorly developed.”*

2.6 There is a stream within Anscombe Wood; this stream is heavily shaded by the surrounding trees. It “*was fast flowing and in places the stream banks were relatively high and almost vertical. In the area indicated by target note 12 the banks were shallow and the water appeared to regularly flow over the banks. It was here that a small number of wetland plants were recorded. These included opposite-leaved golden saxifrage (Chrysosplenium oppositifolium), water figwort (Scrophularia auriculata) and wild angelica (Angelica sylvestris).*” To the south of Anscombe Wood there is a field of improved grassland.

## Species

### **Ground flora**

2.7 The trees, shrubs and ground flora of Anscombe Wood were surveyed in and the resultant data is summarised in Appendix 2, Table 1, page 4. Twelve Ancient Woodland Indicator (AWI) plant species were recorded in Anscombe Wood; these are indicated by an asterisk in that Table. Nine were recorded in the strip of woodland adjacent to the stream. Two blocks within the western edge of the woodland supported four AWIs each. All the remaining areas within the woodland supported one or two AWIs. These results indicate that Anscombe Wood is not a high quality example of ancient woodland. Few large trees are present and the current plant diversity is poor.

2.8 In addition, the 2005 survey found two stands of Japanese knotweed (*Fallopia japonica*): one in the north-east quadrant of the wood, and one just off-site, on the eastern boundary between the wood and the playing fields. This is found in Map 1 in Appendix 3.

### **Fungi**

2.9 A transect survey of the wood’s fungi was undertaken in 2002. The full species list is provided in Appendix 2, page 6. The 2002 survey indicated that Anscombe Wood is not a significant site for fungi, so no further survey work has been undertaken.

### **Invertebrates**

2.10 Surveys in May and June 2002 recorded one Red Data Book (rare) species, four nationally scarce species and 37 'local' species. Most of these were woodland species such as deadwood and fungus beetles. Cresswell Associates concluded that the wood is of high local nature conservation importance for invertebrates. The full list of invertebrates recorded in Anscombe Wood is provided in Appendix 2, pages 6-8.

### **Reptiles and Amphibians**

2.11 The survey in 2002 revealed breeding common frogs and common toads in a pond within the woodland strip to the south of Anscombe Wood. The wood itself does not appear to be valuable habitat for amphibians. The survey results for reptiles were ambiguous, so the site was re-surveyed in 2005. The initial walk-over survey in 2005 suggested that Parcel X is poor habitat for reptiles. A full reptile assessment was undertaken in good weather on the site in suitable habitat. No reptiles were found.

### **Birds**

2.12 The 2002 survey found that the wood supports a variety of common woodland birds. The wood does support song thrush and bullfinch, which are national Biodiversity Action Plan (BAP) priority species. The more mature habitat on the edges, particularly the western and southern edges, of Anscombe Wood supports the highest number of breeding birds. The rest of the wood is more shaded and the density of breeding birds is lower. The surveys did not record any nightingales. The 2002 bird survey results are provided in Appendix 2, pages 9-12. No further bird survey work was undertaken.

### **Bats**

2.13 The western, eastern and southern edges of Anscombe Wood provide foraging habitat used by bats. In 2002, common pipistrelles and Nathusius' pipistrelles have been recorded foraging on these edges while a noctule was recorded commuting high above the woodland. The wooded corridor around the stream and pond south of Anscombe Wood is a well-used foraging and commuting route for bats. Common pipistrelles were recorded foraging and commuting there, while a *Myotis* species and probable serotine and Nathusius' pipistrelle were also recorded foraging. The original bat survey results are provided in Appendix 2, page 13 and no further survey work was undertaken.

### **Dormice**

2.14 A nest box survey was undertaken in 2002, concentrating survey effort on the more mature southern and western edges of Anscombe Wood because the surveyors judged these areas more likely to provide a positive result. This confirmed the presence of a breeding population of dormice in the wood. All of the habitat within the wood is suitable for dormice, although the southern and western edges are the most important area for this species and make the most significant contribution to their habitat. A survey was also undertaken in 2005, with a confirmation of dormice in the southern portion. This is found in Appendix 3, Map 1.

**Badgers**

2.15 During the 2005 survey 3 active badger setts were found; setts A, E and I. Only sett I is found in Anscombe Wood, and its location is found in Appendix 3, Map 1. This sett will be retained and protected throughout the soil translocation and road and housing construction period. Activity has increased in this sett since the survey in 2002.

2.16 Of the original badger setts identified in 2002, two were thought to be inactive, J and K. See Table 2 in Appendix 3. The 2005 survey found that an additional five of the originally active setts were now no longer active.

### 3 MANAGEMENT RATIONALE AND OBJECTIVES

3.1 The total scheme for which planning permission has been granted has been designed to retain as much of the mature woodland as possible, to maximise site biodiversity, and to enhance any existing habitat, by means of sensitive design and open space treatment and ecologically rich boundaries created between habitat areas and built development. This management plan is designed to 1) protect the retained woodland and 2) create new woodland using topsoil and other plant material taken from the areas due to be cleared. The overall aim of the scheme is to compensate for the woodland loss.

#### Planning Considerations

3.2 This plan arises from a condition of the grant of planning permission on appeal. It meets the objectives of PPS 9 particularly in regard to:

“The Government’s Objectives.....

- To contribute to rural renewal and urban renaissance by:
  - Enhancing biodiversity in green spaces and among developments so that they are used by wildlife and valued by people, recognising that healthy functional ecosystems can contribute to a better quality of life and to people’s sense of well-being; and
  - Ensuring that developments take account of the role and value of biodiversity in supporting economic diversification and contributing to a high quality environment.

#### Key Principles

(v) Development proposals where the principal objective is to conserve or enhance biodiversity and geological conservation interests should be permitted.

(vi) The aim of planning decisions should be to prevent harm to biodiversity and geological conservation interests. Where granting planning permission would result in significant harm to those interests, local planning authorities will need to be satisfied that the development cannot reasonably be located on any alternative sites that would result in less or no harm. In the absence of any such alternatives, local planning authorities should ensure that, before planning permission is granted, adequate mitigation measures are put in place. Where a planning decision would result in significant harm to biodiversity and geological interests which cannot be prevented or adequately mitigated against, appropriate compensation measures should be sought. If that significant harm cannot be prevented, adequately mitigated against or compensated for, then planning permission should be refused. “

3.3 As the ODPM’s letter states, in Appendix 1, paragraph 6, the Secretary of State accepts that the requirement for a sequential test as set out in PPG 3 was met at this



site; In paragraph 12 of that letter, he alludes to the Inspector's position on the harm to the woodland set against the community benefit of the relief road and housing.

3.4 The Inspector states in paragraph 14.37 of his report, at the end of Appendix 1, that a new woodland area would be established, and in paragraph 14.39 finds that the mitigation measures proposed are comprehensive.

3.5 Thus the requirement for the woodland management plan meets the Government's Objective for rural renaissance and urban renewal, in that the management plan will enhance biodiversity and the important contribution it makes to the human environment, and as a condition of the overall application, is an acknowledgement of the importance that is placed upon biodiversity.

3.6 In terms of Key Principles, the rationale for the management plan on its own directly accords with the first principal; however, as it is only a part of the totality of development, it also needs to be seen in the light of the second principle. A review of the Secretary of State's letter and those elements of the Inspector's decision which consider Anscombe Wood make it clear that this principle was also adhered to.

#### Land Use History as a Basis for Management Objectives

3.7 As explained above in Section 2, the habitat being moved has already been subject to substantial changes through replacement of the native woodland with conifers in the 20<sup>th</sup> century and through the loss of trees and clearance resulting from the 1987 Great Storm. Nevertheless, it still apparently retains an almost unbroken history of woodland cover. It is recognised that translocation cannot maintain the intrinsic value of the habitat being moved. However, it should be possible to use the translocated soil and plant material to form the basis for a better quality habitat than would be created by a planting scheme alone.

3.8 Set out below are the Principles for habitat design and the over-arching management objectives. These are descriptive, and set out the approach which will be taken in designing, planning for and implementing the creation of the new wood. Following that section, an objective and task list is presented, which links to the time line at the end of this management plan.

#### Overview of Management Objectives - Principles

##### **Design of the Translocated Wood**

3.9 The design of the new wood is shown on Map 4. It includes a variety of features, which will result in a mosaic habitat, which is considered ideal for lowland woodlands ( Rodwell & Patterson 1994). It should in the long run provide at least equal or better habitat to that which was present in Anscombe Wood.

3.10 A network of rides will allow access through the wood. East – west rides predominate, as these should receive most sunlight, which will allow grassland to develop. One ride is proposed along the existing edge of Anscombe Wood. This will allow more light to reach the trees that are currently growing on the woodland edge and would otherwise be surrounded by the new and existing wood areas. It also

means that this part of the historic boundary of Anscombe Wood will be kept as a landscape feature.

3.11 Two areas on the fringes of the new wood have been selected as reptile receptor sites. The existing grassland in these areas will be allowed to become rank and some scrub may be planted. As no reptiles have been found in Parcel X, reptiles from Parcel Y will be translocated to this area.

3.12 Within the new woodland an area of native woodland will be planted adjacent to existing woodland, to provide some new habitat for dormice as quickly as possible. Most of the new wood will be planted on woodland topsoil taken from Anscombe Wood. Native trees and shrubs will be planted across this area.

3.13 In one area the translocated topsoil will be left with no additional planting, to allow natural regeneration to occur. Dead wood will be moved from the existing woodland, to create new habitat piles and one loggery designed specifically for stag beetles.

#### **A Description of the Measures to be Undertaken**

3.14 Unless otherwise specified all works in Anscombe Wood and the new wood will be supervised directly by an ecologist. The first step will be the eradication of Japanese knotweed in and adjacent to Anscombe Wood, before any work commences. This has been prioritised and is likely to be completed before the reserved matters approval.

3.15 The next step in work on this site will involve confirming the precise boundaries of areas of habitat to be lost or retained and pegging these out on site. If more than six months have elapsed since JFA's badger survey in September 2005 then this should be repeated as a precaution.

#### **Fencing**

3.16 A fence line will be cleared and Heras fencing will be erected around all retained habitat areas. Notices will be placed on the fences alerting contractors to the need to avoid incursion into these areas.

#### **Species Protection - Badgers**

3.17 Preliminary results of badger survey in 2005 suggest that only badger sett I will be affected directly by these initial works. An English Nature badger licence will be applied for once the reserved matters approval is granted. Badger activity will be monitored during work, and if the need for further protection and licensing arises it will be addressed. Fencing will be placed to protect Sett I, and work will be phased to ensure that this sett is not isolated from habitat or corridor links.

### **Species Protection - Dormice**

3.18 A dormouse licence will be required for all tree and shrub clearance within Anscombe Wood. The precise working practices will therefore be finalised under a DEFRA Method Statement. The following measures are likely to be required, although the working methods may have to be revised depending on season:

- New planting on at least some of the new wood as early as possible in the programme.
- No ground clearance during winter when hibernating dormice could be vulnerable.
- Coppice shrubs over winter and remove cut material by hand.
- Clear ground layer vegetation in spring, undertaking a hand search for dormice and nests. Any that are found will be moved to retained habitat. Work towards the areas of retained woodland.
- If possible, after coppicing the trees to ground level, the growing fronds of bracken will be treated with a specific systemic herbicide (e.g. Asulam) the following summer but before translocation, to reduce the vigour of the bracken regrowth after translocation.

### **Species Protection - Nesting birds**

3.19 Woodland clearance works should be scheduled outside the bird nesting season if possible. If not they must be preceded by a check by an ecologist, and works delayed around any occupied nest until the chicks have fledged.

### **Species Protection - Reptiles**

3.20 No evidence of reptiles have been found within Anscombe Wood. However, there is a small amount of potential habitat for slow worms and grass snakes. Therefore a destructive search for reptiles will be undertaken during the woodland clearance phase, and any reptiles captured will be moved to suitable habitat on the edges of the grassland field where the new wood will be created.

### **Soil Receptor site preparation**

3.21 The translocation site is an agriculturally improved grassland field. It is likely to be nutrient enriched, which would make woodland ground flora establishment difficult. To reduce this problem the topsoil will be stripped from this area. After topsoil stripping the surface will be scarified to reduce compaction. Scarification will be undertaken using a harrow, rotovator, plough or similar equipment.

3.22 The existing topsoil and grassland will be left undisturbed in the two areas due to be used as reptile receptor sites. Instead, these areas will be enclosed in temporary fencing to avoid accidental incursion by machinery. The grassland will be allowed to become more rank. Some cut woody material from Anscombe Wood will be used to create refugia within these receptor areas. The precise placement of the refugia should be selected to maximise the time before they become shaded by trees on adjacent areas, to allow the reptiles more time to colonise suitable habitat within the rest of the new wood.

## **Translocation**

3.23 The existing ground flora survey data has been reviewed to produce a map prioritising donor areas, based on the number of Ancient Woodland Indicator Plants recorded and the predominance of species such as bluebells as opposed to bramble and bracken in the ground flora. This prioritisation is illustrated in Map 5. The precise depth of topsoil to be moved will be determined after on-site investigation.

3.24 Soil and plant translocation can be undertaken in either the autumn or the spring, as this should improve re-establishment of ground layer vegetation (Hietalahti & Buckley, 2000). If done in the autumn, this allows for bracken treatment in the preceding summer. If autumn works are not possible then spring would be the next alternative. However, precise timing must also be influenced by soil conditions. Moving the soil when it is too wet could result in smearing of the interface between the translocated soil and the underlying material (Roberts, 2000). This would lead to later problems with, for example, drainage. For the purposes of this plan, it is assumed that works will commence in the winter of 2005/06, with actual soil and plant translocation occurring in the autumn of 2006.

3.25 Soil translocation will be translocated by digging out topsoil using a 360 digger and transported using a dumper truck. The depth of topsoil to be moved will be confirmed by on-site investigations but is likely to be about 300 – 400 mm. This method is designed to maintain the seed bank, but it is recognised that the soil profile will be disrupted.

3.26 It is proposed that topsoil will be removed from each area in two lifts, with the upper material removed first and then the lower layer of topsoil. However, some soils are expected to be thin over parent material, in this case only a single lift of soil will be removed. If two layers are moved, they will be stored and spread separately. The soil will be spread on the receptor areas to the same depth as was removed from the donor site. The lower layer of soil will be spread first, and then the material from the upper layer will be placed on top of it. If a single layer is removed, it will be treated as topsoil, and either placed on sub-soil or directly on the translocation site.

3.27 The machinery and working directions will be selected to keep machine movements over the soil prior to stripping to an absolute minimum. There will be no movement of machinery over the soils once they have been spread on the receptor site.

3.28 The topsoil will be spread on the receptor site on the day it is excavated, if possible. If this is not practical then the topsoil from these areas will be stockpiled no more than 1m high. The soil will not be compacted and will be spread as soon as possible and within no more than one week after excavation.

3.29 Bracken treatment is likely to be required in this receptor site, as the translocation material will contain numerous fragments of rhizome. This cannot be done until the fronds are growing, so it will almost certainly have to be done by hand spraying.

## **Planting**

3.30 The list of species to be planted is set out below. Birch and bramble are not included in the planting schedule, as it is expected that sufficient stock will regenerate from the seed bank and other plant material translocated with the soil. DAFOR values are given to show the relative proportions of the different species. The list of species is based on that recorded in Anscombe Wood, with consideration of the species found at Ashenground Wood, an ancient semi-natural woodland SNCI on broadly similar soil to the north west of this site.

- Hornbeam (abundant)
- Hazel (abundant)
- Pedunculate oak (frequent)
- Ash (frequent)
- Field maple (occasional)
- Hawthorn (Occasional)
- Holly (Rare).

3.31 Trees and shrubs will be planted at about 2m centres. For variety, patches throughout the wood will be planted at 3 to 5m spacing. All trees will be sourced from known native stock. This will be sourced from southern and south east England as far as possible. Saplings will be grouped in small single-species clumps of three to six, with oak and ash standards scattered more evenly across the woodland. If practical, some saplings will be translocated directly from Anscombe Wood into the new wood.

3.32 All planting will be undertaken using hand tools. Either tree guards will be placed around every planted tree or rabbit and deer fencing will be erected enclosing the whole of the new wood.

3.33 One area of planting is proposed before any translocation occurs. This will reduce the time lag before new habitat becomes suitable for dormice.

3.34 Across most of the new wood, ground flora planting is not specified, as this should be provided predominantly by the translocated topsoil. However, some herbaceous planting is proposed, using locally sourced native specimens, and honeysuckle will be specified in the area where no topsoil will be translocated. In addition, if still available, some of the woodland plants taken from Bolnore Village Phase 2 will be planted in this area.

3.35 Native trees will be planted following the above specification on all of highest priority areas, (where blocks of topsoil and vegetation will be placed), and on most of the areas where topsoil will be spread. In one area towards the southern edge of the new wood the topsoil will be spread but no additional planting will occur. This area will be left to regenerate naturally. This should result in a similar, birch and bramble-dominated, area, similar to the majority of Anscombe Wood.

3.36 The balancing pond, may be planted up using some Bolnore wetland species (See Appendix 4) and others taken from the existing large pond in the woodland strip south of Anscombe.

### **Integration with the Road Works and Residential Development**

3.37 The design principles for the translocation work will be integrated with those for the relief road and the new housing. While these are not yet finalised, it is proposed that the following measures are incorporated to ensure that the new woodland links to new and retained habitat in the locality.

3.38 New hedgerows / tree lines are due to be created along the verges to maintain habitat linkages. In addition, a spanning bridge or similar feature will be used to provide a route under the Relief Road for bats, badgers and dormice, following the line of the stream through the ghyll woodland.

3.39 Mature and young trees will be felled during clearance of Anscombe Wood. Dead wood will be kept to create habitat diversity in the new woodland. Some smaller material will be piled at the reptile receptor sites, as explained above. Additional piles of cut material will be created across the new wood. In addition, some of the larger timber will be logged with the bark left on it. These logs will be half buried in the ground to create a 'loggy', a feature designed to provide habitat for stag beetles and other specialist deadwood fauna.

3.40 Dormouse boxes will be erected at 10m spacing throughout the retained area of Anscombe Wood. Placement of boxes will follow standard best practice for the national dormouse monitoring programme.

3.41 Fifteen bat boxes will be erected in Anscombe Wood and the other retained areas of mature woodland and tree belts. These will be Schwegler woodcrete boxes. Most will be a standard basic design such as model 2F. This design is suitable for both pipistrelles and long-eared bats. One box would be a larger design, such as the 1FS box, designed to maintain a more stable winter temperature. All of the boxes will be sited at least three metres above ground level on or close to the south-facing side of trees.

3.42 In the longer term management activities such as coppicing will be introduced. However, coppicing or felling in retained areas will not be undertaken during the initial works unless required for safety reasons. This is because the whole scheme of works will inevitably result in a temporary reduction in the available habitat for species such as dormice. It is therefore important to delay any additional works that would cause retained habitat to become temporarily unsuitable.

### **Maintenance Schedules**

3.43 Management as described will be implemented by means of the following Maintenance Schedules set out below. There are three sets of these: 1) immediate tasks during translocation and establishment; 2) medium term tasks, during the early woodland successional stages, when it is vulnerable to catastrophic events; and 3) long term tasks, to ensure that over time the woodland evolves into a habitat that maximises its site potential. It would be expected that the schedules would be added to or revised, depending on the condition of the wood at that time.

3.44 For each phase there are specific target species and habitats, and these will be monitored. During the first phase, it is important to ensure that key species such as dormice, badgers and bat populations are not affected by the translocation process. This will require that sufficient existing habitats are protected so that populations are maintained, and that the new woodland, in combination with retained habitat areas within the relief road corridor and on the new residential site, provide habitat of at least equal or greater value to that which is lost.

### **3.45 Immediate Objectives During Translocation and Establishment**

- Protect all areas of woodland habitat due to be retained from harm during development. Mid-February 2006 onwards
  - This will involve accurate setting out, followed by fencing and management of retained habitat.
  - Tree surgery, strimming of herbaceous growth and some cutting back of the shrub layer will be undertaken, all under the supervision of an ecologist.
  
- Protect badgers, dormice, bats, reptiles and nesting birds from harm during translocation. Mid-February 2006 onwards
  - This will require fencing off of badger setts and the creation of badger safe corridors and foraging areas. Badger use will be monitored.
  - It should be recognised that badgers may cease using Sett I during this period, but it will still be protected, as they may re-establish after construction disturbance.
  - Dormouse nest tubes and boxes will be left on site to maintain safe nesting locations for the species.
  - Bird boxes will be placed on site to provide nesting habitat for birds
  - All large trees to be lost will be climbed and inspected for bats prior to removal.
  - Woodland and shrub layer will not be disturbed during the nesting season, except under the supervision of an ecologist. Breeding, nesting and fledgling birds will not be disturbed.
  - Fence off retained areas and woodland edges with Heras fencing or similar prior to removal of topsoil. Ensure no vehicles enter these areas nor material stored or rubbish disposed of.
  
- Create a robust substrate for new woodland translocation April through June 2006
  - In the area for the new woodland, illustrated on Map 1, cut off or plough off top layer of vegetation and remove
  - Remove topsoil equivalent to depth of plough layer, e.g. 300-400mm
  - Re-use topsoil elsewhere, such as in gardens, verges of new relief road or elsewhere that nutrient-rich soil is required.
  - Harrow remaining surface of soil or use chain to create as fine a tilth as possible

- If woodland receptor soil is left for a period of time and weeds begin to grow, treat with a systemic biodegradable herbicide such as Round-Up before planting woodland.
- Initial Woodland preparation. – February through August 2006.
  - Coppice woodland, and stockpile arisings, outside of the breeding bird season and preferably before 1 March 2006.
  - Treat bracken with Asulam or strim down and control.
  - Remove any specimens of herbaceous vegetation of interest for cultivation off-site.
- Remove topsoil and plant material from woodland and place in receptor area September through November 2006
  - Grub out tree trunks and coppice stools and stock pile.
  - Remove and store any vigorous saplings, ensuring roots stay covered and moist.
  - Remove cherry laurel and rhododendron and treat as waste, taking off-site
  - Remove top soil in 1-2 lifts. Soil horizon development is predicted to be variable and depth to parent material may not be great.
  - Where two horizons are evident, separate upper from lower and store separately.
  - Ensure that no rubbish, made ground or fill (areas of which are known in Anscombe Wood) are move to the receptor site
  - If at all possible, place soil on receptor site the same day as it is removed
  - If stockpiled, place in defined areas, and keep upper and lower horizons separate. Do not stockpile higher than 1m.
  - Place soil material on receptor area. Work into substrate, using harrow or similar. Lightly compact.
  - Place some or all of coppice stools and trunks on translocation site; place coppice arisings and brash on site as well.
  - When all soil translocation complete, compact retained sub-soil well in former woodland, and configure slopes as shown on Map 6.
  - To ensure no siltation from erosion into the woodland ghyll, create siltation traps by means of an excavation and geotextile to filter run-off before it enters the ghyll. Grade slopes towards ghyll accordingly.
- Woodland Planting up Receptor Area September through November 2006
  - Once all soil has been moved, placed in translocation area and treated as above, the woodland can be planted, using first any suitable saplings from the woodland.
  - As it is expected that saplings will not be sufficient, whip specimens representative of the woodland type now found in Anscombe Wood (See Appendix 2) will be planted, as described in paragraph 3.31



above. Shrub specimens, as per whips, will also be planted. All specimens will be of local provenance.

- Planting will be as per the design set out in Map 4.
- Whips will be planted in pits, with ties and tree guards.
- The site will then be fenced, with consideration given to deer-proof fencing.

- Herbaceous planting in the Receptor Area - Spring 2007

- Herbaceous species will be planted in the receptor area in the spring following the planting of the woodland.
- Specimens will include those propagated from any removed from Anscombe Wood prior to soil removal.
- Specimens will also be sourced from propagules removed from Bolnere Village, Phase 2. A list of these are attached as Appendix 4.

### **Medium Range Goals**

3.46 From year two to fifteen the woodland will establish. During this time, it will represent a different sere to that which it is meant to replace. Thus it is expected to support a different range of species. It is expected to evolve into a woodland similar to Anscombe Wood, but that resemblance will only be obvious in the latter stages of this period.

3.47 During this period, the wood will be vulnerable to depredation by deer and invasion by undesirable species such as bracken. If not controlled, this can affect the long-term outcome of the site. Other considerations are periods of drought, or excessively cold weather that can affect the survival of the woodland. The following are goals and tasks for the medium range

- Monitor woodland condition at least annually, with at least four maintenance visits each year.
  - Replace dead or dying woody specimens
  - Consider altering woodland species dominants if certain species fail to thrive on the site.
  - Control invasive species, such as bracken or sycamore.
  - Ensure woodland cover is adequate to prevent erosion and consider seeding with suitable wildflower or wild grass seeds if needed.
  - Undertake a woodland inventory of botanical species quarterly
- Manage the site for Wildlife
  - Undertake invertebrate, dormice, badger use, bird and bat activity surveys during appropriate seasons within the translocated woodland.
  - Ensure that habitat appropriate to each group continues to be available, if appropriate.

### **Long Term Management**

3.48 In the long term, the wood should be able to support a similar range of species to that which Anscombe Wood now supports. The challenge is to ensure that there is no localised extinction in the interim period, when there is a reduction in habitat due to the seral stage of the replicated woodland. Assuming Medium Range management has been effective, the following tasks for the long term would be suitable. It would

be expected that certain activities listed below would commence towards the end of the Medium Term, depending upon the rate at which the woodland establishes and matures. Such activities include ride management and coppicing.

3.49 The majority of the retained and new woodland will be managed by coppicing. The long term management prescription is described below. It will be divided into a series of coppice coupes. The pattern of coupes will be designed to maintain linked areas of more mature habitat to benefit dormice. The retained edges of Anscombe Wood are dominated by mature trees and will not be included in the coppice rotation.

3.50 Each coupe will be coppiced every 15 – 20 years. No coppicing will be undertaken until at least five years after the end of the initial works. This delay is designed to allow time for the vegetation to mature before additional areas are cut, making them temporarily unsuitable for dormice.

### **Ride management**

3.51 The central section of each ride will be mown every autumn and the cut material will be removed. A band of longer grass will be allowed to develop either side of this central strip. These edges will be mown every two years with the cut material removed. Only one side of a ride will be mown in each year. If mowing is done mechanically, set the machines' blades at about 100 mm above ground level. Beyond the longer grass a band of shrubs will be allowed to grow and will be maintained by coppicing every five years.

### **Management of standard trees**

3.52 The condition of mature trees will be monitored every year, with particular focus on trees close to footpaths. Necessary safety works will be undertaken, but these should be kept to a minimum. For example, tree surgery can often reduce risks associated with trees without a need to fell them.

### **Management of reptile areas**

3.53 The grassland in the original reptile receptor areas will be managed by mowing every two or three years. The mowing blades should be set above about 100mm to reduce the risk of harm to individual reptiles. The cut material will be removed from the site or collected together to create compost heaps. These would provide breeding sites for grass snakes.

### **3.54 Specific Maintenance Tasks**

- Institute regular woodland management by coppicing on a coupe rotation of 7 years.
  - Cut back all coppice shrubs in that coupe to just above ground level using chain saws and hand tools. Cut faces will be angled rather than flat to allow water to run off.
  - Leave some of the coppiced material on site in piles. Remove the rest from the site, following set routes to avoid wide scale disturbance of the ground layer and soil compaction.
  - Retain the brash (thin branches with attached twigs) and spread it over and around each coppice stool to reduce damage by browsing deer.
  - Retain scattered trees to grow to maturity.

- Ensure that there is no conflict with dormice use and habitat.
- Ensure no conflict with bird breeding and feeding habitat.
- Leave arisings on site
- Institute ride management with an annual cutting of rides (See Map 4 for their locations)
  - Cut central portion of ride every autumn
  - Utilise cuttings to create hibernacula for slow worms.
  - Cut only one side of each ride every year and then alternate
  - Coppice shrubs in ride every five years
- Continue to monitor invasive species and vigour of woodland canopy specimens
  - Keep replacement planting to a minimum for the long term and rely on natural regeneration and replacement.
  - Thin and open up canopy as necessary.
  - Control weeds and remove invasive species as needed.
  - Undertake tree surgery as necessary.
  - Monitor individual trees and only trim if needed for safety or tree health reasons
- Reptile areas will be managed to retain habitat value
  - Mow every two to three years
  - Remove arisings or use to create compost areas for refugia and nesting

#### 4. MANAGEMENT RESPONSIBILITIES

4.1 Management of the woodland is set out in three phases: initial works, medium term management and long term management. Responsibility for the initial works will lie with Crest Nicholson. Responsibility for the long term management of the site will be passed to the local planning authority with an agreed sum for long-term management which has been embodied in a planning agreement with Mid-Sussex District Council, who will maintain the woodland in perpetuity. It is expected that the site will be handed over to the local authority during the medium term phase, after the woodland has been established and all relevant implementation has been completed.

4.2 Initial works will involve some loss of woodland. This will require a DEFRA licence because of the loss of dormouse habitat. The application for such a licence will be made jointly by Crest Nicholson and Jaquelin Fisher Associates Ltd. An English Nature badger licence will also be required as some of the working area will fall within 30m of Sett I. Consideration should also be given to applying to the Woodland Grant Scheme to assist with regulating and funding long term management.

4.3 A management committee will be established to allow interested parties to help guide both the initial works and the long term management of Anscombe Wood. The membership of the committee will be agreed as this draft management plan is finalised but likely members include: Sussex Wildlife Trust, West Sussex County Council ecologist, Mid Sussex District Council countryside team, English Nature, and local residents' group(s). English Nature should be copied in on all documentation even if the organisation does not decide to become directly involved in the committee, as the works on site will affect the habitat of protected species.

## **5. MONITORING AND REVIEW OF MANAGEMENT**

5.1 Every year a record will be made of the management activities that have occurred. This will be tied in closely to the Maintenance Schedules set out in Section 4. This is particularly important during the initial works to ensure that future managers have a record of, for example, the area to which the woodland soil from a particular donor area was translocated.

5.2 A biological monitoring programme will be set up. During the initial works period all the features lists below will be monitored every year. In the longer term some features will be monitored less frequently, as set out below:

### **Every year:**

- Check tree safety, particularly around any public footpaths (or more frequently if recommended for safety reasons).
- Check activity at each badger sett and record any new setts.
- Survey dormouse nest boxes (dormouse survey licence required).
- Survey bat boxes (licence not required unless bats are recorded, after which that box must only be opened by a licence holder).

### **Every two years:**

- Undertake bat activity survey.
- Undertake breeding bird survey.

### **Every five years:**

- Record sample photos of each area of habitat.
- Record species and cover in quadrats along a series of sampling transects through the retained woodland and each of the different treatment areas in the new southern woodland.
- Undertake tinning survey for reptiles if none have been seen as casual records during the previous five year period.

5.3 Monitoring records will be submitted to the Sussex Biological Records Centre once a year. If a national centre is established for co-ordinating information on habitat and species translocation then records will also be sent to them.

5.4 The long term management prescription in this document has been written before any of the translocation work has been undertaken. It is therefore strongly recommended that this management plan is reviewed by the management committee during the final year of the initial works period, and amended as necessary. In the longer term standard practice is to amend plans if new and unexpected issues arise but also to schedule a more formal review of the management plan every five years.

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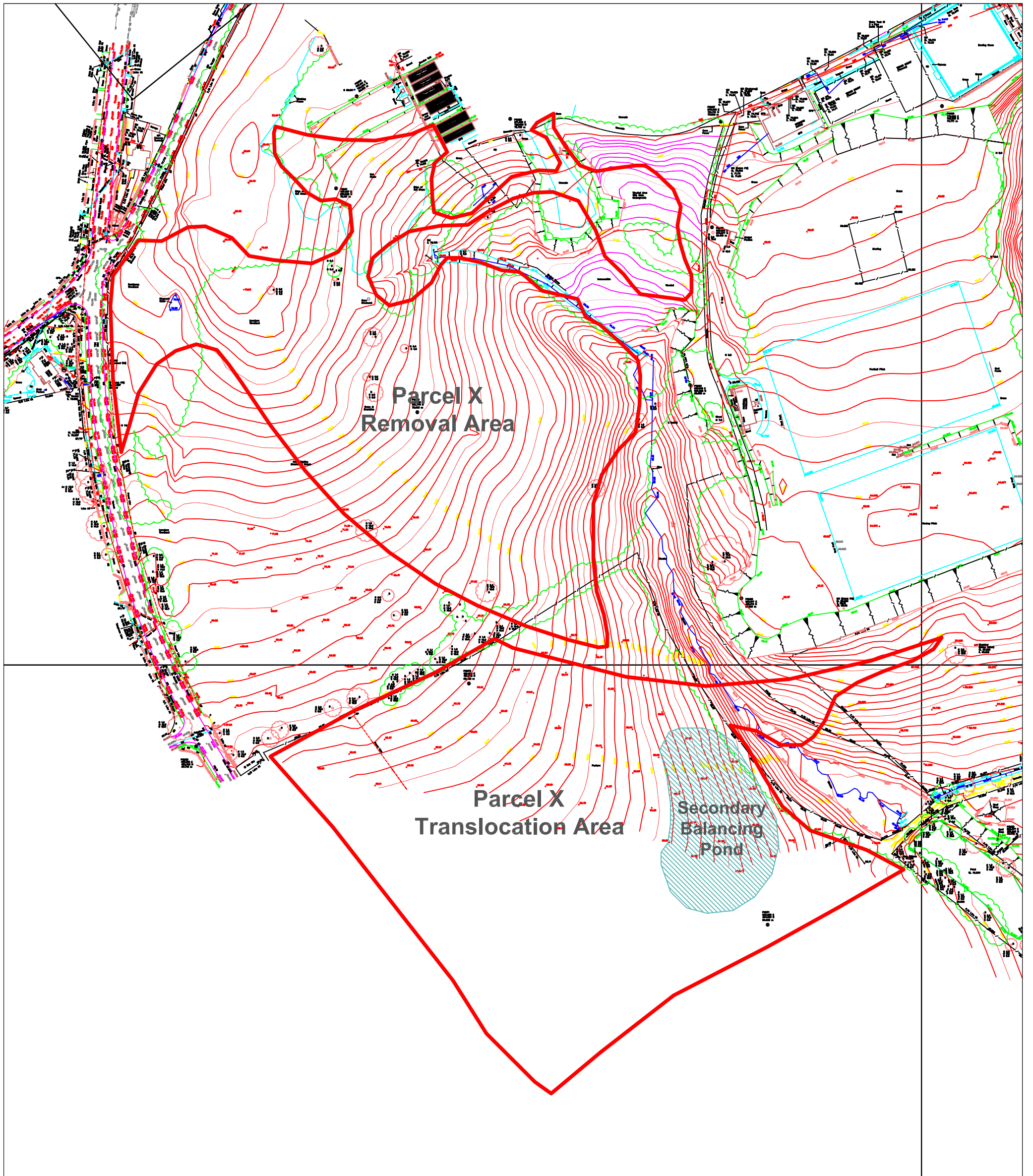
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## Annex

### Habitat management record sheet

include map of area and record everywhere each management activity occurs (e.g. soil translocation – show each donor site with the relevant receptor site; areas planted / coppiced / rides mown in each year).



 Red Line Boundary

**JAQUELIN  
FISHER**  
ASSOCIATES



Drawing Title

St. Francis Hospital X & Y

Scale  
**1:2500**

Drawn  
**JEG**

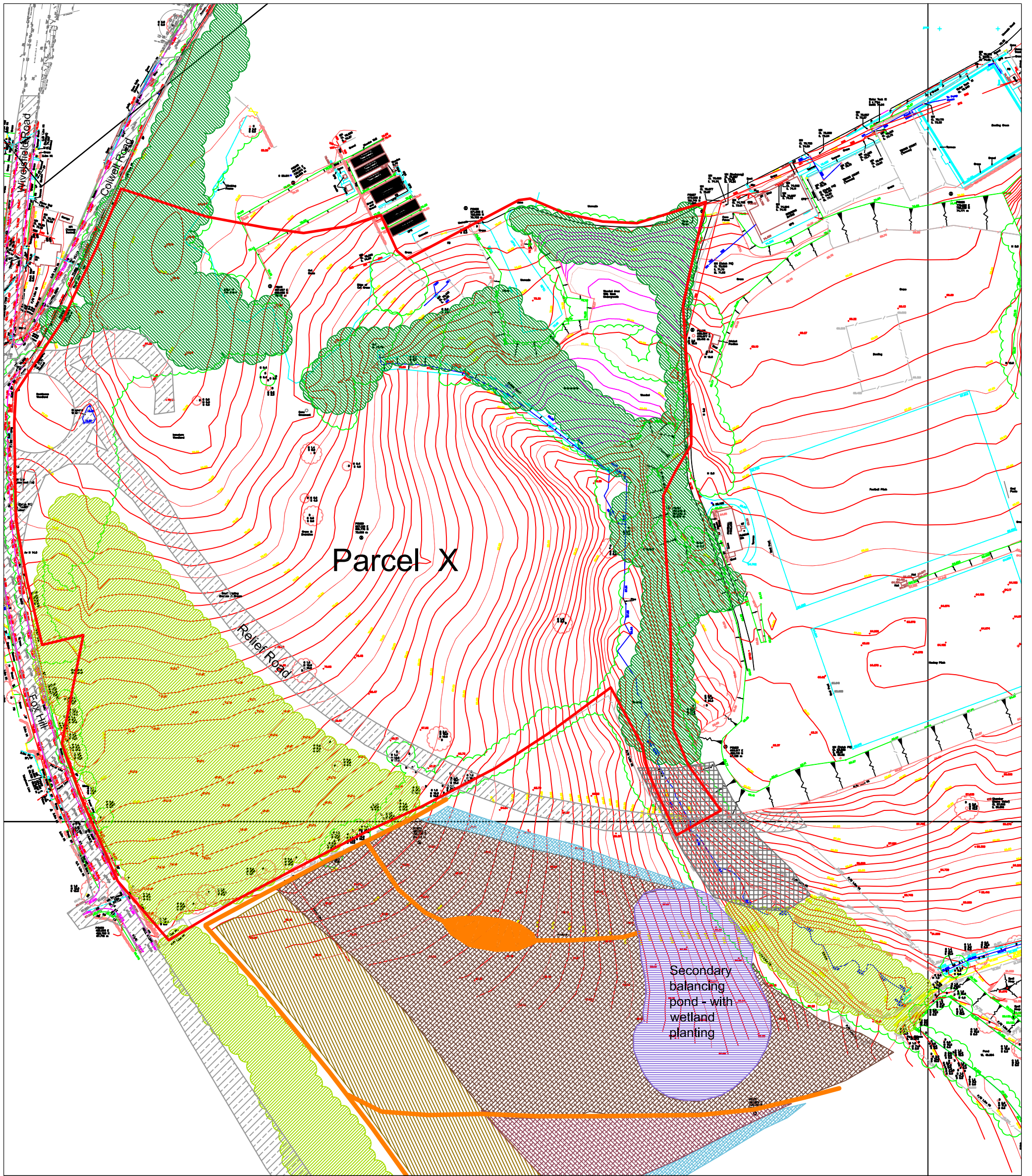
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October 2005

Job Number  
WS 1184

Drawing Number  
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









Rev  
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Parcel X

Secondary balancing pond - with wetland planting

-  Site boundary
-  Retained wood north of relief road
-  Retained wood south of relief road
-  Roads
-  New native woodland - to be planted in the earliest available planting season
-  Bridge proposed in ES to provide route under relief road for badgers, dormice and bats
-  Refugia creation & scrub planting - reptile receptor site
-  Topsoil translocation receptor site - followed by native planting
-  Topsoil translocation receptor site - followed by natural regeneration
-  Balancing pond with wetland planting
-  New rides and glades

**JAQUELIN FISHER**  
ASSOCIATES



Drawing Title  
**Anscombe Wood & Translocated Wood Plan**  
**St. Francis Hospital Parcel X**

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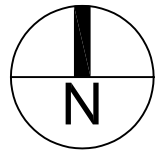
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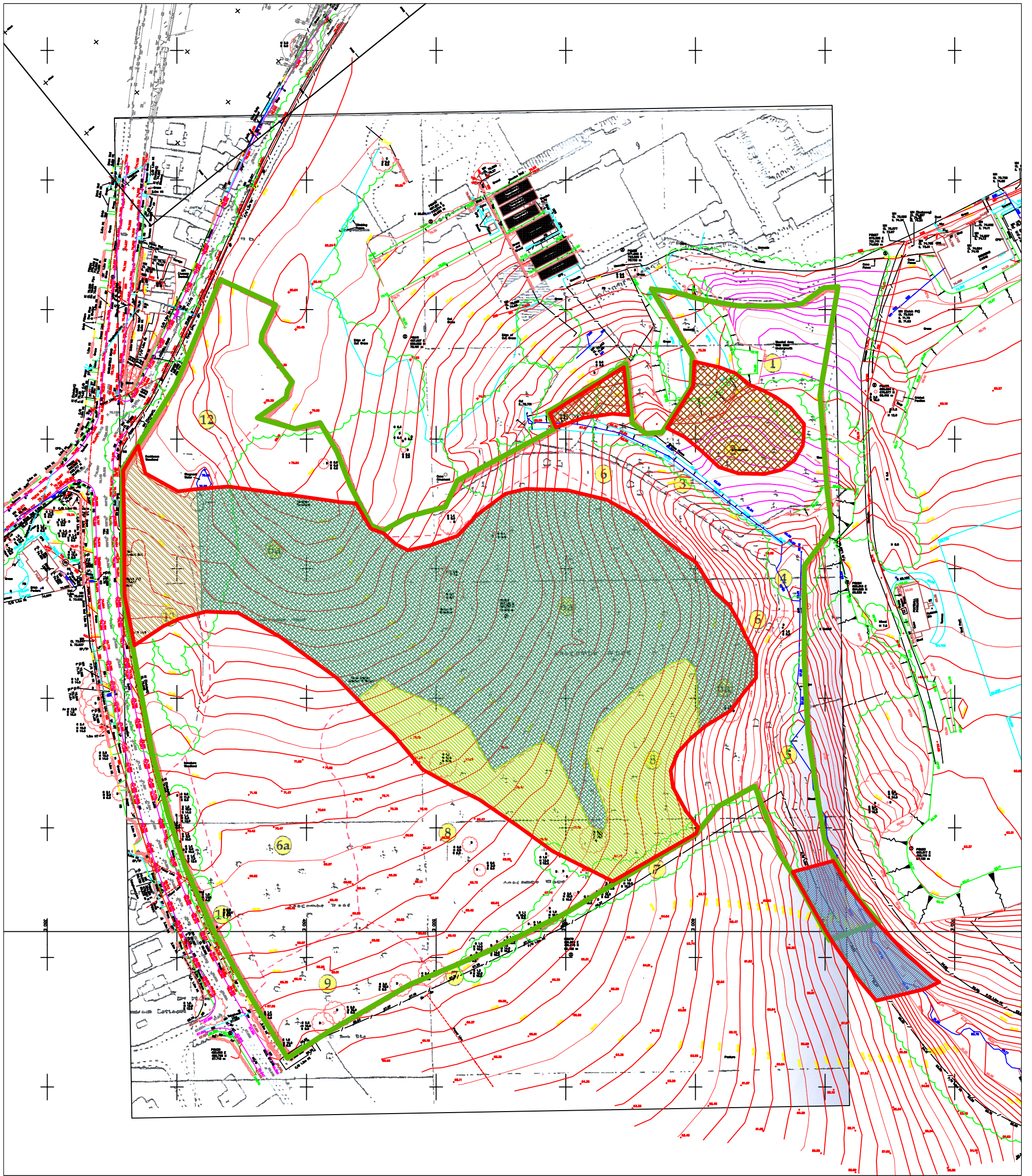
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 JEG

Drawing Number  
 2

Date  
 October 2005

Rev  
 -





Woodland boundary



Approximate boundary of woodland to be cleared

Priority for Soil Translocation:



1 - Area round stream - ground flora dominated by bluebell & wood anemone with several ancient woodland indicators



2 - Areas 11 & 12 four AWI plants in each



3 - Large numbers of bluebells & patches of wood anemone



4 - Areas dominated by bluebells and a small number of wood anemones



5 - Much rubbish and bare ground, but still a few AWI plants

**JAQUELIN  
FISHER**  
ASSOCIATES



Drawing Title

Priority for Soil Translocation

Scale  
1:2000 @ A3

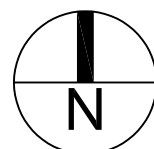
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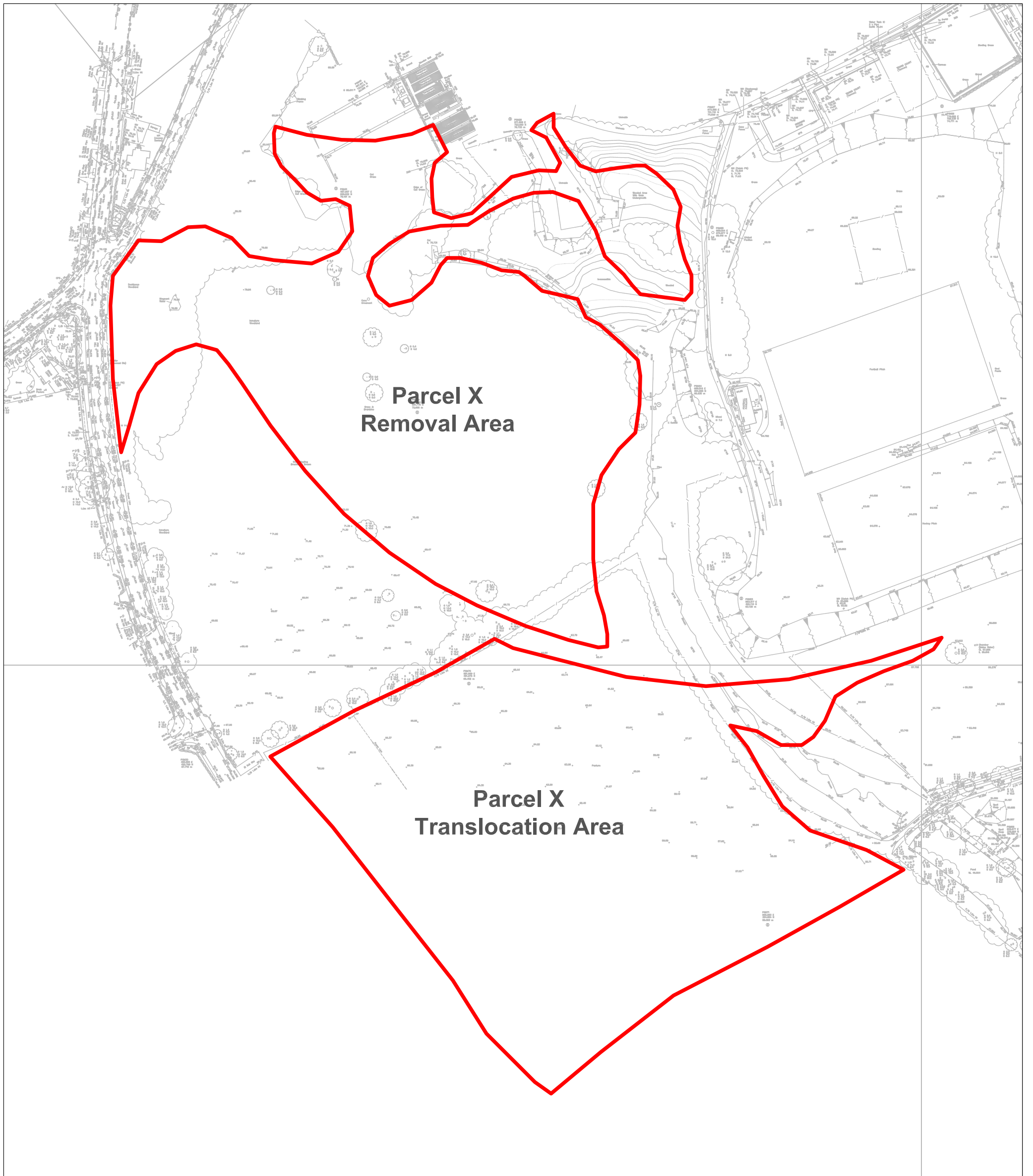
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
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Rev  
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-  Red Line Boundary
-  Finished ground level contours

**JAQUELIN  
FISHER**  
ASSOCIATES



Drawing Title

**Map 6: Finished ground levels in dense woodland,  
Parcel x**

Scale  
**1:2500**

Drawn  
**JEG**

Date  
October 2005

Job Number  
WS 1184

Drawing Number  
6

Rev  
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