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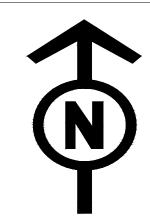
Annex 31.4 Outline Arboricultural Method Statement (Part 3 of 3)

Date	Version	Status	Description / change
01/11/2022	А	Final	First Issue
06/06/2023	В	Final	Second Issue – Clarification of requirements applicable to embedded measures in section 1.6 and 1.10 and updates to section 1.9 and 1.10 to update the impact of the Project in relation to a single tree (from 'removed' to 'affected managed') with equivalent updates to the Tree Survey Schedule (Annex 3I.2) and Tree Protection and Removal Plan (Annex 3I.3).

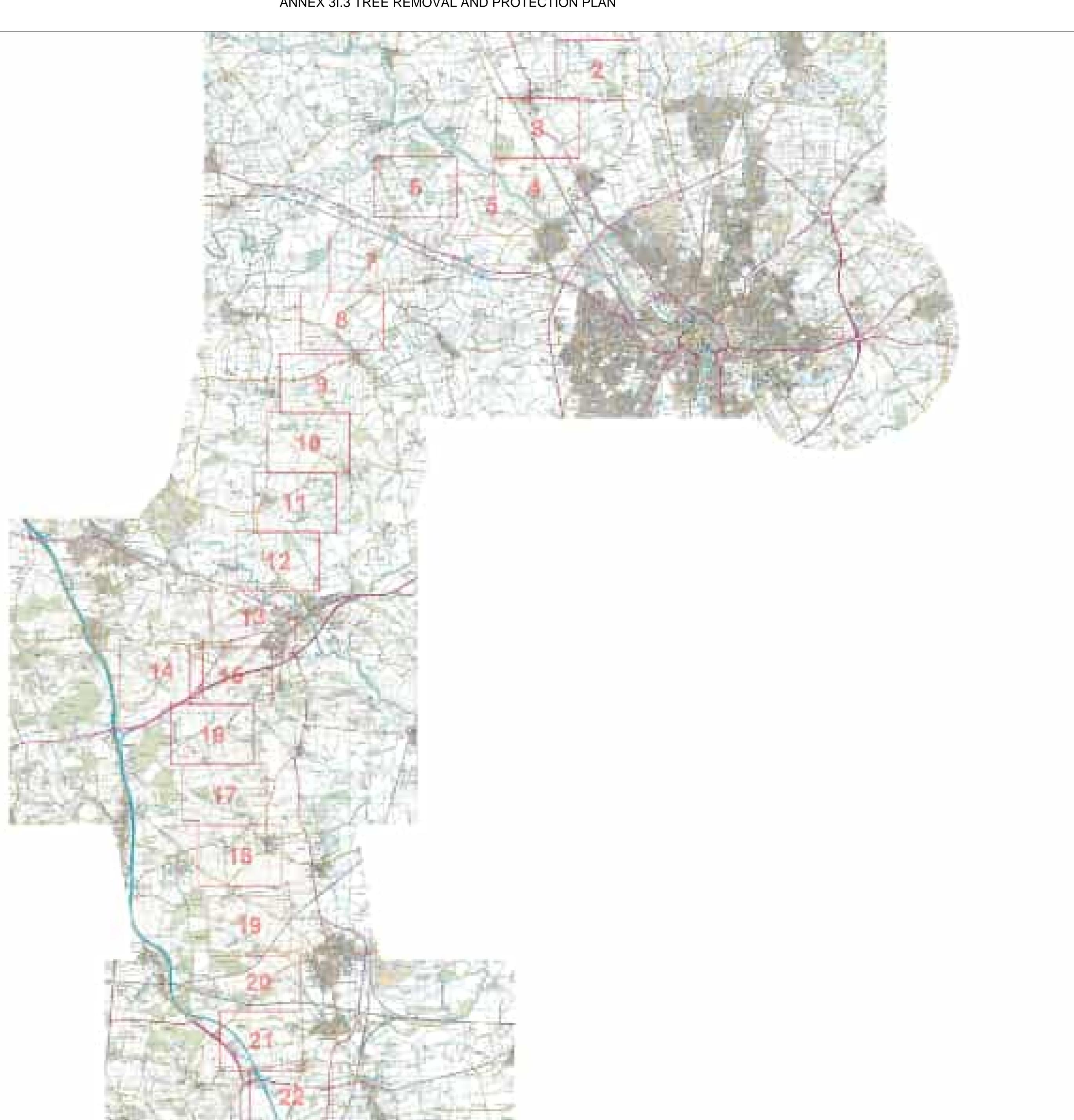
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Annex 3I.3 Tree Removal and Protection Plan

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NATIONAL GRID (YORKSHIRE GREEN ENERGY ENABLEMENT PROJECT) ORDER 5.3.3I ES APPENDIX 3I ARBORICULTURAL IMPACT ASSESSMENT ANNEX 3I.3 TREE REMOVAL AND PROTECTION PLAN



Legend

ORDER LIMITS

NOT AFFECTED (TREE/GROUP REQUIRES NO WORKS)

POTENTIALLY AFFECTED
(NO CURRENT WORK NEEDED, BUT MAY NEED TO BE REVIEWED)

AFFECTED MANAGED
(TREE/GROUP TO BE COPPICED OR CUT BACK)

(TREE/GROUP TO BE REMOVED IN PART OR IN FULL)

ROOT PROTECTION AREAS (RPA)
(AS DEFINED BY BS 5837:2012)

SURVEYED TREE CATEGORIES
(AS PER TREE CONSTRAINTS PLAN: A,B,C,U)

VETERAN TREE MARKER
(INDICATES TREE IDENTIFIED AS THAT OF VETERAN STATUS) APPROXIMATE SHADING ARC
(AS DEFINED BY BS 5837:2012)

ADDITIONAL PHASE 1 HEDGEROW SURVEY DATA (TRIMMED TO RELEVANT AREAS)

NATIONAL TREE MAP DATA
(FILTERED TO FILL IN ANY GAPS IN PRIMARY DATA)

PROPOSED DEVELOPMENT LAYOUT

(BASED UPON DRAWING REFERENCES LISTED IN THE GENERAL NOTES SECTION)

ANCIENT WOODLAND W/15M BUFFER ZONE (AREA CLASSIFIED AS AN ANCIENT WOODLAND)

AREA OF OUTSTANDING NATURAL BEAUTY
(CLASSIFIED AS AN AREA OF OUTSTANDING NATURAL BEAUTY [AONB])

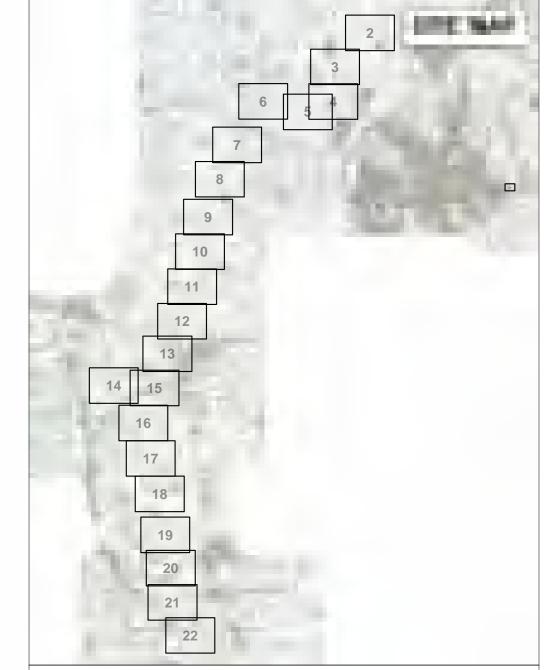
CONSERVATION AREA

(AREA CLASSIFIED AS A CONSERVATION AREA)

NATURE RESERVE
(AREA CLASSIFIED AS A LOCAL OR NATIONAL NATURE RESERVE)

TREE PRESERVATION ORDER
(AREA COVERED BY A TREE PRESERVATION ORDER [TPO])

This drawing is scaled at paper size A0, therefore any prints taken at smaller sizes will affect accuracy of the measurement units and should not be scaled against.
 Tree categories as defined by BS 5837:2012
 Tree locations are based on the os mapping, aerial imagery, National Tree Map data (BlueSky International Ltd), and gps co-ordinates from on site walkover.
 Plans should be read in conjunction with the Arboricultural Impact Assessment.
 The original of this drawing was produced in colour - a monochrome copy should not be relied upon.



Coordinate System: British National Grid Sheet X Centroid Coordinate: 452828 Sheet Y Centroid Coordinate: 444453

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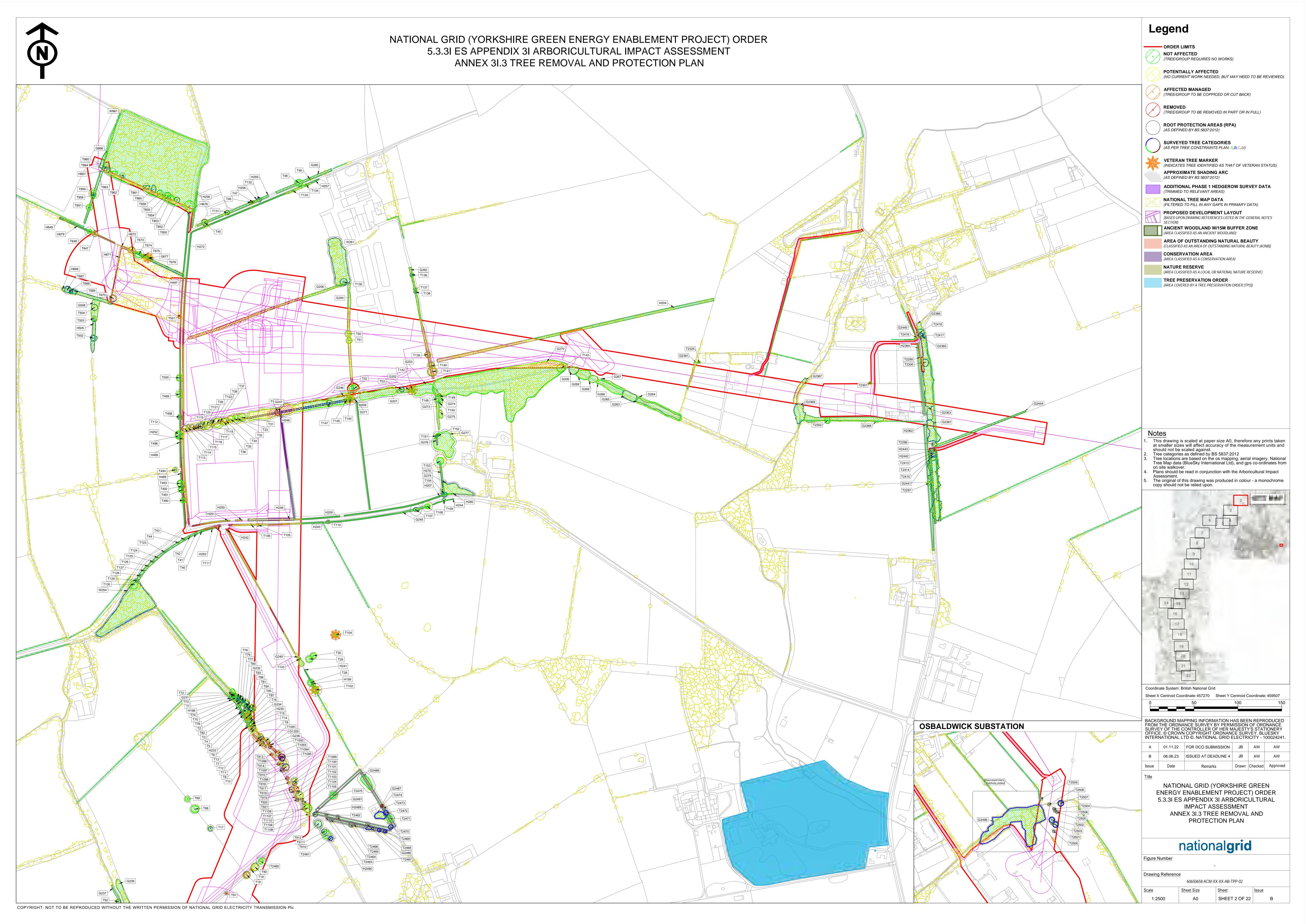
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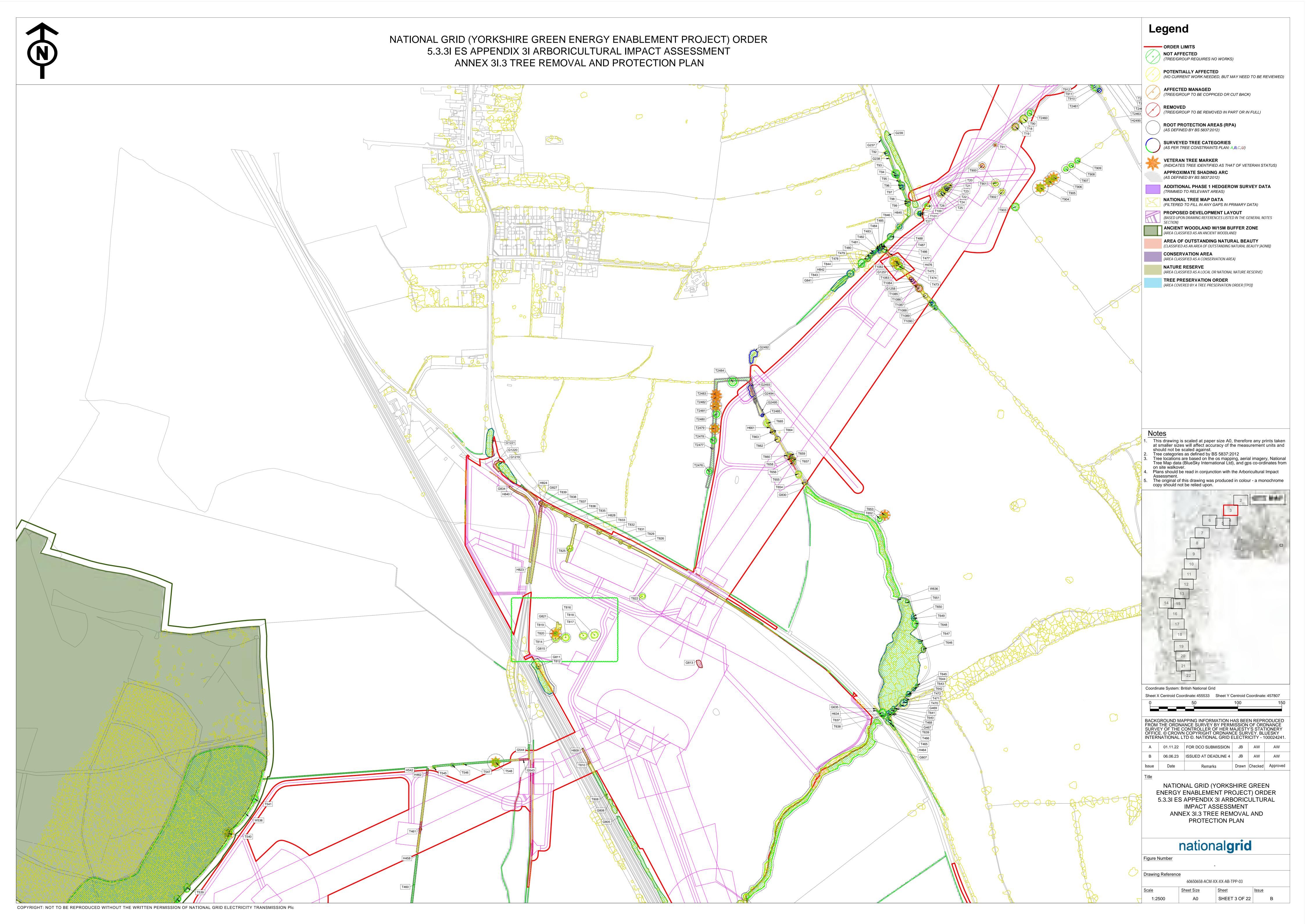
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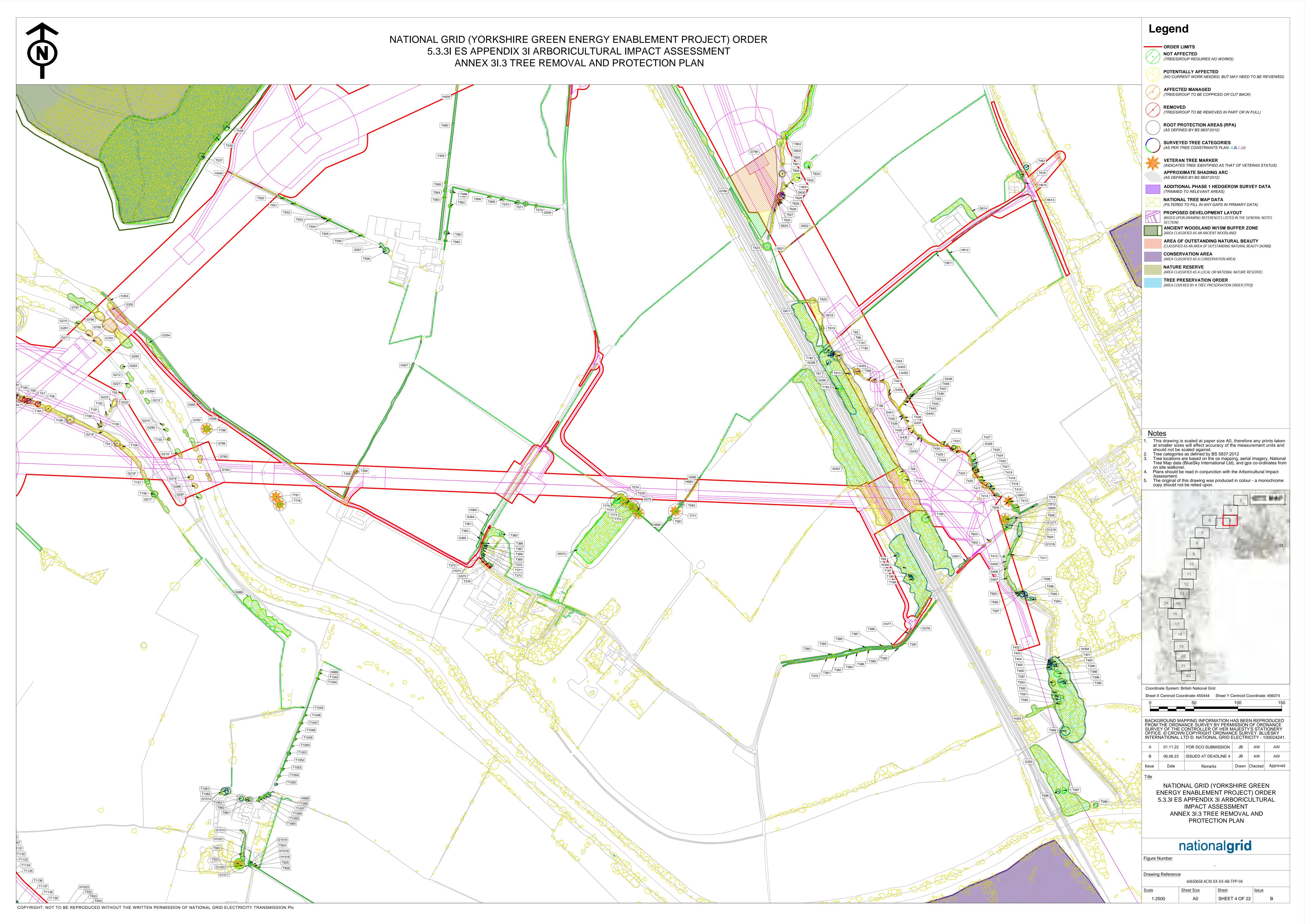
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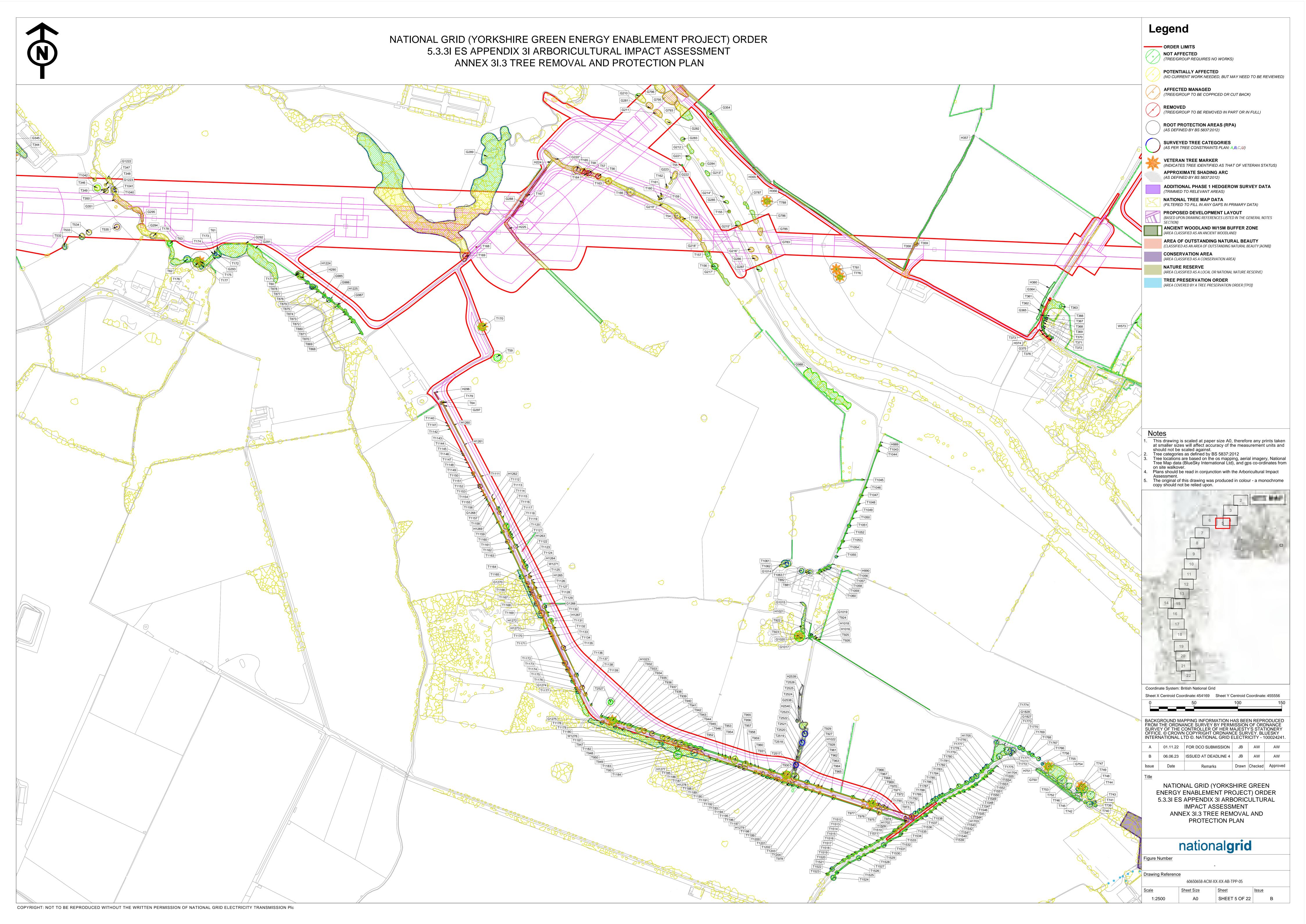
nationalgrid

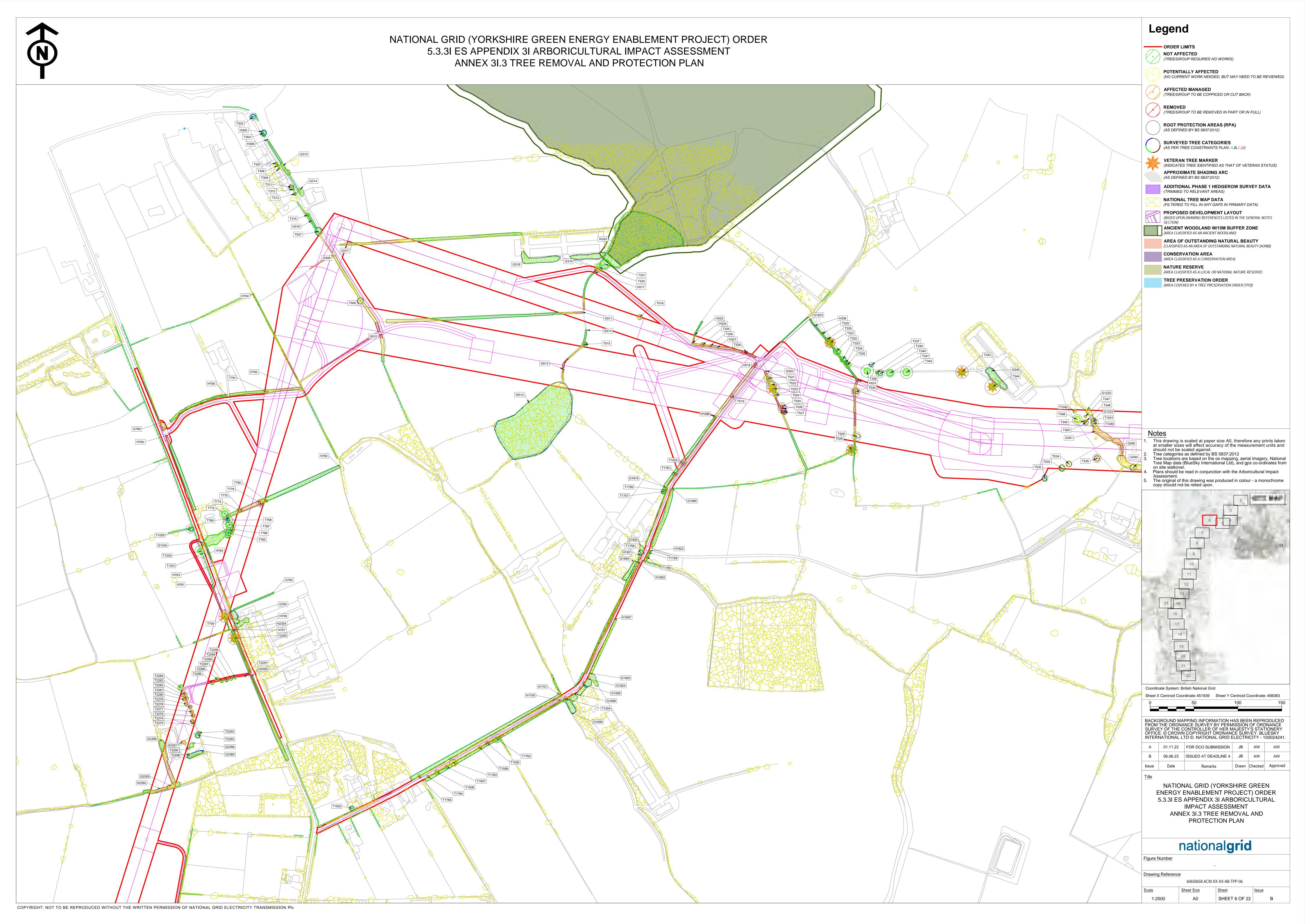
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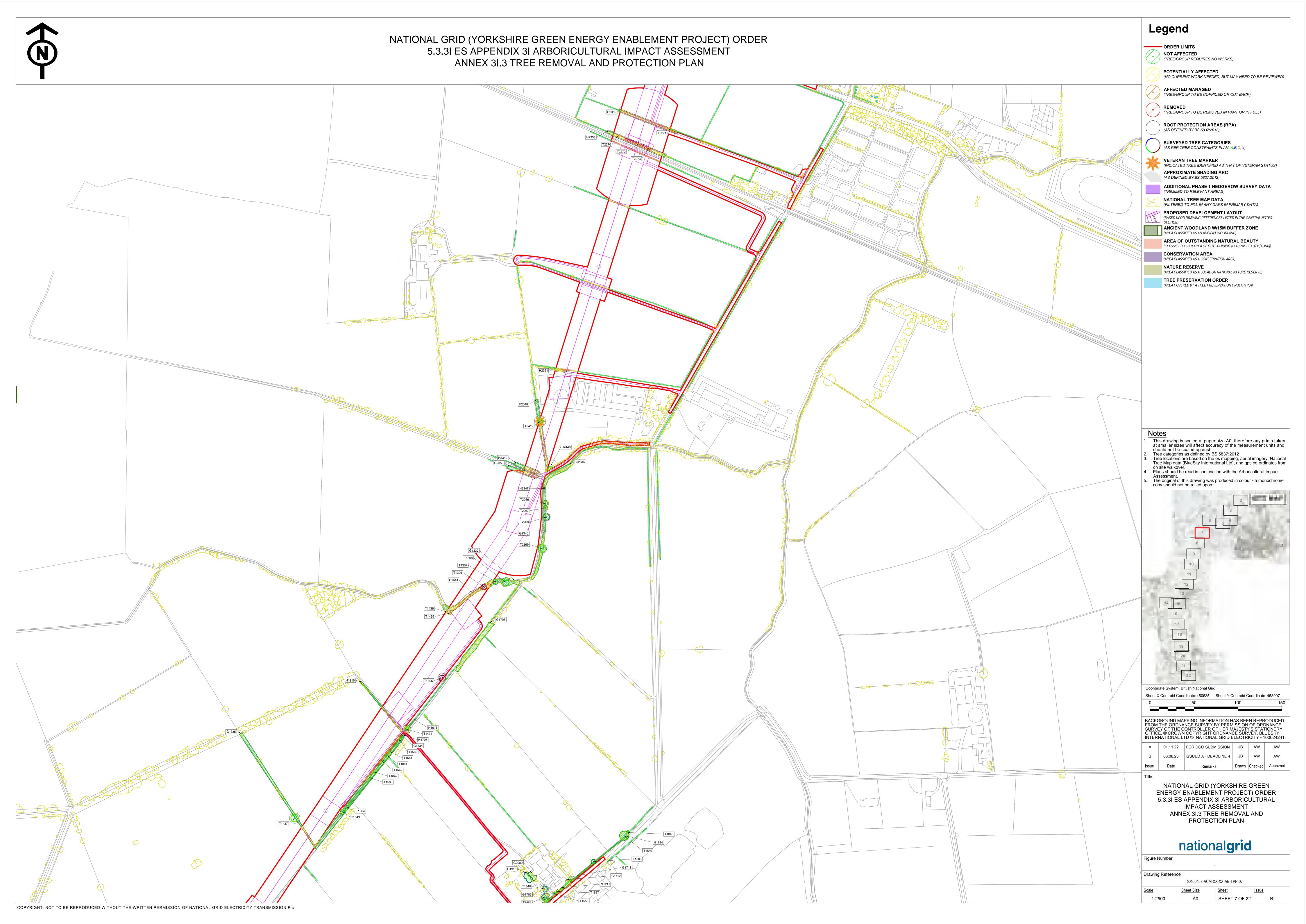


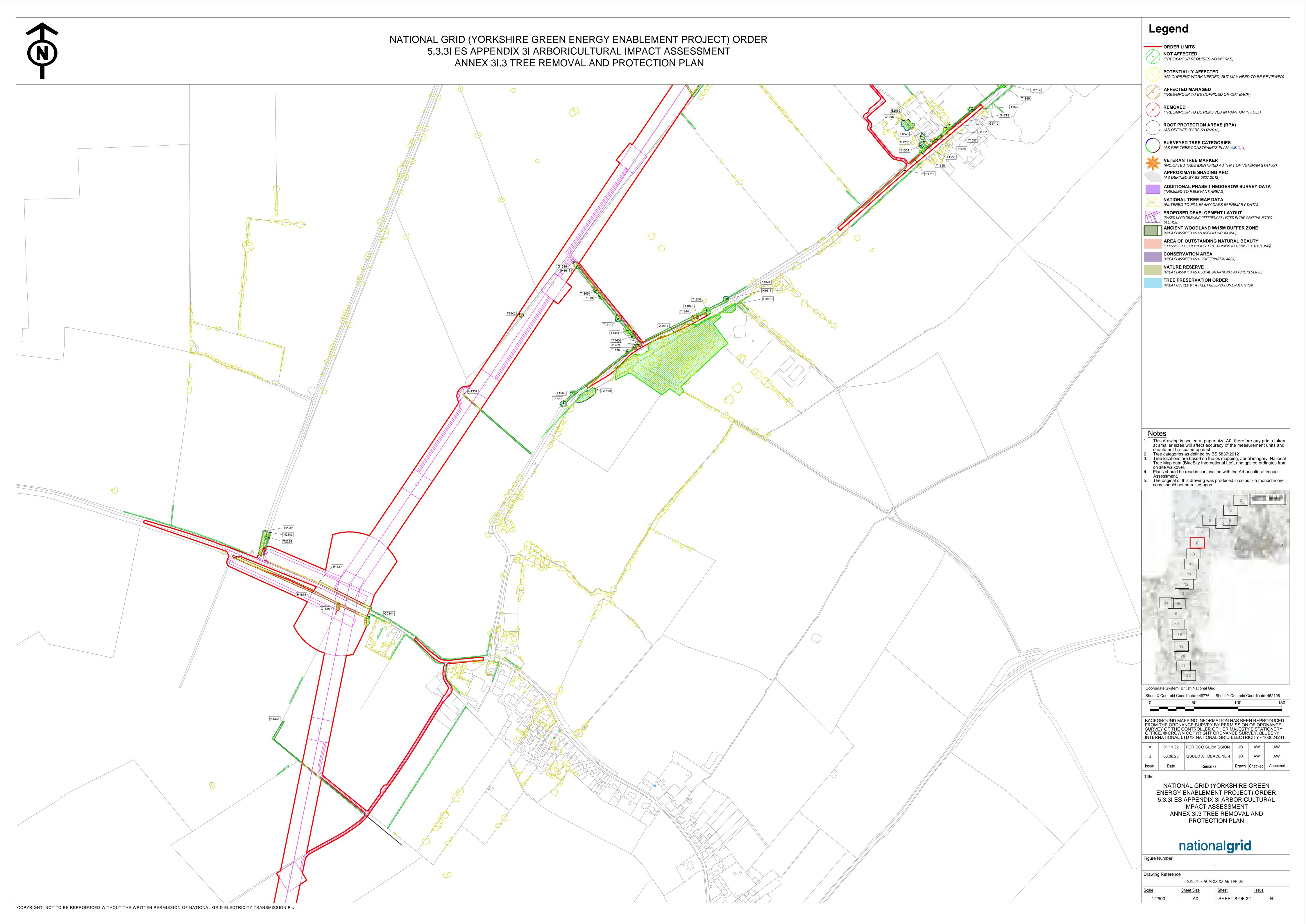


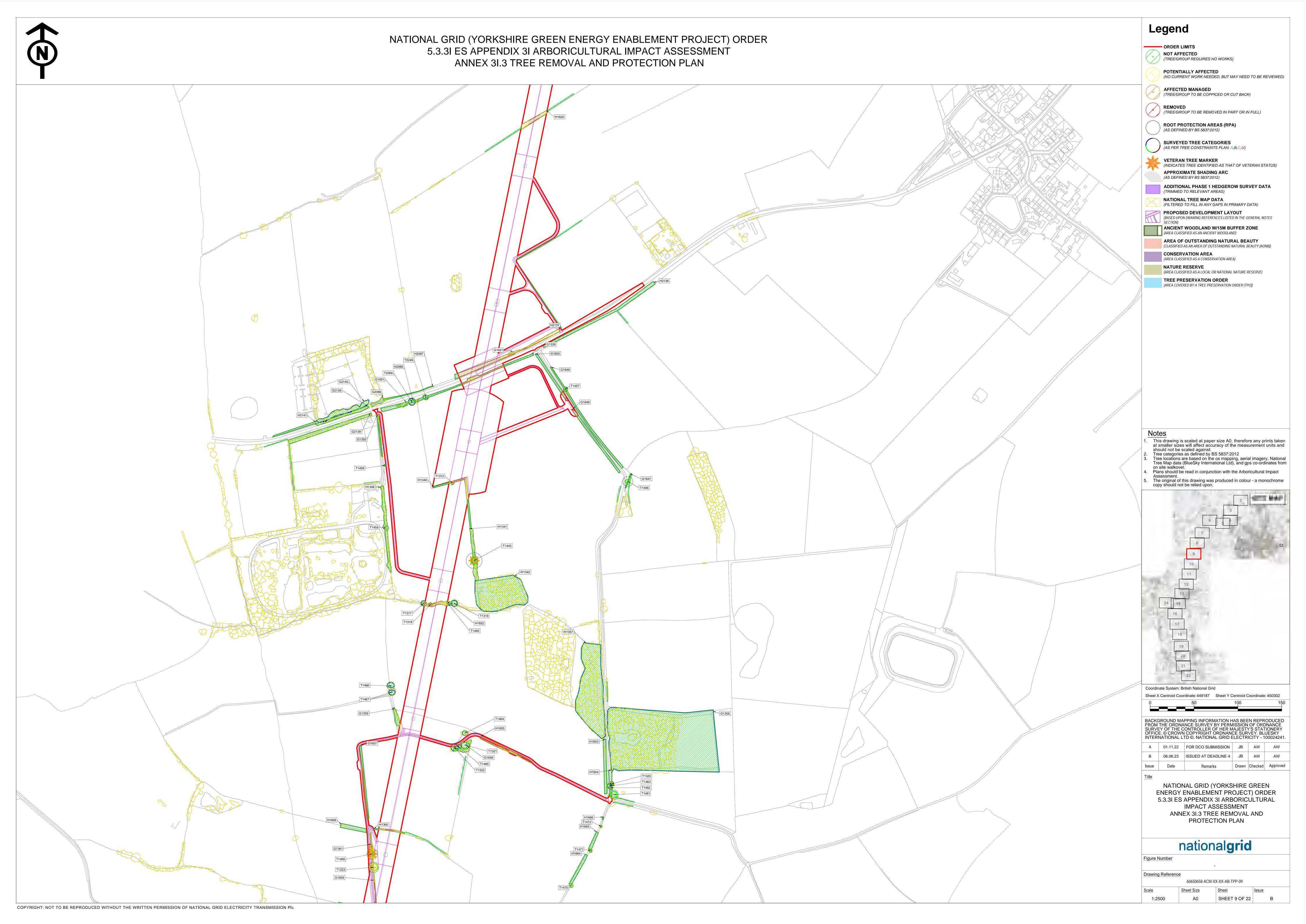


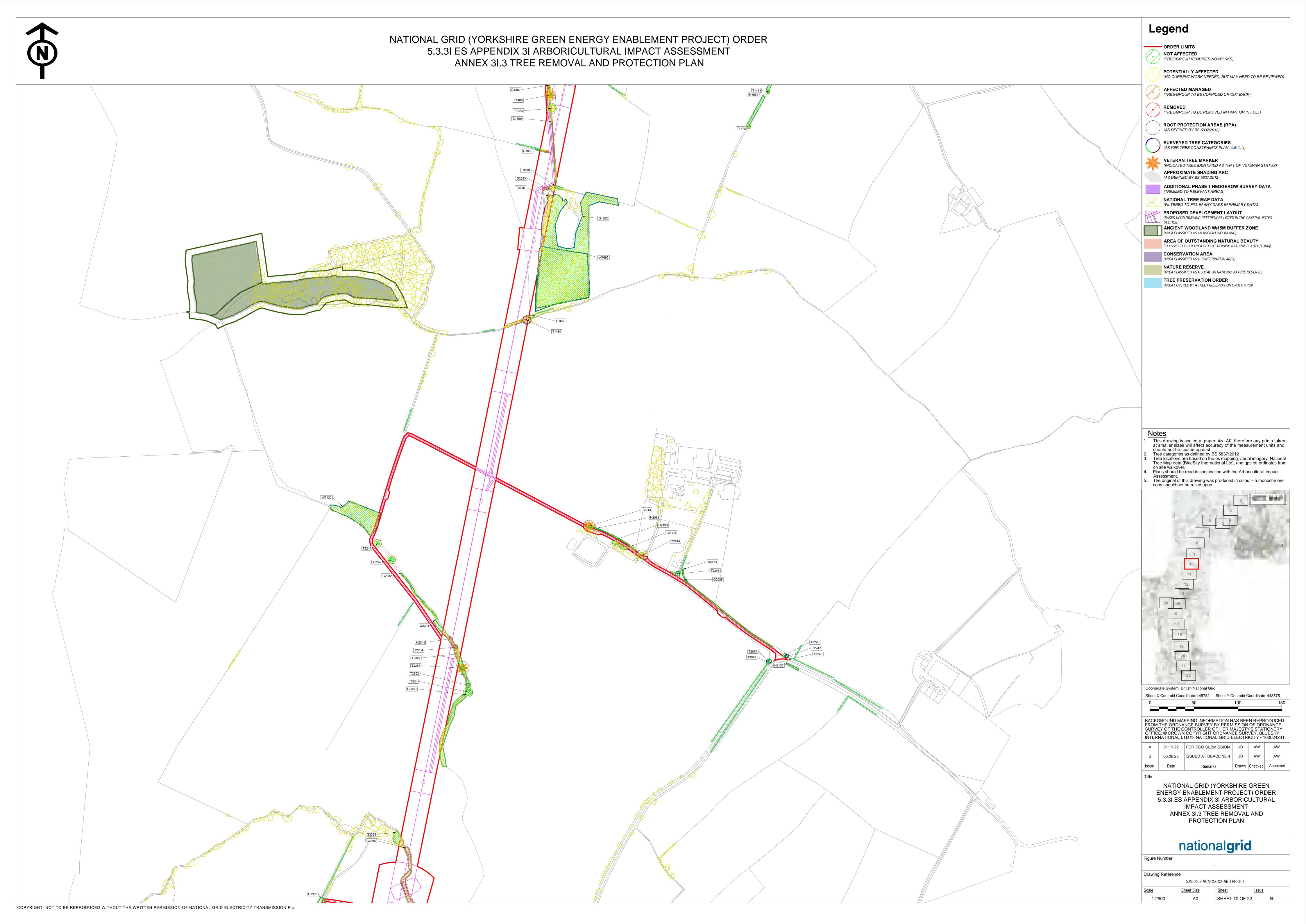


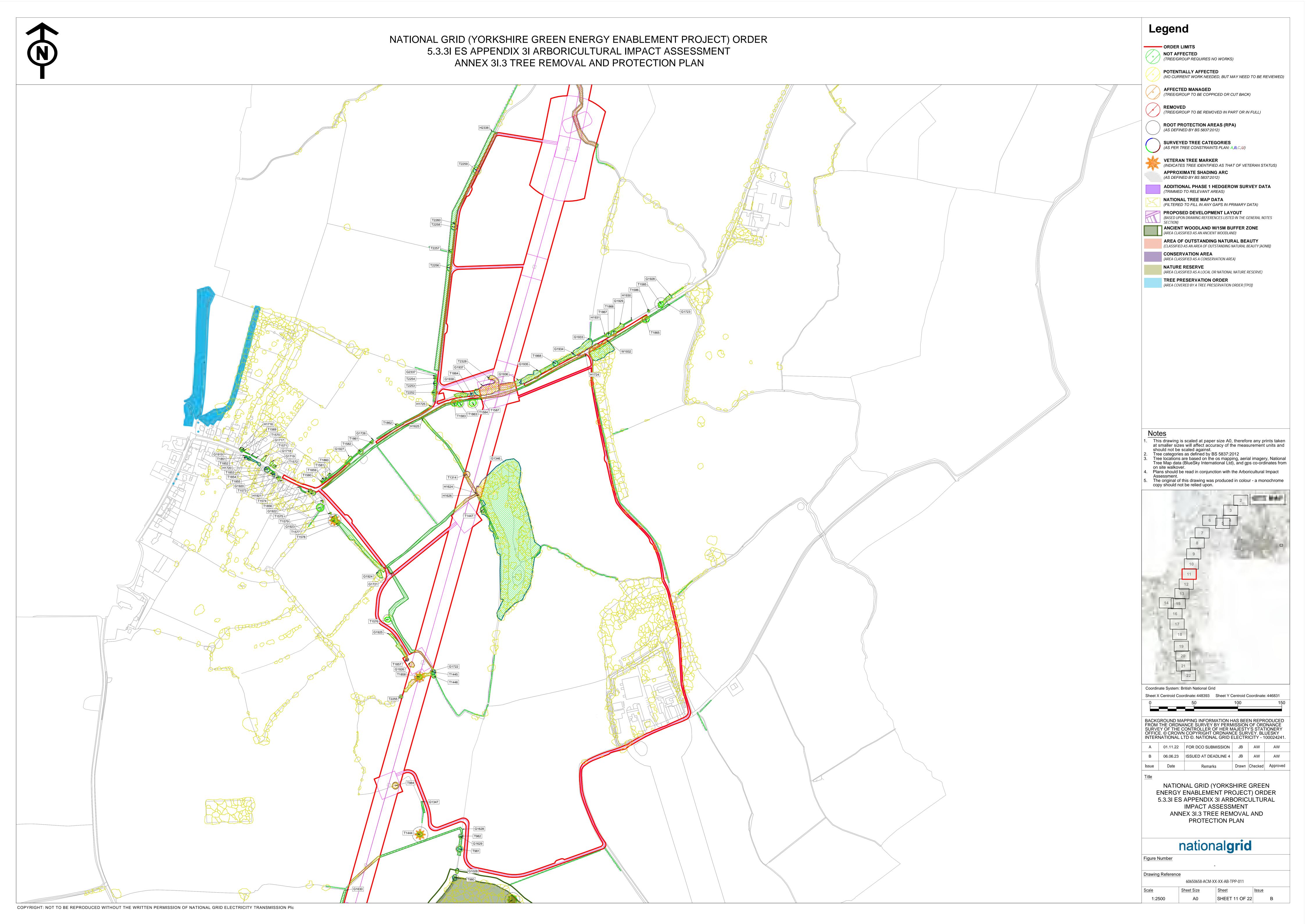


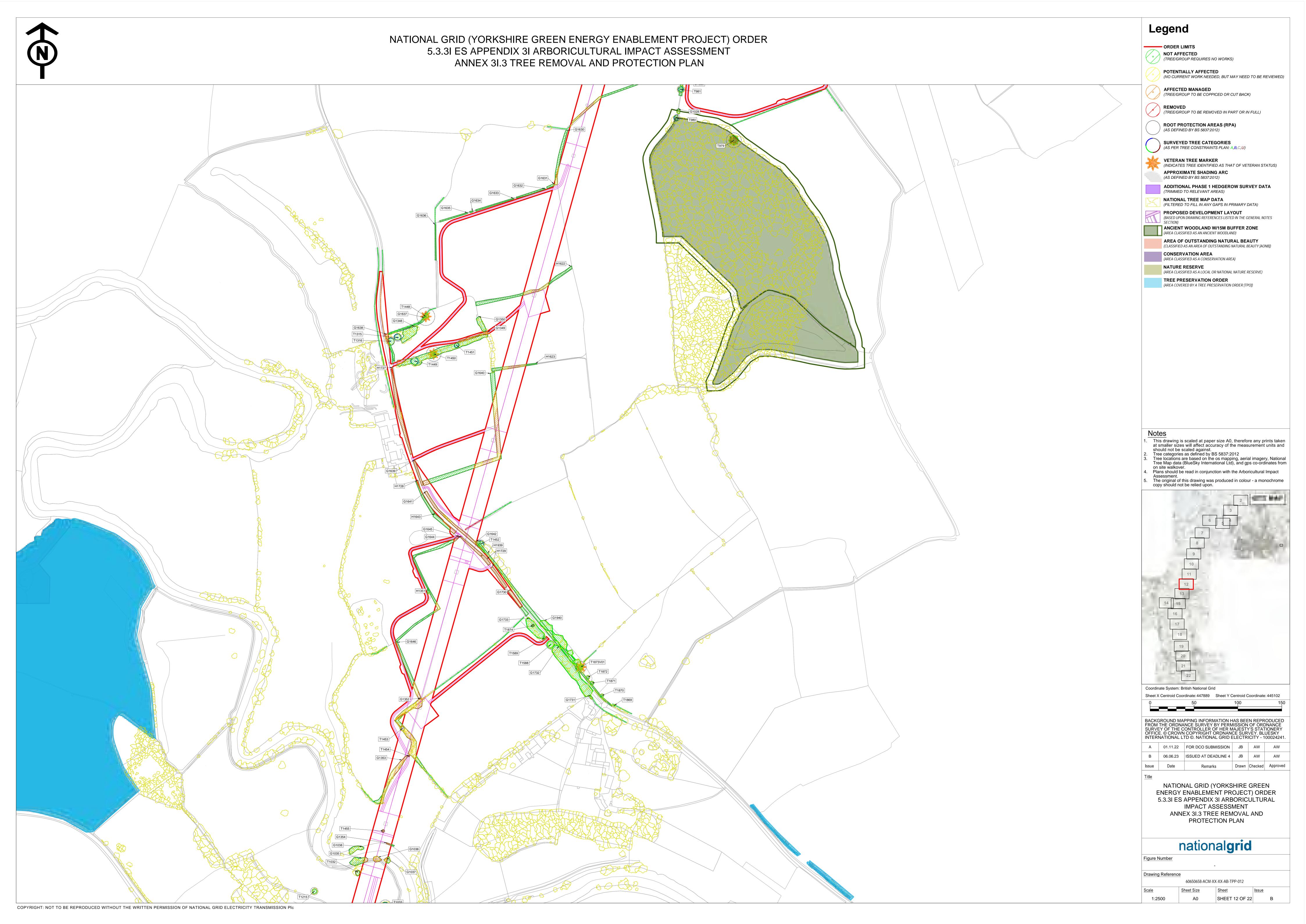


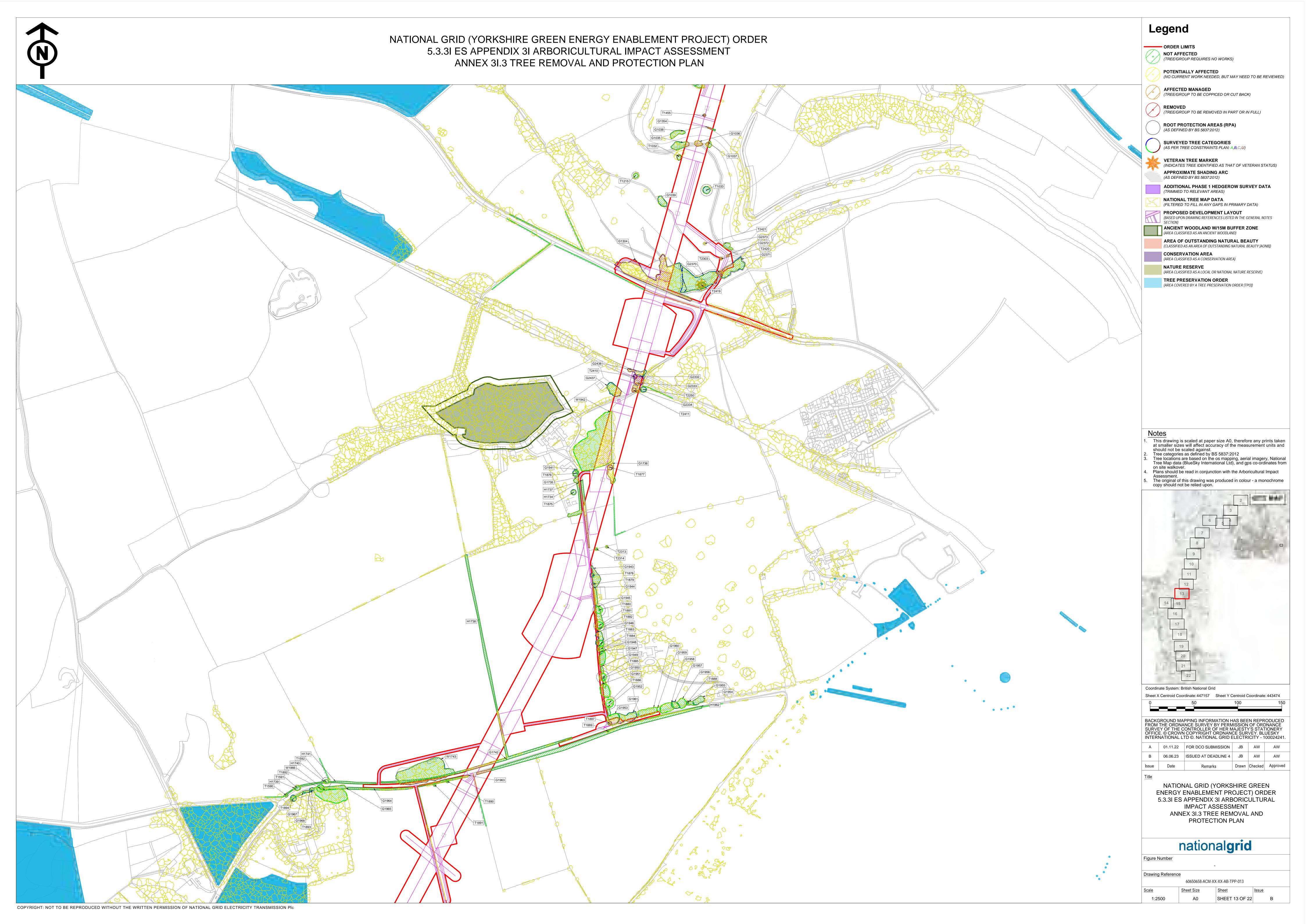


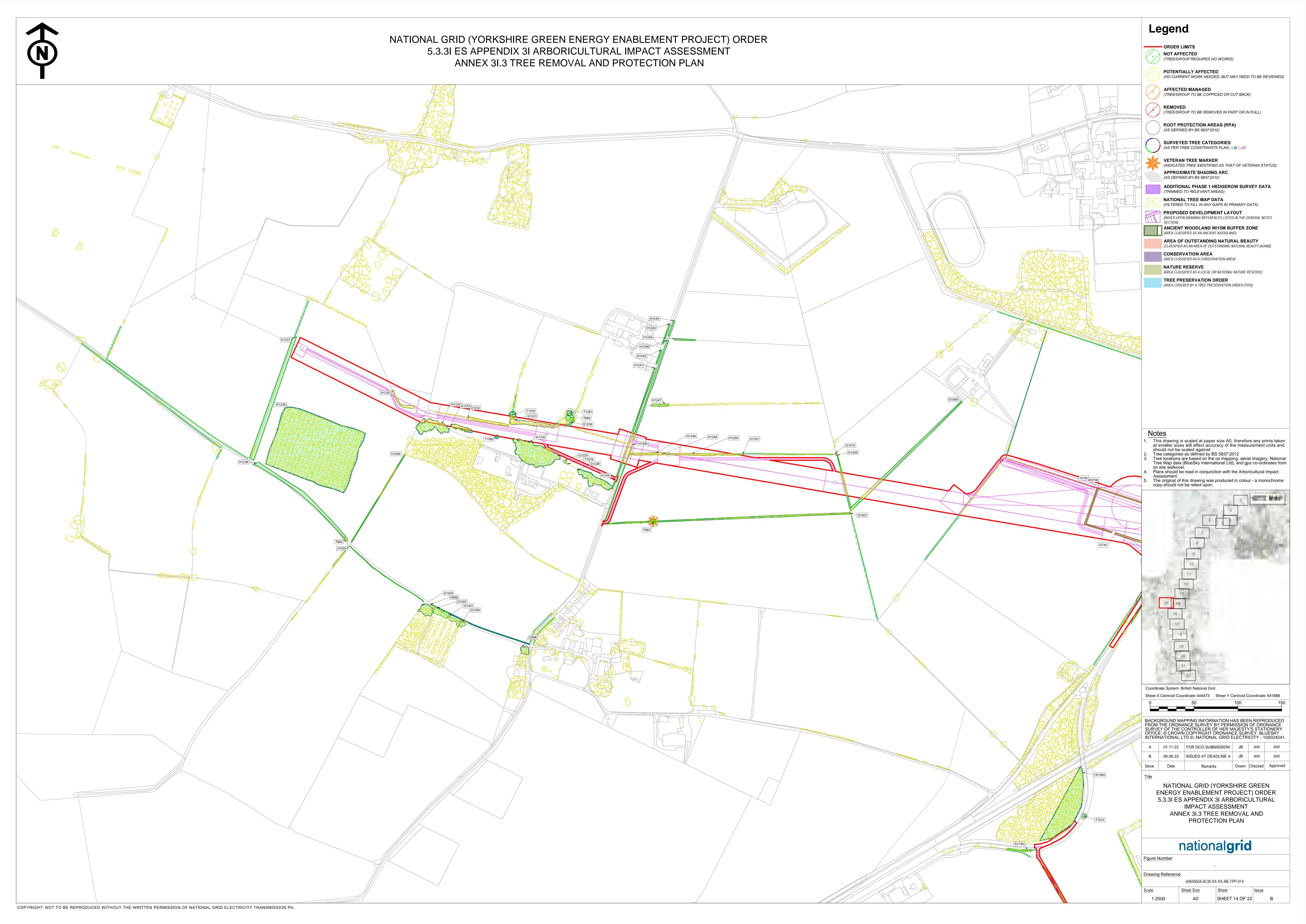


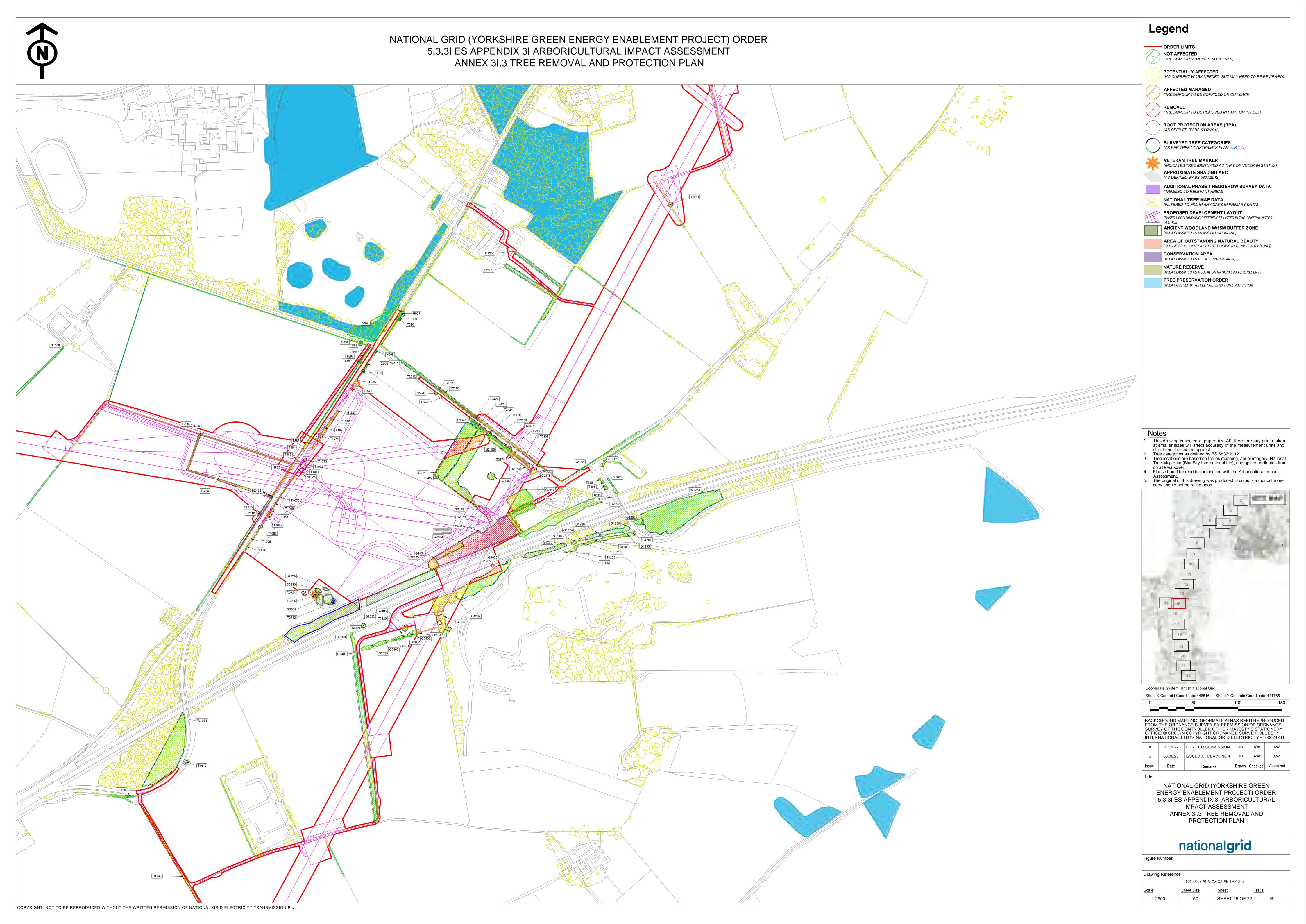


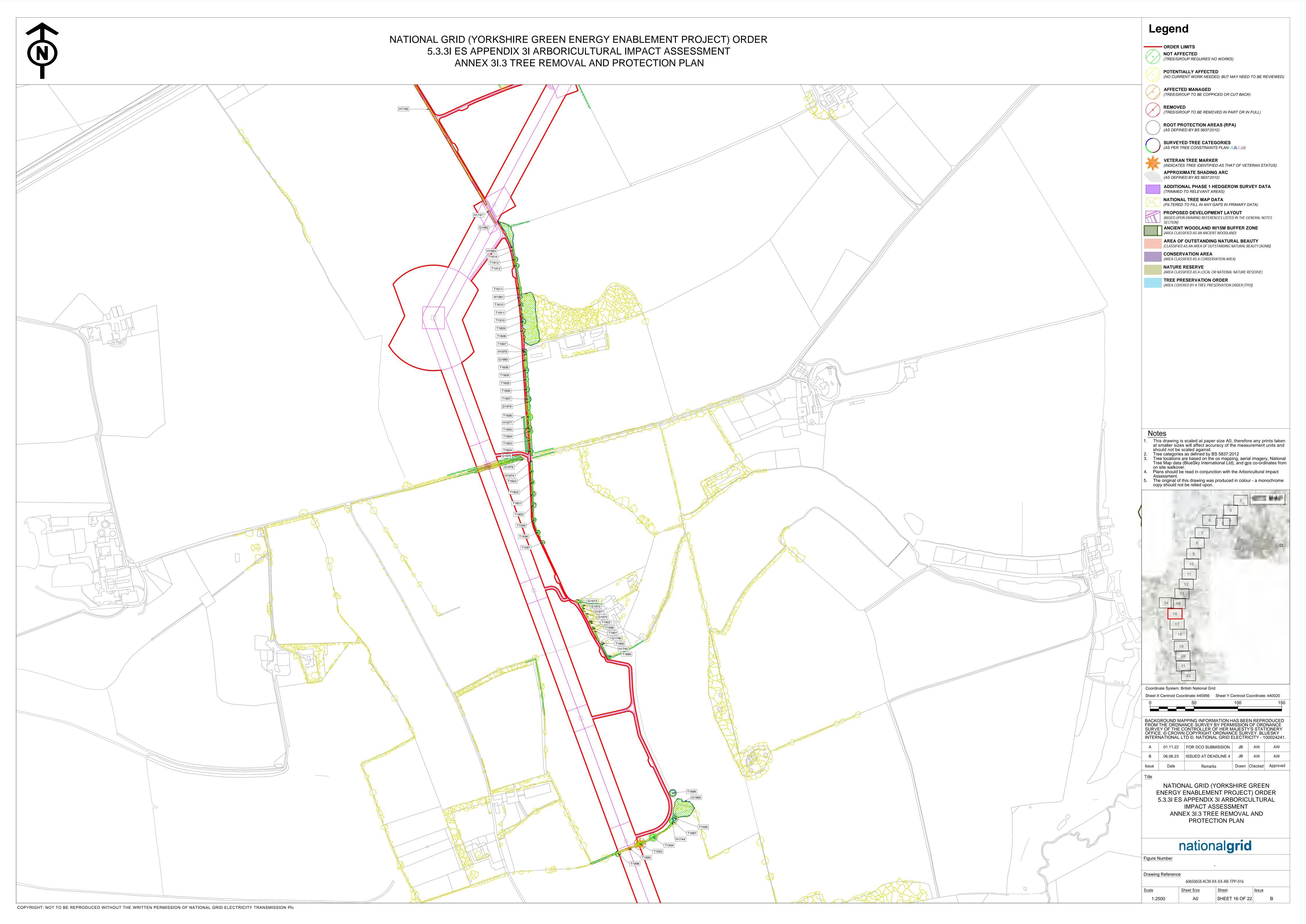


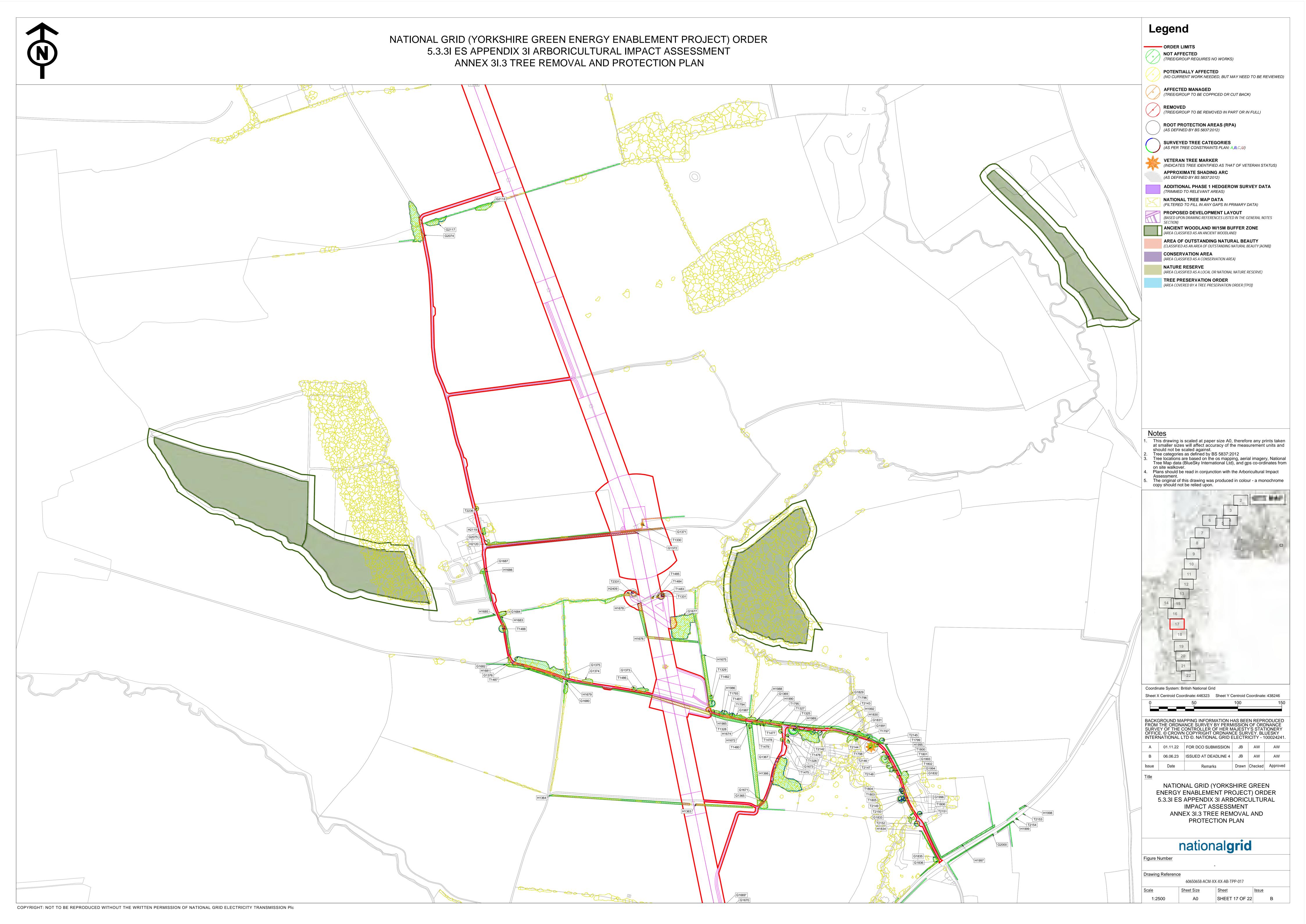


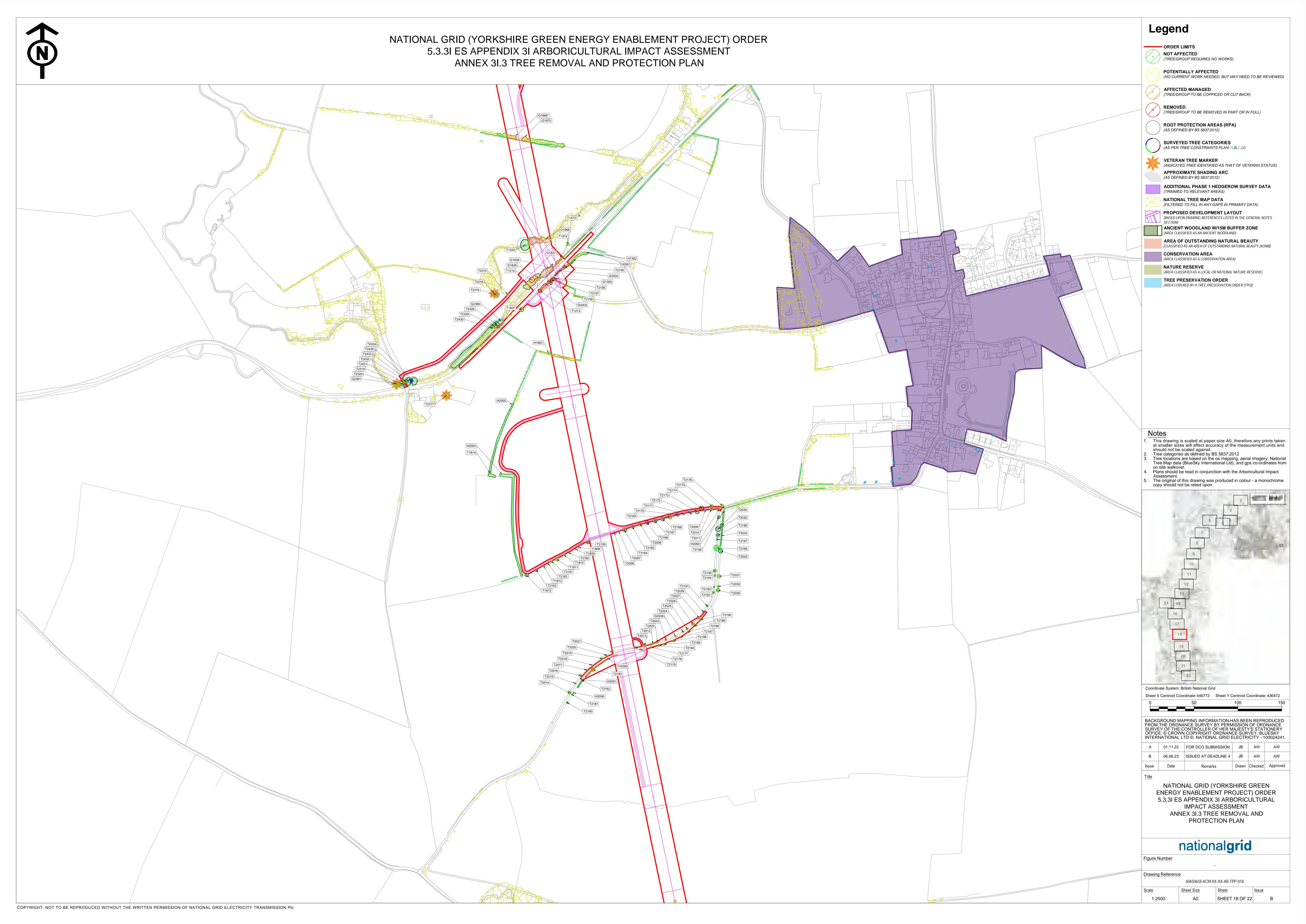


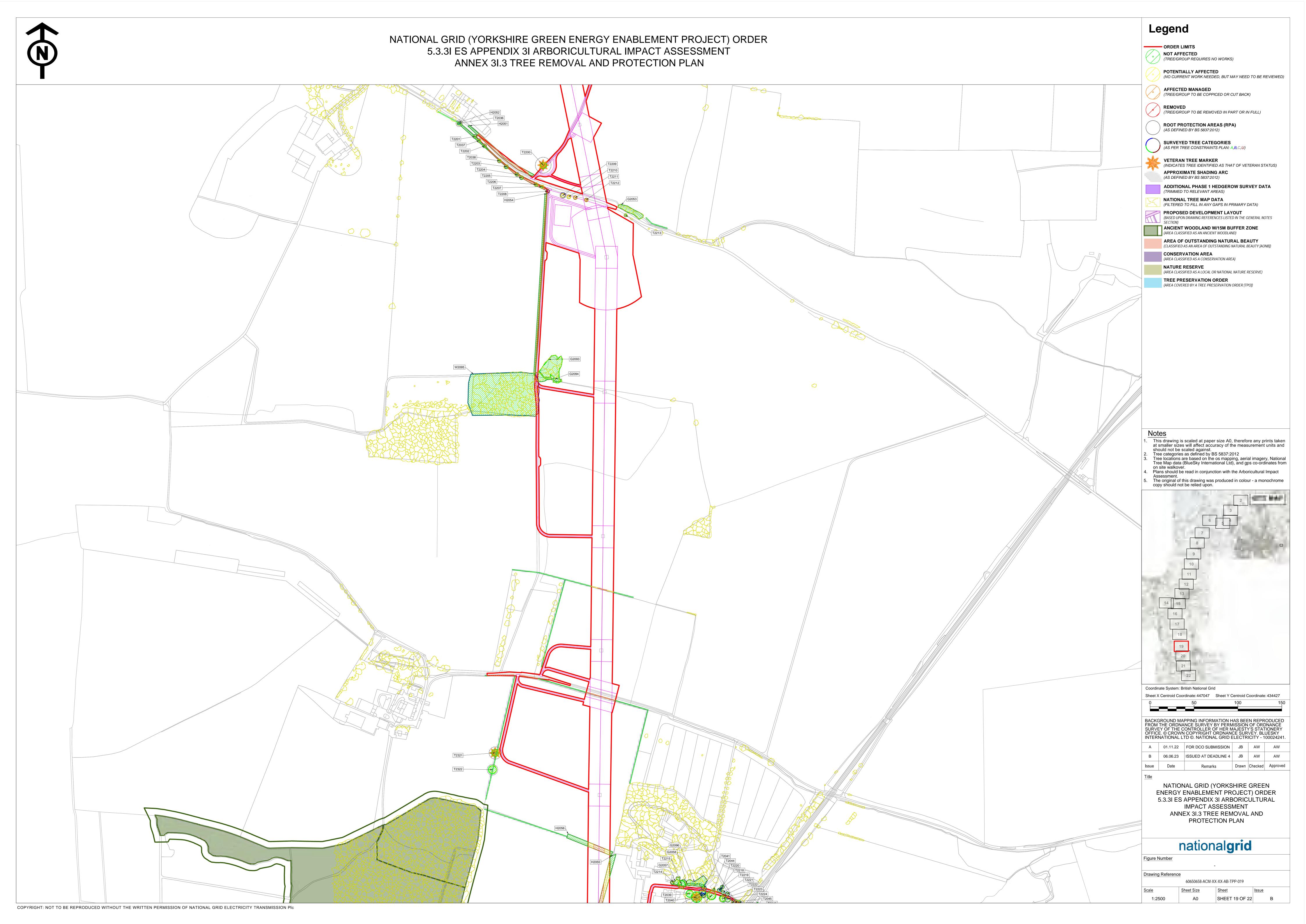


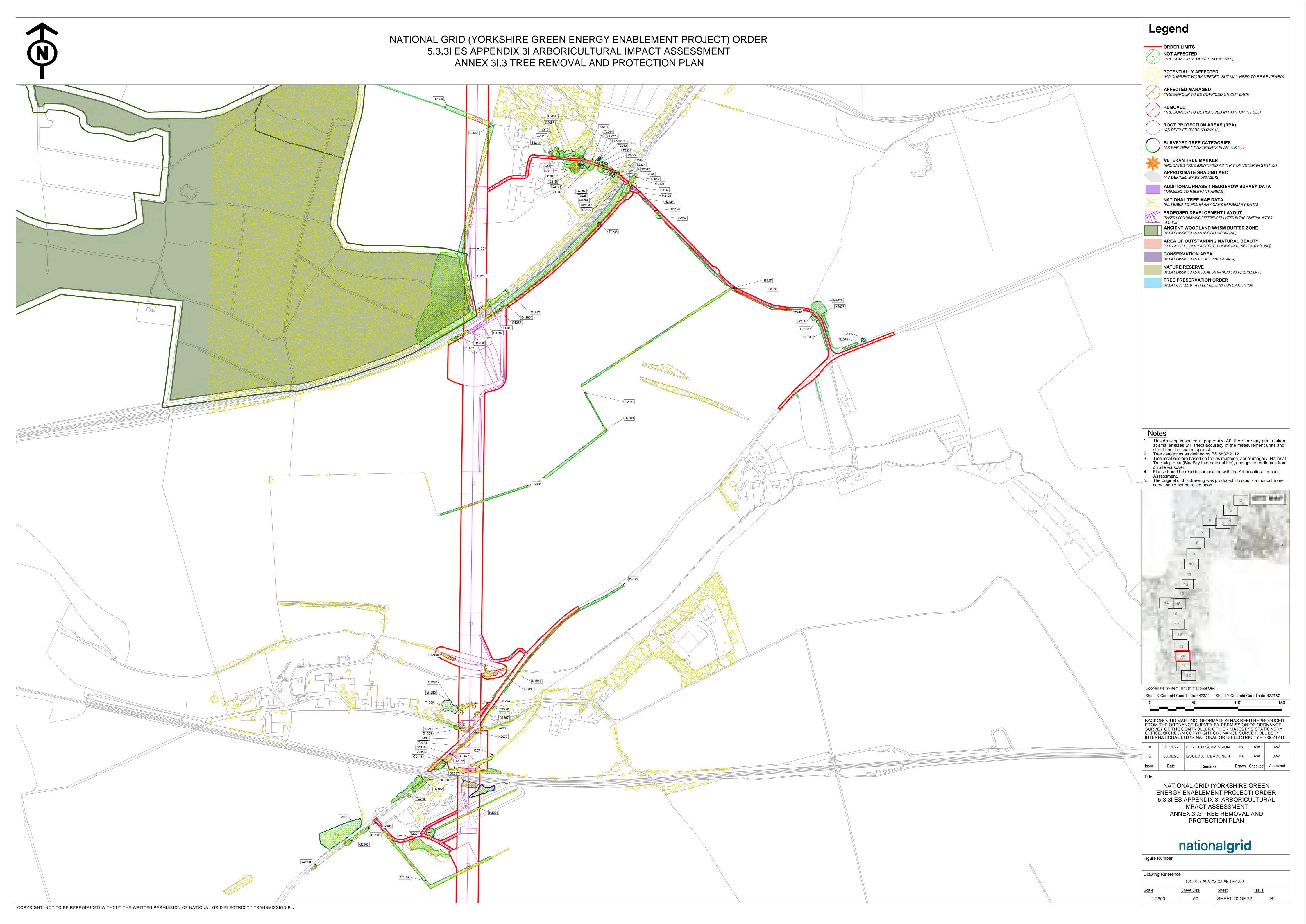


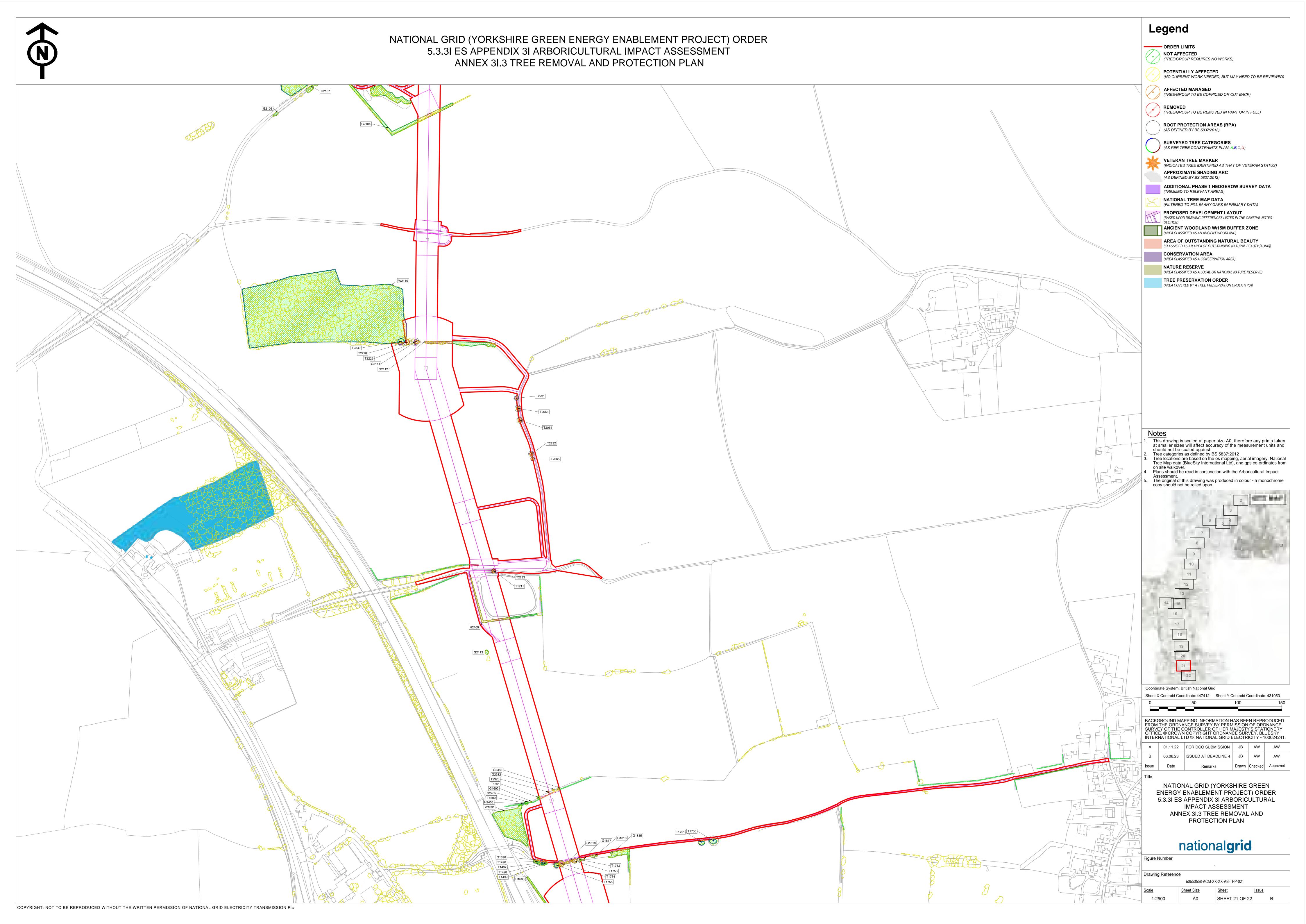


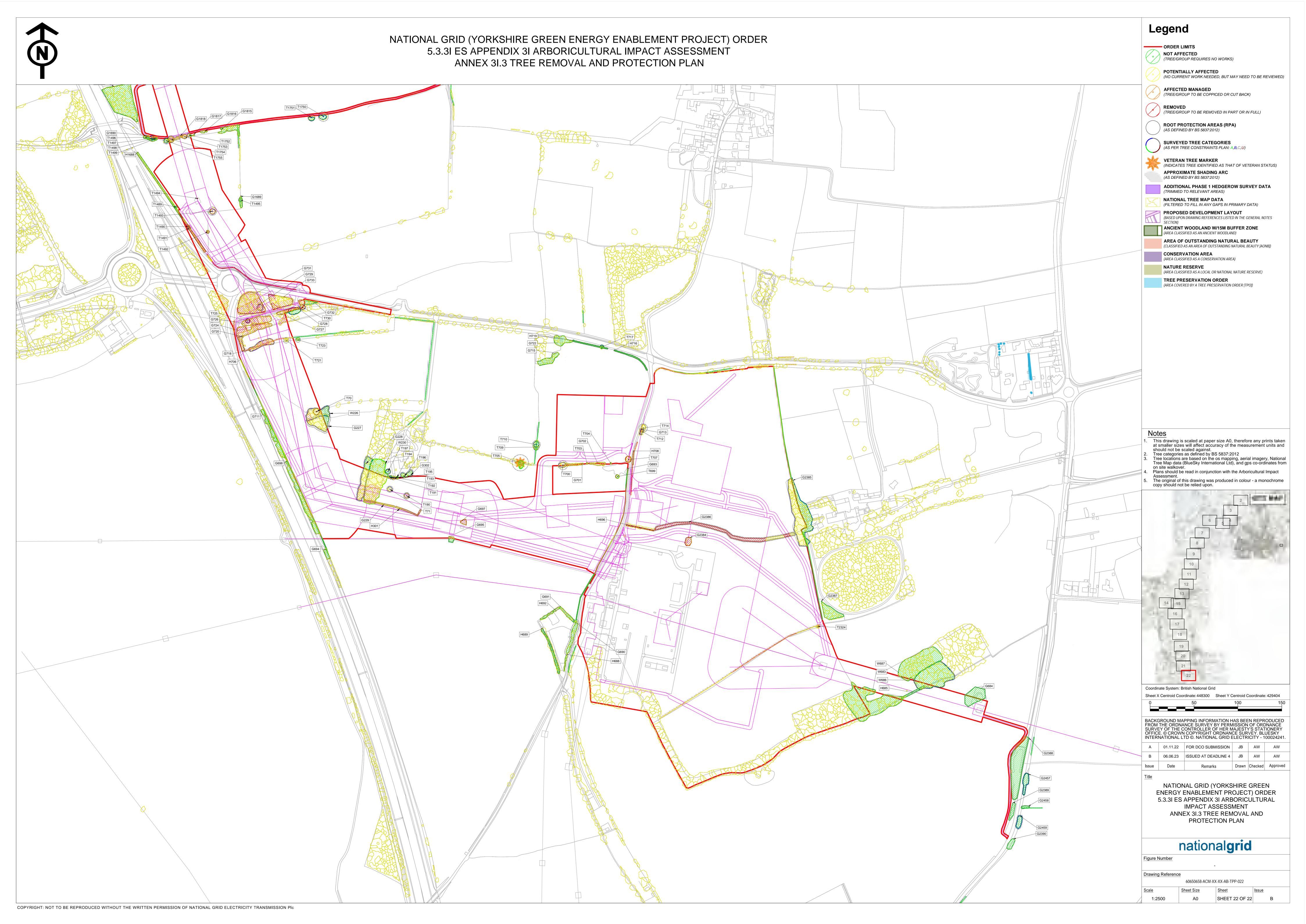












Annex 3I.4 Outline Arboricultural Method Statement

Introduction

- 1.10.12 This outline Arboricultural Method Statement details the specification for tree protection measures and how sensitive operations are to be achieved in close proximity to tree features (to include individual trees, tree groups, woodlands and hedges) to be retained. It also addresses the general management of site activities to ensure that retained trees are not inadvertently damaged.
- 1.10.13 This document may need to be amended to reflect more detailed or updated information as it becomes available. The final agreed version must be read in conjunction with the Tree Protection and Removal Plan (Annex 3I.3) and copies of both documents must be permanently available on site for reference throughout the development. All site personnel must be made fully aware of its contents and the implications for work they may be involved in. All elements of the agreed Method Statement must be adhered to in full.

Pre commencement meeting

1.10.14 Prior to the commencement of works on site, a meeting must take place including the Site Manager/Contractor, Arboriculturist and Local Authority Tree Officer (where required). This meeting will allow a further discussion of the programme of works, tree protection measures and the agreement of any changes to the Method Statement which will then be formally updated and approved as required.

Order of operations

- Re-assessment/refinement of tree impact assessment following detailed design to reduce tree clearance or pruning requirements;
- Updates to outline Arboricultural Method Statement and Tree Protection Plan;
- Pre commencement Site meeting;
- Preliminary tree works;
- Site briefing for Site personnel;
- Installation of protective fencing and/or ground protection;
- Enabling works, access routes;
- Re adjustment of protective fencing and ground protection as required;
- Construction operations;
- Re adjustment of protective fencing and ground protection as required;
- Installation of services;
- Site signed off on agreed completion of significant development works;
- Dismantling of tree protection measures; and

Soft landscaping works within the Root Protection Area (RPA) of retained trees.

Preliminary tree works

- 1.10.15 A preliminary tree works specification for tree felling or pruning likely to be required to facilitate the Project is included in **Annex 3I.2**. The specification for pruning will be updated/refined to reflect the final detailed design and adopted working methods.
- 1.10.16 All tree works are to be completed by suitably qualified and insured contractors and must take place before protective fencing is installed and any site works begin in that location.
- 1.10.17 The final extent of tree removal is to be confirmed following detailed design and may require on site assessment by an Arboriculturist. Where possible trees will be coppiced or pollarded rather than being completely removed.
- 1.10.18 All tree works must be carried out in line with the principles of BS3998: 2010 Tree work recommendations²⁵ and be conducted in such a way that no damage is caused to any tree to be retained. The tree works contractor must avoid the production of ruts on unmade ground.
- 1.10.19 Contractors must comply with biosecurity best practice such as the Arboricultural Association Guidance Note 2 Application of Biosecurity in Arboriculture²⁸ including the cleaning of equipment and vehicles to ensure any tree diseases are not spread or introduced.
- 1.10.20 Where part of a tree group is to be removed the remaining trees must be checked by an arboriculturist immediately following site clearance works to check the stability and suitability of retained features.
- 1.10.21 If further additional tree works are deemed to be required during the development the advice of an arboriculturist is to be obtained. No works are to take place without the consent of the tree owner.
- 1.10.22 Prior to the commencement of any tree works a thorough check for protected species (including nesting birds, bats and badgers) is to be undertaken by a suitably qualified ecologist. If evidence of any protected species is discovered their advice must be obtained. Tree works are to be undertaken outside of the typical nesting bird season (which is notionally March to September) outside of this period any individual trees will be inspected for evidence of nesting birds by a suitably qualified person prior to works being carried out.

Site briefing

1.10.23 The Site Manager is responsible for ensuring that all personnel are made fully aware of the constraints posed by retained trees within the working area of the operatives activities on site and the measures in place to ensure they are protected, including having full on-site access to the Arboricultural Method Statement and Tree Protection and Removal Plan (TPP). It is good practice for the Site Arboriculturist to be involved in the site briefing to ensure all constraints and tree protection measures are clearly understood.

Site monitoring

- 1.10.24 An auditable system of site monitoring shall be established to guide contractors on site, ensure that tree protection measures are implemented and adhered to and to demonstrate that any tree protection requirements have been met satisfactorily.
- 1.10.25 This includes site visits by the Site Arboriculturist and/or suitably trained Ecological Clerk of Works (ECoW) to confirm the correct installation of protective fencing, to oversee sensitive elements of works within the RPA of retained trees and to sign off the site when works are complete before fencing can be dismantled.
- 1.10.26 The frequency of specialist arboricultural site monitoring will be agreed in writing before works begin on site (but is recommended to be every four to six weeks in addition to ad hoc monitoring of particularly sensitive operations near retained trees as required).

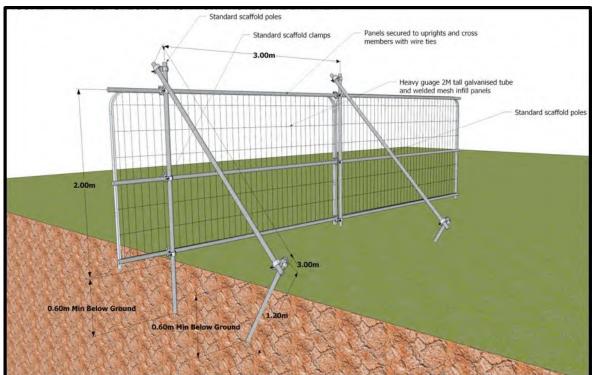
Tool box talk

1.10.27 A Tool Box Talk should be provided to site workers to highlight the need for safe driving of plant and working within the defined corridor to ensure that accidents and resulting potential damage to trees not covered by tree protection measures are eliminated. A copy of the TPP should be used in the process of explaining to all personal the requirements required to ensure retained trees are not damaged and copies of both the TPP and this Outline Method Statement (or subsequent detailed version) must be available in the site office at all times.

Protective fencing

- 1.10.28 The default position as set out by BS 5837:2012¹³ is that retained trees must be protected from construction operations with the erection of robust protective fencing positioned on the outer edge of the RPA or crown spread (whichever is greatest). All site operations will be restricted to the area outside of tree protection fencing and this area will form a Construction Exclusion Zone (CEZ) unless agreed otherwise. Protection measures will be installed to protect all retained trees.
- 1.10.29 The area inside the fence and any additional tree protection measures will be observed and must not be removed or altered without the prior approval of the Arboriculturist. Any damage to tree protection measures must be reported immediately.
- 1.10.30 Fencing shall be constructed with robust vertical and horizontal scaffold framework with weldmesh panels firmly attached in accordance with BS 5837:2012 Figure 2. Vertical support poles and bracing poles must be located with care to avoid underground utility services and will be sited to avoid the structural roots of retained trees.
- 1.10.31 Alternative equivalent specifications for tree protection are also likely to be acceptable. In areas where the risk of tree damage is significantly reduced less formal barriers can be replaced with more visual alternatives such as hi visibility barrier tape secured with pins or posts. This will be specified in detail following the detailed design and when the Arboricultural Method Statement is finalised prior to commencement.

Figure 1 - Default specification for tree protection barrier in accordance with BS5837:2012 figure 2.



- 1.10.32 Suitable all-weather signage will be fixed to fencing to notify site staff and visitors of the construction exclusion zone and its purpose.
- 1.10.33 When entering and exiting the site the fencing contractor must avoid the production of ruts on the unprotected surface of the ground.
- 1.10.34 Protective fencing and ground protection shall stay in place until all construction operations are completed and removal is agreed with the Site Arboriculturist.

Ground Protection

- 1.10.35 In general tree protection fencing will ensure a construction exclusion zone is maintained for all RPAs. However, if access is required within the unsurfaced RPA of a retained trees the following principles will apply:
- 1.10.36 Fencing should protect the outer extent of the unsurfaced RPA until access is required. At this stage fencing is to be temporarily set back under the supervision of the Site Arboriculturist to facilitate limited access for agreed works using fit for purpose ground protection.
- 1.10.37 Fit for purpose ground protection must be in place which is sufficient to protect the structure of the soil from damage based on the heaviest anticipated load. This must be installed prior to the commencement of any development activity on site and be signed off by the Arboriculturist or ECoW.
- 1.10.38 As set out in section 6.2.3.3 of BS5837:2012¹³ the following ground protection measures will be appropriate:

- 1.10.39 Suitable ground protection for pedestrian only access will comprise a single thickness of scaffold boards set on a compressible layer of 100mm of woodchip on a geotextile separation layer.
 - Pedestrian operated plant up to two tonnes in weight would require the use of a proprietary ground protection system (such as Ground Guards, Eki mats, Eve Trakway or equivalent) set on a minimum depth of 150mm woodchip or sharp sand.
 - Heavier loads will require ground protection to an engineering specification in conjunction with arboricultural advice. This could include the use of proprietary 3D cellular confinement systems installed using no dig techniques.
 - As a guide the threshold beyond which root development is significantly affected is a bulk density ranging from 1.4g per cm³ for clay soils, to 1.75g per cm³ for sandy soils.
- 1.10.40 Where there is existing hard surfacing within the RPA this will act as suitable ground protection where it is sufficient to protect the structure of the underlying soil from the heaviest anticipated load and it must be retained in situ unless otherwise approved by the Site Arboriculturist.
- 1.10.41 Tree protective measures shall stay in place until all construction operations are completed and removal is agreed with the Site Arboriculturist.

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

- 1.10.42 Due to the spatial constraints on site, construction works and in particular the use of machinery must be carefully co-ordinated to avoid damage to retained trees. Particular care is required for long reach machinery and plant with jibs, booms or counterweights.
- 1.10.43 A banksman must be in place for any operations which occur within 5m of any part of a retained tree where there is a risk of damage.
- 1.10.44 Any plant operating near a tree must reach towards the tree and work backwards.
- 1.10.45 In general tree protection fencing will be in place to ensure tree canopies and root systems are protected during the main construction works. The final arrangement for tree protection fencing will be specified in the updated Tree Protection and Removal Plan and final Arboricultural Method Statement following the detailed design process and in advance of commencement.

Site organisation, storage and mixing of materials

- 1.10.46 The temporary construction compounds are located at Shipton, Overton substation, Tadcaster and Monk Fryston substation. The perimeter fence will be positioned to avoid the outer extent of adjacent retained tree canopies and RPAs.
- 1.10.47 Where required wheel washing facilities will operate with total recirculation and no washings will be discharged into areas of unsurfaced ground near trees. No silty water is to be pumped onto land where it could run off into the RPA of a retained tree.
- 1.10.48 Areas for fuel storage (>200ltrs) will be protected by a secondary containment system or bund. Mobile fuel bowsers (integrally bunded) will be used in designated refuelling areas only which must be located outside of the RPA of all retained trees. Spill kits will be available.

- 1.10.49 The storage and mixing of materials and any re-fuelling shall take place at least 5m from the RPA of any retained trees and also take into account any potential for run off. Where this is an issue measures such as bunding with robust impermeable polythene sheeting and sand bags must be put in place to prevent accidental run off reaching the rooting zone of retained trees.
- 1.10.50 No changes in ground level are permitted within the RPA of a retained tree.
- 1.10.51 Where activities that could create significant dust are to be carried out, dust will be managed with dust collectors or be supressed by water. No signs, cables or other items are to be attached to any part of a retained tree.

General principles for the management of tree roots

- 1.10.52 Where agreed excavation by hand tools or compressed air takes place within a root protection area the work must be supervised by an Arboriculturist and the following principles will apply:
 - Individual or small groups of roots less than 25 mm in diameter will be retained
 where possible but can be severed with a sharp tool such as secateurs or pruning
 saws to leave a clean-cut end (ideally 100mm back from the face of the excavation
 to account for future regrowth) where they pose an obstruction.
 - Where roots are encountered which are larger than 25 mm in diameter or where significant groups of smaller roots are found, the advice of the site Arboriculturist must be sought to decide an appropriate course of action (following consultation with the Local Planning Authority where appropriate).
 - Roots must only be exposed for the minimum period possible. In the interim period any exposed roots (including the face of any excavation within an RPA) must be completely covered with dampened hessian sacking (which may require ongoing re wetting) to avoid drying out and exposure to light. Backfill for excavations should ideally utilise the parent material and must not be significantly compacted (unless that part of the RPA is lost e.g. within the footprint of a retaining wall or structural embankment).

New soft landscaping and habitat creation near retained trees

- 1.10.53 Areas for new soft landscaping and habitat improvement works will be achieved with no plant access into RPA or tree canopy spread of retained trees. Pedestrian only access will be permitted into these areas to facilitate seeding and planting. Only discrete excavation for individual plants will be permitted and no changes in general ground level will take place within the RPA of a retained tree.
- 1.10.54 All excavation for planting must be carried out by hand within an RPA. Roots greater than 25mm in diameter must be avoided and worked around.
- 1.10.55 Soil reinstatement for planting areas should be lightly compacted by hand only (if required to reduce the likelihood of settlement). No herbicides are to be used near retained trees. No rotovation of the soil within RPAs will be permitted. No planting or habitat improvement works will be acceptable within the RPA of retained veteran or ancient trees.
- 1.10.56 In any location where new planting is proposed near areas of woodland or tree groups not subject to detailed tree survey, an initial walkover of the area will be undertaken by

- an arboriculturist who will identify any ancient or veteran trees and their respective RPA which will be an area where no planting or habitat creation takes place (unless otherwise agreed). Buffer zones will be marked out on site with high visibility barrier tape secured with stakes or road pins to denote the RPA.
- 1.10.57 All new planting must adhere to biosecurity good practice such as the Arboricultural Association Guidance Note 2 Application of Biosecurity in Arboriculture to prevent the spread or introduction of disease.

Dismantling of tree protection measures

1.10.58 All protective fencing and ground protection must remain in place until all significant site works in that specific area have been completed and approval has been obtained from the Arboriculturist or agreed equivalent.

Contact details

(To be confirmed).

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