PLANTING SPECIFICATION

1 GENERAL

1.1 All plants will conform to BS 3936-1 (1992): and be in accordance with the National Plant Specification. Supplying nurseries will be registered under the HTA Nursery Certification Scheme. All plants will be packed and transported in accordance with the Code of Practice for Plant Handling as produced by CPSE.

1.2 Planting will not be carried out when the ground is waterlogged, frost bound or during periods of cold drying winds.

1.3 All bare-root planting stock will be kept covered until actually planted in order to minimise water-loss and prevent the roots from drying out.

1.4 All bare-root planting stock will be root dipped in an approved water-retaining polymer.

1.5 If the formation level is compacted it should be ripped through before topsoiling.

2 TREE PLANTING

2.1 All areas of proposed structure mix/tree belt planting shall be ripped in advance of planting works.

2.2 All extraneous matter such as plastic, wood, metal and stones greater than 100mm diameter will be removed from the planting areas and disposed of off-site.

2.3 Where necessary existing weeds will be treated with a suitable glyphosate-based herbicide and a suitable period allowed to elapse, as recommended by the manufacturer, for the herbicide to take effect before new planting commences.

Light Standard / Standard / Select Standard

2.4 Trees are to be placed into pits (1000 x 1000 x 600mm depth) and backfilled with excavated topsoil . A general-purpose slow release fertiliser (at the rate of 35gm/m2) and Tree Planting and Mulching Compost (at the rate of 20 litres/m2) are to be incorporated into the top 150mm of topsoil during backfilling if existing ground is unsuitable for re-use or is deemed to be required. Where tree pits are more than 300mm deep, backfilled material shall be consolidated/firmed in 150mm layers.

2.5 Trees shall be planted as per the plant schedule shown on this drawing

2.6 All trees will be held so that movement at the root collar is minimised until new roots have developed to anchor the tree. A single vertical stake (75mm dia x 1.8m length) will be used and attached to the tree at approximately 1200mm above ground level. Stakes will be driven 300mm into undisturbed ground beneath tree pit before planting the tree, taking care to avoid underground services and cables. The trees will be secured using proprietary rubber straps and must be firmly fixed with a spacing device used to prevent chafing against the tree.

2.7 All trees will be protected from rabbit and deer damage by the fitting of 1.2m tree guards.

2.8 Composted bark mulch or equivalent will be spread to a depth of 50mm in a 1.0m diameter circle around all individual select standard trees.

2.9 All trees shall be watered in at the end of each day of planting.

Feathered Trees

2.10 Feathered trees are to be placed into the pits 500 x 500 x 300mm deep and backfilled with excavated topsoil site. A general-purpose slow release fertiliser (at the rate of 35gm/m2) and Tree Planting and Mulching Compost (at the rate of 20 litres/m2) are to be incorporated into the top 150mm of topsoil during backfilling if existing ground is unsuitable for re-use or is deemed to be required.

2.11 All newly planted trees will be held so that movement at the root collar is minimised until new roots have developed to anchor the tree. Therefore low staking (75mm dia x 1.5m length) will be driven diagonally into the ground and attached to the tree at approximately 600mm above ground level. Stakes will be driven 300mm into undisturbed ground below base of tree pit before planting the tree, taking care to avoid underground services and cables. The trees will be staked using proprietary rubber ties and must be firmly fixed with a spacing device used to prevent chafing against the tree.

2.12 All trees will be protected from rabbit and deer damage by the fitting of 600mm spiral tree guards.

2.13 All trees shall be watered in at the end of each day of planting.

3 NATIVE HEDGE TRANSPLANTS

Ground Preparation

3.1 Where necessary existing weeds will be treated with a glyphosate-based herbicide and a suitable period allowed to elapse, as recommended by the manufacturer, for the herbicide to take effect.

3.2 All extraneous matter such as plastic, wood, metal and stones greater than 50mm diameter will be removed from site to a registered waste disposal facility.

Planting

3.3 New hedgerows to be planted in double staggered rows as per schedule.

3.4 Existing hedgerows to have infill planting (as required following detailed review on site), species and stock size to match proposed new hedgerow planting (see planting schedule).

3.5 The plants should be planted using L shaped or straight notches) using spades of a design suitable for this purpose. The notches must be vertical and deep enough for the roots to hang freely, with the transplant being planted so that the root collar is exactly level with the ground surface. The notch must then be closed and the soil will be well firmed round the roots in line with the guidelines as set out in BS 4428 (1989).

3.6 All bare-root hedge planting stock will be protected from rabbit damage using approved proprietary 600mm clear plastic spiral guards, supported with 0.9m 12/14lb canes as advised by the manufacturer. Excluding evergreen species.

3.7 All plants shall be watered in at the end of each day of planting.

3.8 Weed growth in all areas of tree planting will be controlled until successful establishment is achieved by careful application of a systemic herbicide such as Roundup by an approved landscaping contractor in order to clear any extraneous vegetation.

3.9 All hedgerow planted areas to be finished with a 50mm min depth of Amenity bark mulch.

Maintenance during first growing season

3.10 All dead, dying or diseased hedge plants will be replaced with plants of similar size and species. If the failure of the plant is due to disease and the disease is considered likely to re-occur then an alternative species may be used as replacement if agreed with the LPA.

3.11 The planting area will be kept weed free throughout the maintenance period using approved herbicides in April, June and August.

4 GRASS

Preparation

4.1 Areas to be seeded will be sprayed out using a glyphosate-based herbicide and cultivated to a minimum depth of 100mm. During the construction phase there may be areas which have suffered high soil compaction, for instance due to heavy machinery being deployed. These areas should be harrowed using a disc harrow to ensure the soil structure is suitable for subsequent sowing. If such a requirement arises to harrow with discs, caution should be exercised to ensure newly installed underground services are not damaged during harrowing.

4.2 Seeding should take place in early spring in the first year following completion of underground wiring, and be broadcast by machine and rolled where possible. The gaps between strings of panels are to be wide enough to accommodate a tractor travelling between them for harrowing, sowing and rolling purposes. In areas where a machine is unable to access, such as far underneath panels, bare areas shall be raked by hand and seeding in these areas should be broadcast by hand.

Beneath and between the panels

4.3 Grass seed will be sown in accordance with BS 4428 (1989), and will be sown from April to May or from September to October, during calm weather and not when the ground is frost bound or waterlogged. The site will be seeded where shown using the seed mix shown below or equivalent (to be agreed with the project ecologist).

4.4 The seed supplier should be contacted prior to purchasing the seed mixture and the soil conditions and location of the site should be discussed. A bespoke seed mixture suitable for the specific conditions on the site may be more suitable.

4.5 Seeds can be mixed with a substrate such as sand or sawdust for ease of broadcasting.

Grassland Cutting

4.6 Following establishment of a suitable sward, the grassland habitats will be managed through either grazing and/or mechanical cuts to develop grassland with a varied structure. Both approaches are identified below.

4.7 Problem perennial weeds within the grassland will be controlled by carefully targeted applications of a suitable selective none residual herbicide by way of spot spraying with a knapsack (low pressure to avoid spray drift), or weed wiping.

4.8 In the unlikely event that grassland fails to become established upon areas of bare ground created during the works these areas will be lightly scarified and reseeded with the same seed mix used to seed the site at the during the construction phase.

4.9 An inspection will be undertaken in early August following completion of the installation. The inspection will be undertaken by the solar farm operator. Should the proportion of bare ground be greater than 20% sowing will be repeated in these areas. Reseeding in August is likely to be particularly appropriate where the months of May, June and July have been very dry. The operating company will assess the proportion of bare ground on the site.

Mechanical Cutting Regime

4.10 Areas of newly seeded grassland will be subject to one cut during the first year of establishment. In good growing conditions (warm soils and adequate rainfall) the grass will establish and require its first management around 6-10 weeks from sowing. Cut when sward reaches 100mm in height. However, additional cuts may be required to prevent the height of the sward from obscuring the solar panels. The grassland should be cut to 40-70mm. Arising's will be left in situ for 3-5 days to allow seeds to disperse, then be collected with a baler or rake to remove nutrients and thereby promote the establishment of a bio diverse sward.

4.11 Cutting should follow a sympathetic method (ie working outwards towards the boundary features), this will allow fauna such as invertebrates, birds and small mammals to temporarily and safely vacate the area.

4.12 The management will take a flexible approach and the exact dates will be dependent upon weather conditions. A phased (rotational) cutting regime is recommended (ie ideally the entire area should not be cut at the same time) in order to allow for more structured grassland.

4.13 Grassed areas along hedgerow bases can be cut less frequently once established, with a single main cut (reducing sward height to approximately 150mm) late in the season, between August and September, subject to weather conditions.

4.14 All arising's will be removed from site.

4.15 Please refer to seed suppliers recommendations for ongoing maintenance and cutting regime.

Grazing Regime

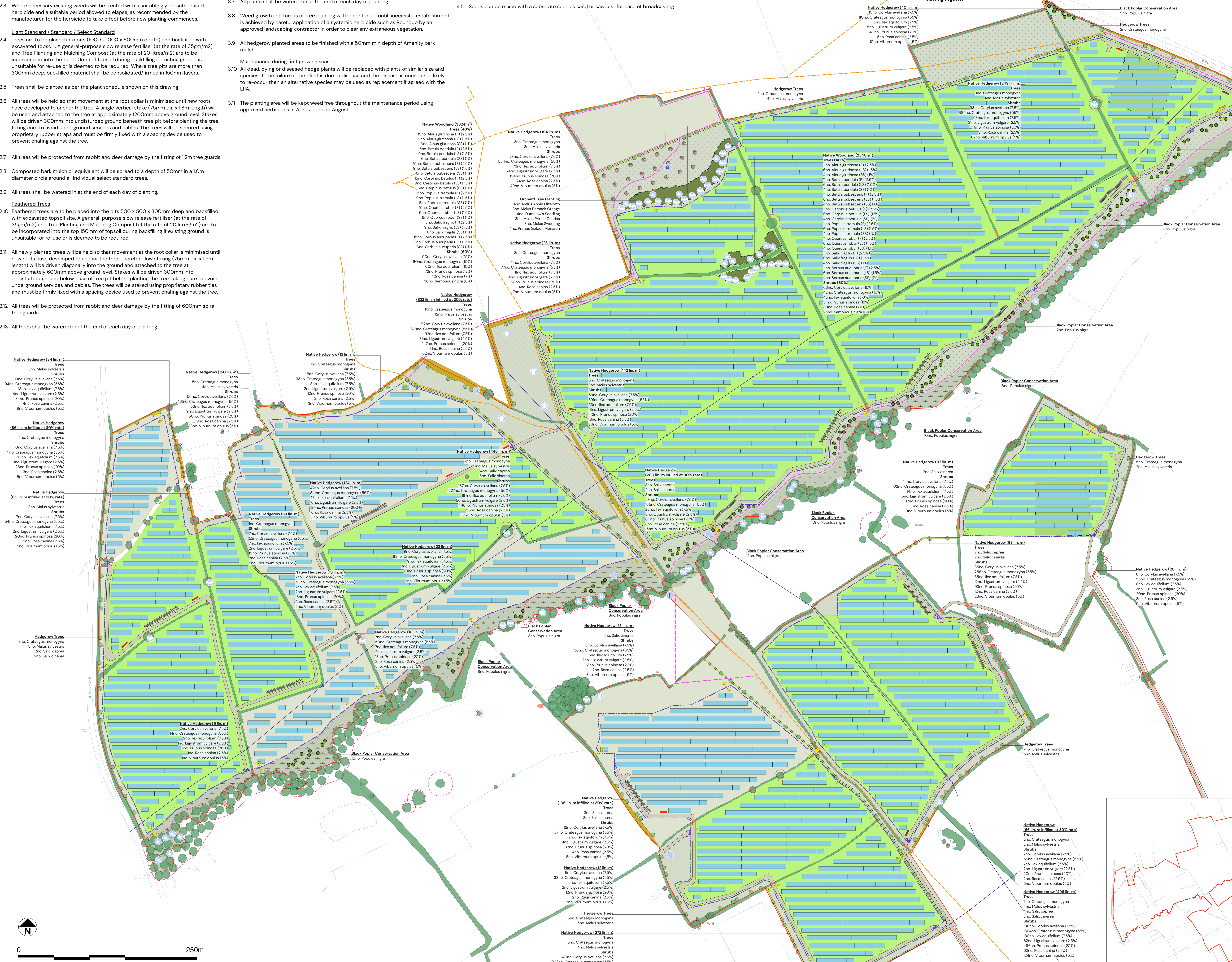
4.16 Once established the grassland within the perimeter fence can be managed by sheep grazing as an alternative to mechanical cutting. Grazing should follow a low-intensity grazing regime.

4.17 Grassland to be subject to light intermittent grazing by sheep between late August/September and November through to February where conditions allow. Stock should be removed in the late winter period if ground conditions become saturated in order to prevent compaction of wet earth and excessive damage to the sward.

4.18 During the spring and summer (March to August), sheep will be removed to allow flowering plants to set seed. Light summer grazing may also be carried out if grass growth is particularly vigorous, particularly in the early years after establishment.

4.19 Guidance on stocking levels for lowland grassland (number of sheep per hectare) can be obtained from the Lowland Grassland Management Handbook produced by Natural England.

4.20 Please refer to seed suppliers recommendations for ongoing maintenance and cutting regime.



PLANTING SCHEDULE

NATIVE WOODLAND

To be planted at 2.5m centres in 15-25 tree clusters of same species. Shrubby edges and small glades/openings to be incorporated to woodland edge (10% open space to be included within woodland area).

No	Species	Common Name	Mix (%)	Height (cm)	Form	Age/ Times transpld	Root
Trees – 40%							
26	Alnus glutinosa	Alder	2.5	150-175	Feathered; 3 breaks	2x	B
15	Alnus glutinosa	Alder	1.5	250-300; 6-8cm girth	Light standard; clear stem 150-175cm; 3 breaks	2x	B
10	Alnus glutinosa	Alder	1	300-350; 10-12cm girth	Selected standard; min 200cm clear stem; 4 breaks	2x	B
26	Betula pendula	Silver Birch	2.5	150-175	Feathered; 3 breaks	2x	B
15	Betula pendula	Silver Birch	1.5	250-300; 6-8cm girth	Light standard; clear stem 150-175cm; 3 breaks	2x	B
10	Betula pendula	Silver Birch	1	300-350; 10-12cm girth	Selected standard; min 200cm clear stem; 4 breaks	2x	B
26	Betula pubescens	Downy Birch	2.5	150-175	Feathered; 3 breaks	2x	B
15	Betula pubescens	Downy Birch	1.5	250-300; 6-8cm girth	Light standard; clear stem 150-175cm; 3 breaks	2x	B
10	Betula pubescens	Downy Birch	1	300-350; 10-12cm girth	Selected standard; min 200cm clear stem; 4 breaks	2x	B
26	Carpinus betulus	Hornbeam	2.5	150-175	Feathered; 3 breaks	2x	B
15	Carpinus betulus	Hornbeam	1.5	250-300; 6-8cm girth	Light standard; clear stem 150-175cm; 3 breaks	2x	B
10	Carpinus betulus	Hornbeam	1	300-350; 10-12cm girth	Selected standard; min 200cm clear stem; 4 breaks	2x	B
26	Populus tremula	Aspen	2.5	150-175	Feathered; 3 breaks	2x	B
15	Populus tremula	Aspen	1.5	250-300; 6-8cm girth	Light standard; clear stem 150-175cm; 3 breaks	2x	B
10	Populus tremula	Aspen	1	300-350; 10-12cm girth	Selected standard; min 200cm clear stem; 4 breaks	2x	B
26	Quercus robur	English oak	2.5	150-175	Feathered; 3 breaks	2x	B
15	Quercus robur	English oak	1.5	250-300; 6-8cm girth	Light standard; clear stem 150-175cm; 3 breaks	2x	B
10	Quercus robur	English oak	1	300-350; 10-12cm girth	Selected standard; min 200cm clear stem; 4 breaks	2x	B
26	Salix fragilis	Crack Willow	2.5	150-175	Feathered; 3 breaks	2x	B
15	Salix fragilis	Crack Willow	1.5	250-300; 6-8cm girth	Light standard; clear stem 150-175cm; 3 breaks	2x	B
10	Salix fragilis	Crack Willow	1	300-350; 10-12cm girth	Selected standard; min 200cm clear stem; 4 breaks	2x	B
26	Sorbus aucuparia	Rowan	2.5	150-175	Feathered; 3 breaks	2x	B
15	Sorbus aucuparia	Rowan	1.5	250-300; 6-8cm girth	Light standard; clear stem 150-175cm; 3 breaks	2x	B
10	Sorbus aucuparia	Rowan	1	300-350; 10-12cm girth	Selected standard; min 200cm clear stem; 4 breaks	2x	B
408 TOTAL							
Shrubs–60%							
153	Corylus avellana	Hazel	15	60-80	Transplant	1+1	B
102	Crateagus monogyna	Hawthorn	10	60-80	Transplant	1+1	B
102	Ilex aquifolium	Holly	10	60-80	Transplant	1+1	B
123	Prunus spinosa	Blackthorn	12	60-80	Transplant	1+1	B
72	Rosa canina	Dog Rose	7	60-80	Transplant	1+1	B
61	Sambucus nigra	Elder	6	60-80	Transplant	1+1	B
613 TOTAL							

BLACK POPLAR CONSERVATION AREA

To be planted along the brook edge

No.	Species	Common Name	Girth	Height (cm)	Form	Root condition
139	Populus nigra	Black Poplar	8-10	250-300	Standard	RB

ORCHARD TREE PLANTING

Species selected for their local provenance/heritage

No.	Species	Pollination Group	Height (cm)	Root condition
4	Malus Annie Elizabeth	4	120-150	12L (MM106 Rootstock)
3	Malus Barnack Orange	4	120-150	12L (MM106 Rootstock)
4	Malus Dumelow's Seedling	5	120-150	12L (MM106 Rootstock)
3	Malus Prince Charles	5	120-150	12L (MM106 Rootstock)
3	Malus Sweeting	2	120-150	12L (MM106 Rootstock)
4	Prunus Golden Monarch	17	120-150	12L (St Julien A Rootstock)

HEDGEROW TREES

To be planted within proposed / alongside existing hedgerows

No.	Species	Common Name	Girth	Height (cm)	Form	Root condition
97	Crataegus monogyna	Hawthorn	8-10	250-300	Standard	RB
68	Malus sylvestris	Crab Apple	8-10	250-300	Standard	RB
19	Salix caprea	Goat Willow	8-10	250-300	Standard	RB
22	Salix cinerea	Grey Willow	8-10	250-300	Standard	RB
206 TOTAL						

NATIVE HEDGEROW/INFILL PLANTING

To be planted in double staggered row with 5 plants per linear metre.

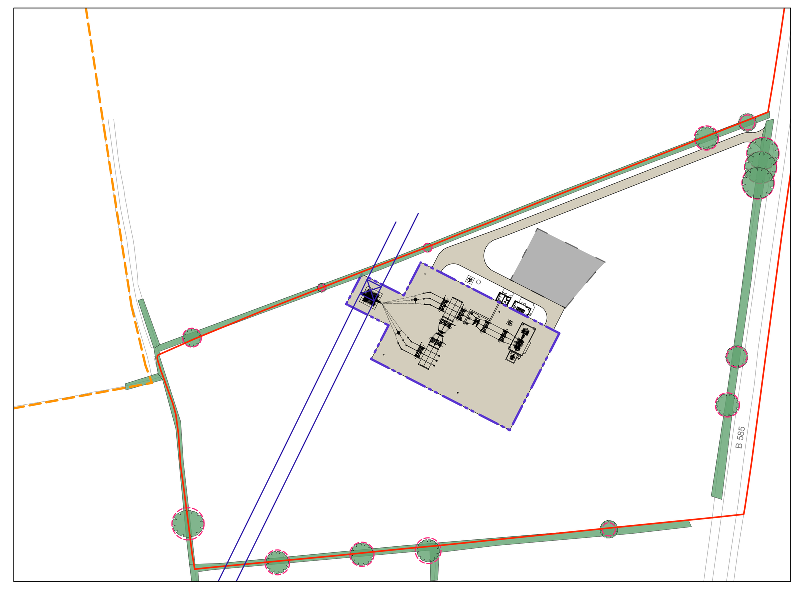
No.	Species	Common Name	Mix (%)	Height (cm)	Form	Age/ Times transpld	Root condition
1157	Corylus avellana	Hazel	7.5	60-80	Branched; 3 breaks	1+2	B
8519	Crataegus monogyna	Hawthorn	55	60-80	n/a	1+1	B
1157	Ilex aquifolium	Holly	7.5	60-80	Branched; 3 breaks	1+2	B
386	Ligustrum vulgare	Wild Privet	2.5	60-80	Branched; 3 breaks	1+2	B
3084	Prunus spinosa	Blackthorn	20	60-80	Branched; 2 breaks	1+1	B
386	Rosa canina	Dog Rose	2.5	60-80	Transplant	1+1	B
772	Viburnum opulus	Guelder Rose	5	60-80	Branched; 2 breaks	1+1	B
15,461 TOTAL							

KEY

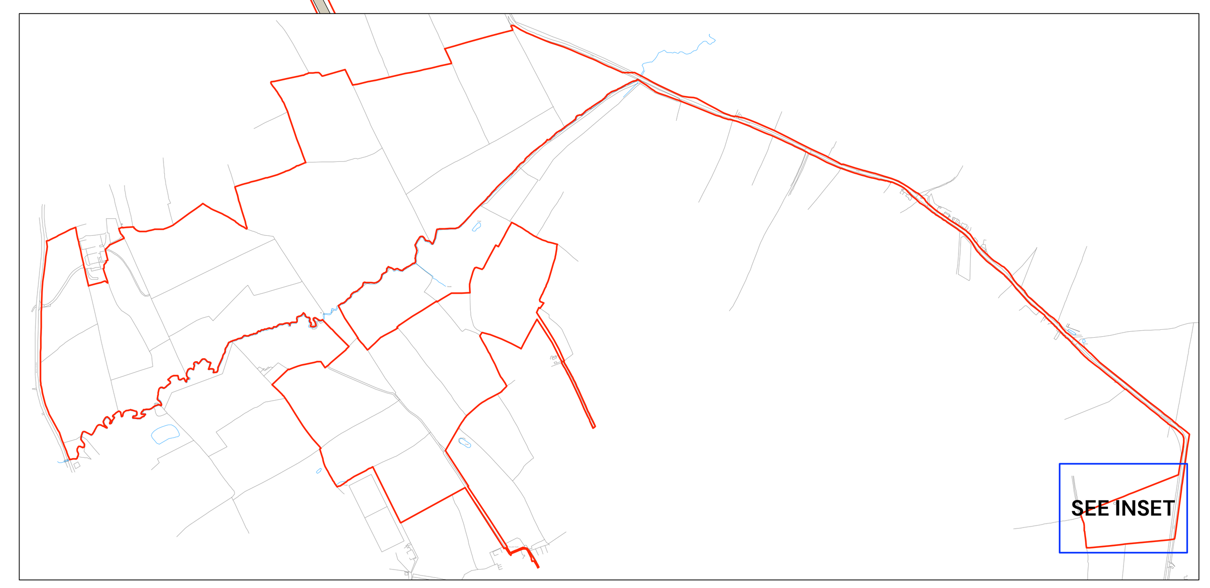
- Site boundary
- Vegetation to be retained – hedgerows within land ownership currently taller than 4m height shall be managed to maintain current height – hedgerows within land ownership currently shorter than 4m height shall be managed grow up to and be maintained at 3-4m height – hedgerows outside of land ownership are out of applicants control
- Vegetation to be enhanced – gaps/thinning in hedgerows to be infilled with native hedgerow mix at approx 30% infill rate. Exact infilling to be agreed on site to work most effectively with existing vegetation to maximise screening/habitat benefit
- Vegetation to be removed – 1no. Category U tree (T34) removed to accommodate construction; short lengths of hedgerow removed to accommodate construction of fences and access tracks – where removed to accommodate fence construction, hedgerows shall be allowed to grow back up and be maintained around fence line
- Public Right of Way
- Overhead power lines
- Proposed permissive footpath
- Temporary construction compounds
- Inverter
- Spare container
- Customer switchgear container
- Battery containers
- Solar panel
- CCTV camera
- Substation and point of connection
- Fencing – to solar compounds and associated gates
- Access track – for operation and maintenance use only
- Native woodland – native transplant shrub and feathered, light standard and selected standard tree mix, to be managed to allow to grow up to and be maintained at min 6m height
- Black Poplar tree – planted in clusters within Black Poplar Conservation Area along (brook edge corridor)
- Native hedgerow tree – planted within proposed / alongside existing hedgerows
- Orchard tree – species selected for their local provenance/heritage
- Native hedgerow – to be managed to allow to grow up to and be maintained at 3 - 4m height
- Existing pasture to be managed as wildflower meadow – management regime amended to encourage diverse species mix to establish. If diversity fails to thrive, this may be overseeded with a suitable wildflower only mix (ie. Emorsgate EM3F Special General Purpose Wild Flowers)
- Grazing Mix – ie. Emorsgate EM2 Standard General Purpose Meadow Mixture, or similar
- Wildflower meadow – ie. Emorsgate EM3 Special General Purpose Meadow Mixture, or similar
- Wet wildflower meadow – ie. Emorsgate EM8 Meadow Mixture for Wetlands, or similar
- Interpretation board – information regarding water meadow system and Black Poplar Conservation Area
- Outdoor classroom – information boards regarding: solar energy production; species, habitats and ecology features on site; Black Poplar Conservation Area; Bee Walk – informal seating opportunities, ie. large log stumps (use trees to be removed from site where suitable)
- Bird box (40no.) – designs suitable for: Robins, Wrens, Tits (Blue, Great and Coal), Nuthatches, House Sparrows and Starlings
- Bat box (40no.) – up to 3 per tree, facing in different directions
- Barn Owl box (1no.)
- Invertabrate box (5no.) – located near hedgerows and within grassland
- Amphibian/reptile hibernacula (4no.) – located within wildflower grassland meadows
- Beehives (4no.) – to be positioned on firm ground facing south/south-east – to be managed by local school/beekeepers
- Mammal gate/ gaps – locations shown indicatively. The precise number and locations will be determined during the pre-commencement badger survey

NOTES:

-Panels offset from proposed and existing trees to avoid impacts upon them (including mature height overshadowing): trees within the site will be monitored and if required pruned accordingly to prevent overshadowing on the panels.



INSET



KEY PLAN - SCALE 1:12,500

Revisions:
First Issue- 20/04/2023 IHW
A- (05/06/2023 NM/SSM) Planting quantities added to schedule
B- (09/08/2023 LAB) Locations of ecology features added and PRoW alignment updated for S29/2 to the south
C - (31/08/2023 IBD) Amended following stakeholder consultation: permissive path route amended within northern field; seed mixes amended; proposed planting removed surrounding substation; tree removals corrected to align with arboricultural impact assessment; boardwalk removed

Detailed Soft Landscape Plan

Stoneshollow Solar Farm

Client: JBM Solar Projects 26 Ltd

DRWG No: **P23-0657_EN_00_01** REV: **C**

Drawn by : IBD/LAB Approved by: IBD

Date: 31/08/2023

Scale: 1:2000 @A0

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