

# Landscape Management Plan

Sheringham Recycling Centre



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Revision	Reason for Update	Document Updated
V5	Change understorey planting on top of the bund to grass mix EM3	11.4.24

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## 1 Introduction

- 1.1 Lanpro Services Ltd. ('Lanpro') was commissioned by Stantec Ltd (the Applicant) to provide this Landscape Management Plan (LMP) to cover a 5-year period following planting implementation at the proposed Recycling Centre on land north of Holt Road, East Beckham, near Sheringham (the 'Site')
- 1.2 The Biodiversity Net Gain report prepared by Geosphere Environmental (April 24 Revisions) reflects more than the required 10% gain in relation to the proposed planting mitigation.
- 1.3 All plants and planting operations are to comply with the requirements and recommendations of all current relevant British Standard specifications including but not limited to:
  - National Plant Specification 'Handling and Establishing Landscape Plants'.
  - BS 8545 - Trees: From Nursery to Independence in the Landscape
  - BS 3936-1:1992 - Nursery stock. Specification for trees and shrubs
  - BS 3882:2015 - Specification for topsoil
  - BS 4428:1989 - Code of practice for general landscape operations (excluding hard surfaces) (AMD 6784)
  - BS 5837: 2012 - Trees in relation to design, demolition and construction. Recommendations
  - BS 8545. Trees: From Nursery to Independence in the Landscape;

### Relevant Drawings

- 1.4 This LMP should be read in conjunction with Lanpro's Landscape Mitigation drawing in Appendix A - 2735-00-201-Rev N

## 2 The Development

2.1 The Development covers an area of approximately 0.34 hectares to provide a new recycling centre to complement the Norfolk County Council (NCC) upgrading of the network of recycling centres across the county.

2.2 The Site is currently an agricultural field growing cereal crops. with an immature hedgerow to the east boundary and a row of trees to the south boundary all of which will be retained. The area to the south-east of the proposed recycling centre to be planted as new woodland is currently classified by Geosphere as bramble scrub and native grassland.

2.3 The Development will comprise:

- An improved entry road from Holt Road.
- A circular internal roadway within the recycling centre.
- Machinery and collection skips for recycling.
- A staff building with welfare facilities.
- Drainage installations including a rain garden to the west boundary.
- Chain link and security fencing to the boundaries.
- A new hedgerow to the south boundary and a willow hedge to the east boundary
- A gabion structured bund to the east of the site
- New planting – see section 4.1

## 3 Aims and Objectives

3.1 The aims of this LMP are:

1. To ensure that existing biodiversity resources are protected during construction of the Development;
2. To ensure that adequate compensation and enhancement measures are implemented as part of the Development and in accordance with the approved application drawings;
3. To ensure that existing biodiversity resources and proposed mitigation and enhancement measures are managed appropriately during the operation of the Development; and
4. To ensure implemented planting and enhancement measures are maintained and monitored over a minimum 15-year period, and any remedial actions are undertaken to ensure the success of landscape and ecology proposals.

## 4 Proposed Soft Landscape and Ecological Mitigation and Enhancements

4.1 Lanpro's Landscape Mitigation Plan 2735-00-201-RevN (see Appendix A) details all proposed soft landscape mitigation and enhancements, which would introduce a number of different ecological enhancements:

- 74m native hedgerow mix
- 40m willow hedge
- 21No. new trees and 6No. specimen shrubs
- 286m<sup>2</sup> native shrub mix
- 82m<sup>2</sup> native species woodland mix
- 587m<sup>2</sup> woodland edge mix
- 6m<sup>2</sup> wetland meadow mix for rain garden Emorsgate EM8
- 284m<sup>2</sup> Special General Purpose Meadow Mix Emorsgate EM3
- 399m<sup>2</sup> Basic General Purpose Meadow Mix Emorsgate EM1

4.2 Existing boundary trees and hedgerows within and surrounding the Site will be retained.

### Planting and seeding preparation

#### ***Clearance***

4.3 Where existing ground vegetation is retained or has re-established during the construction phase, the following clearance works should be undertaken prior to planting or seeding works:

- All grass and perennial vegetation should be cleared from site including epicormic and below ground growth;
- All rubbish, debris and stones over 25mm diameter should be cleared; and
- All arisings should be removed from site.

4.4 The root protection areas of retained hedgerows and trees must be protected during this preparation work.

#### ***Cultivation***

4.5 Topsoil should be cultivated in-line with BS 3882: 2015 to a minimum of 400mm over all planting areas or to a fine tilth over all areas to be seeded and include basic levelling with levels graded to fall. No cultivation should take place in wet/ waterlogged conditions and

within the root protection areas of existing trees. Where necessary imported topsoil should be sustainably sourced and must be compliant with the BS 3882: 2015.

### ***Planting Methods***

- 4.6 In the interest of biodiversity protection, the use of herbicides should be kept to a minimum in the preparation or management of the planted or seeded areas.
- 4.7 Biodegradable tree and shrub guards to be used throughout the site.
- 4.8 The handling of plants on Site must be in accordance with National Plant Specification 'Handling and Establishing Landscape Plants'<sup>1</sup>.
- 4.9 All plants and planting operations are to comply with the requirements and recommendations of all current relevant British Standard specification – outlined in section 1.3.
- 4.10 All planting is to be carried out during appropriate climatic conditions in the optimal planting period of October through until March.
- 4.11 The majority of the specified plants are to be supplied as bare root specimens; therefore, care should be taken to ensure the roots do not dry out prior to planting. Trees should be planted as soon as possible after delivery, if this is not possible then rootballed and container grown trees should be stored closed together with the ball or container covered with sand or a moist cloth to prevent drying out.

### ***Tree Planting Generally***

- 4.12 Planting to be carried out as per the following guidelines:

- Selected Light Standard Trees (SLI):

Excavate a tree pit into soil prepared as 5.4 above ensuring it is large enough for the roots, without damage or bending. Gently back fill, pushing soil back to the stem. Do not plant deeper than the original nursery depth.

- Transplant (T):

Slit planting into soil prepared as 5.4 above, with spade manipulated to ensure roots can be placed easily into the slit. Gently push soil back to the stem after planting. Do not plant deeper than the original nursery depth

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<sup>1</sup> The National Plant Specification – Handling and Establishment (November 1995). Available at: <https://www.csdhub.com/wp-content/uploads/2014/12/The-National-Plant-Specification-Handling-and-Establishment.pdf> [Accessed August 2020].

- Containerised 3L (C)

Excavate a planting hole into soil prepared as 5.4 above ensuring it is large enough for the rootball. Gently back fill, pushing soil back to the stem. Do not plant deeper than the original level of soil in the container.

### ***Planting Staking***

- 4.13 Newly planted trees and should be staked in-line with BS 4428: 1989 using a single stake for Light Standard trees and double stake for Select Standard trees including an appropriate biodegradable tie and rubber buffer to prevent excessive movement during establishment. The stake(s) should be positioned on the windward side of the tree and driven into the ground vertically.

### ***Mulching***

- 4.14 All trees should receive a minimum mulch area of 250mm radius from stem, leaving the stem of the tree clear to a depth of 75mm
- 4.15 All hedge planting should receive a minimum mulch area 75mm deep with a 50mm offset from the proposed centreline hedge, leaving the stem of the plants clear.

### **Planting Specifications**

- 4.16 The following section outlines all planting specifications, these can also be seen on drawing Landscape Mitigation Plan 2735-00-201-Rev N (see Appendix A)

### ***Proposed Native Species Hedgerow***

- 4.17 A total of 74m of new hedgerow will be planted within overall site. The species have been chosen to attract wildlife and consist of species found locally. The hedge location is on the south boundary of the Site and shown on drawing Landscape Mitigation Plan 2735-00-201-Rev N (see Appendix A).
- 4.18 The proposed hedgerow will consist of a double staggered row of bare root feathered plants, with rows at 45 cm apart (5 plants per linear metre). Species mixed throughout the hedge line in random groups of minimum 3. A 500 mm wide trench to be excavated and topsoil cultivated to 400mm depth prior to planting. Each hedge plant to be supported by 1No. cane and appropriate biodegradable guard.
- 4.19 The hedgerows will comprise native species as shown in Table 5.1.

### ***Table - Native Species Hedgerow Planting Schedule***



Species	Common Name	Size	% in the Mix	Quantity
<i>Crataegus monogyna</i>	Hawthorn	F, 2X, 40-60cm (h) BR	45	166
<i>Prunus spinosa</i>	Blackthorn	F, 2X, 40-60cm (h) BR	45	166
<i>Rosa canina</i>	Dog Rose	T, 1+1, 40-60cm (h) BR	10	38

**Abbreviations:**

F = Feathered, T = Transplant, BR= Bare Root, C = Containerised

1+1 = 1 year seeding transplanted for 1 year, 1u1= 1 year seeding undercut and grown in situ for a further year, 2x = 2 times transplanted

***Proposed Willow Hedge***

- 4.20 A 4m of new native willow hedge will be planted along the east boundary. The species have been chosen to provide screening and to attract wildlife. The hedge location is shown on Landscape Mitigation Plan 2735-00-201-Rev N (see Appendix A).
- 4.21 The proposed hedgerow will consist of a single row of bare root feathered plants, spaced at 3 plants per linear metre. A 500 mm wide trench to be excavated and topsoil cultivated to 400mm depth prior to planting.
- 4.22 The trench should be lined on the external face (wider landscape side) with a root barrier to prevent root suckering into the wider landscape. It should also be noted that within the annual maintenance regime the willow should be hard pruned along its face immediately after flowering to prevent self-seeding into the wider landscape.
- 4.23 Each hedge plant to be supported by 1No. cane and appropriate biodegradable guard.

***Table - Native Species Hedgerow Planting Schedule***

Species	Common Name	Size	% in the Mix	Quantity
<i>Salix alba</i>	Hawthorn	T 1+2, 125-150 BR	100	120

T = Transplant. 1+2 = a 3 year old plant, two years field growing in the seedbed and then transplanted (and spaced out) for a further two growing seasons giving a tall, stocky, bushy plant

***Proposed Tree Planting***

- 4.24 A total of 21No. new native trees will be planted within the overall site. The species have been chosen to provide evergreen screening and to attract wildlife. The selection consists of species that are found locally. Locations of each tree are shown on Landscape Mitigation Plan 2735-00-201-Rev N (see Appendix A).

- 4.25 Excavate a tree pit large enough for the roots, without damage or bending and fork through the base and sides of the pit. After planting gently back fill, pushing soil back to the stem. Do not plant deeper than the original nursery depth.

**Table - Native Woodland Tree Planting Schedule**

Species	Form	BR/RB/P ot	Height (cm)	Quantity
Betula pendula	Standard 81-0	RB	250-300	4
Malus sylvestris	Lt Standard 6-8	RB	200-250	1
Ilex aquifolium	Standard 8-10	RB	250-300	6
Pinus sylvestris	Standard 8-10	RB	250-300	6
Quercus ilex	Standard 8-10	RB	250-300	4

**Proposed Native Species Woodland Mix**

- 4.26 A total of 82m<sup>2</sup> new native woodland mix will be planted within the overall site. The species have been chosen to attract wildlife and consist of species that are found locally. Locations are shown on Landscape Mitigation Plan 2735-00-201-Rev N (see Appendix A).
- 4.27 Species to be mixed throughout the woodland areas to be in random groups 3, 5 and 7 at maximum 1 plant per m<sup>2</sup>. Each plant to be supported by 1No. cane and appropriate biodegradable guard.

**Table - Native Woodland Tree Planting Schedule**

Species	Form	Age	BR/RB/P ot	Height (cm)	% in mix	Quantity
Acer campestre	T	1+1	BR	40-60	3	4
Acer pseudoplatanus	T	1+1	BR	60-80	2	3
Betula pendula	T	1+1	BR	80-100	5	6
Cytisus scoparius	Bushy	-	3L	40-60	3	4
Ilex aquifolium	Standard 8-10	-	RB	250-300	5	6
Pinus sylvestris	Standard 8-10	-	RB	250-300	40	50
Quercus ilex	Standard 8-10	-	BR	250-300	40	50
Ulex europeus	Bushy	-	2L	20-30	2	3

**Abbreviations:**

T = Transplant. 1+1 = 1 year seeding transplanted for 1 year.

**Proposed Woodland Edge mix**

- 4.28 A total of 587m<sup>2</sup> of native woodland edge mix will be planted within the overall site. Planting locations are shown on Landscape Mitigation Plan 2735-00-201-Rev N (see Appendix A).
- 4.29 Species to be mixed throughout the woodland areas to be in random groups 3, 5 and 7 at maximum 1 plant per m<sup>2</sup>. Each plant to be supported by 1No. cane and appropriate

**Table - Native Woodland Edge mix Schedule**

Species	Form	Age	BR/RB/P ot	Height (cm)	% in mix	Quantity
Acer campestre	T	1+1	BR	40-60	15	61
Acer pseudoplatanus	T	1+1	BR	60-80	10	41
Betula pendula	T	1+1	BR	80-100	15	61
Cytisus scoparius	Bushy	-	3L	40-60	20	81
Ulex europeus	Bushy	-	2L	20-30	40	162

**Proposed Specimen Shrubs**

- 4.30 A total of 6No. specimen hazel shrub plants will be planted within the overall site. Planting locations are shown on Landscape Mitigation Plan 2735-00-201-Rev N (see Appendix A).
- 4.31 Excavate a planting pit large enough for the roots, without damage or bending and fork through the base and sides of the pit. After planting gently back fill, pushing soil back to the stem. Do not plant deeper than the original nursery depth.

**Table – Specimen Shrubs**

Species	Common Name	Size	% in the Mix	Quantity
Corylus avellana	Hazel	Bushy/feathered 125-150cm:RB	100	6

**Proposed Native Shrub mix**

- 4.32 A total of 286m<sup>2</sup> of native scrub mix will be planted within the overall site. Planting locations are shown on Landscape Mitigation Plan 2735-00-201-Rev N (see Appendix A).
- 4.33 Slit planting into soil with spade manipulated to ensure roots can be placed easily into the slit. Gently push soil back to the stem after planting. Do not plant deeper than the original nursery depth.

4.34 The proposed mix scrub planting mix will comprise of species as shown in the table below.

**Table - Proposed Scrub Mix Schedule**

Species	Form	BR/RB/Pot	Height (cm)	% in mix	Quantity
Crataegus monogyna	Whip	BR	40-60	35	112
Cytisus scoparius	Bushy	3L	40-60	15	48
Prunus spinosa	Whip	BR	40-60	30	85
Rosa canina	Whip	BR	40-60	5	17
Ulex europeus	Bushy	3L	40-60	15	48

**Proposed Special General Purpose Meadow seed mix**

4.35 A Wildflower meadow mix will be and managed for the benefit of wildlife, as a source of food and shelter for small mammals, birds and invertebrates.

4.36 Emorsgate EM3 – Special General-Purpose Meadow Mixture (or similar approved) will be sown due to its diverse range of species (species shown in Table below) and will be suitable for a range of soil and light conditions which vary across the site.

4.37 The aim is to establish a meadow sward with greater ecological value than the existing agricultural land. Ground preparation is necessary to establish a clean seed bed into which a grass seed mix can be sown. To prepare a seed bed first remove weeds using repeated cultivation. Then plough or dig to bury the surface vegetation, harrow or rake to produce a medium tilth, and roll, or tread, to produce a firm surface.

4.38 In order to establish grassland sward:

- Seed mix will be directly sown into the prepared ground by machine or by hand, at a rate of 40 kg/ha (4 g/m<sup>2</sup>). prepared ground must be free from weeds and raked to a medium tilth, then lightly rolled to ensure effective seed/soil contact.
- Once sown, the seed should be lightly pressed into the seedbed by rolling or treading.
- Autumn (August to mid-September) sowing is preferred because this favours species that germinate in autumn and species that require a period of cold to break their dormancy before they germinate in spring.
- Sowing must take place when conditions are warm and moist, and so winter and drought periods must be avoided.
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**Table - Proposed Special General Purpose Meadow seed mix Schedule – Emorsgate EM3**

<b>%</b>	<b>Scientific name</b>	<b>Common name</b>
<b>Wildflowers (20% of overall mix)</b>		
0.40	<i>Anthyllis vulneraria</i>	Kidney vetch
1.60	<i>Centaurea nigra</i>	Common knapweed
0.60	<i>Centaurea scabiosa</i>	Greater knapweed
0.10	<i>Chaerophyllum temulum</i>	Rough Chervil
0.40	<i>Cruciata laevipes</i>	Crosswort
1.00	<i>Daucus carota</i>	Wild carrot
0.20	<i>Echium vulgare</i>	Viper's bugloss
1.00	<i>Galium album</i>	Hedge bedstraw
0.70	<i>Galium verum</i>	Lady's bedstraw
0.10	<i>Geranium pratense</i>	Meadow crane's-bill
0.80	<i>Knautia arvensis</i>	Field scabious
0.20	<i>Lathyrus pratensis</i>	Meadow veitchling
1.00	<i>Leucanthemum vulgare</i>	Oxeye daisy
2.40	<i>Malva moschata</i>	Musk mallow
0.60	<i>Medicago lupulina</i>	Black medic
0.40	<i>Origanum vulgare</i>	Wild marjoram
2.20	<i>Plantago lanceolata</i>	Ribwort plantain
0.40	<i>Plantago media</i>	Hoary plantain
2.00	<i>Poterium sanguisorba</i>	Salad Burnet
0.40	<i>Primula veris</i>	Cowslip
0.20	<i>Prunella vulgaris</i>	Selfheal
1.40	<i>Rhinanthus minor</i>	Yellow rattle
0.20	<i>Sanguisorba officinalis</i>	Great burnet
1.00	<i>Silene dioica</i>	Red campion
0.20	<i>Silene vulgaris</i>	Bladder campion
0.30	<i>Vicia cracca</i>	Tufted vetch
0.20	<i>Vicia sativa ssp. segetalis</i>	Common vetch
<b>Grasses (80% of overall mix)</b>		
8.00	<i>Agrostis capillaris</i>	Common bent
28.00	<i>Cynosurus cristatus</i>	Crested dog's-tail
24.00	<i>Festuca rubra</i>	Slender-creeping red-fescue

%	Scientific name	Common name
4.00	<i>Phleum bertolonii</i>	Smaller's cat's-tail
16.00	<i>Poa pratensis</i>	Smooth-stalked Meadow-grass

### ***Proposed Meadow Mix for Wetlands***

- 4.39 A Wetland Seed Mix will be sown in rain garden area and will be managed for the benefit of wildlife, as a source of food and shelter for small mammals, birds and invertebrates. This will also function as a attenuation basin / bioswale.
- 4.40 Emorsgate EM8 – Meadow Mix for Wetlands (or similar approved) will be sown due to its species mix that is suitable for seasonally wet soils, and is based on the vegetation found in traditional floodplain and water meadows and will be suitable for a range of soil and light conditions which vary across the site.
- 4.41 The aim is to establish a meadow sward with greater ecological value than the existing agricultural land and better suited to the prevailing conditions. Ground preparation is necessary to establish a clean seed bed into which a grass seed mix can be sown).
- 4.42 In order to establish grassland sward:
- Seed mix will be directly sown into the prepared ground by machine or by hand, at a rate of 40 kg/ha (4 g/m<sup>2</sup>). prepared ground must be free from weeds and raked to a medium tilth, then lightly rolled to ensure effective seed/soil contact.
  - Once sown, the seed should be lightly pressed into the seedbed by rolling or treading.
  - Early autumn or spring sowing once the ground has drained is preferred as most plants need time to mature enough to withstand flooding
  - Sowing must take place when conditions are warm and moist, and so winter and drought periods must be avoided.

**Table - Proposed Meadow Mix for Wetlands – Emorsgate EM8**

%	Scientific name	Common name
<b>Wildflowers (20% of overall mix)</b>		
2.00	<i>Achillea millefolium</i>	Yarrow
0.60	<i>Agrimonia eupatoria</i>	Agrimony
3.60	<i>Centaurea nigra</i>	Common knapweed
1.00	<i>Filipendula ularia</i>	Meadowsweet

%	Scientific name	Common name
2.00	Galium verum	Lady's bedstraw
0.20	Geum rivale	Water avens
0.50	Lathyrus pratensis	Meadow vetchling
0.40	Leontodon hispidus	Rough Hawkbit
1.20	Leucanthemum vulgare	Ox-eye daisy
0.10	Lotus corniculatus	Greater Birdsfoot Trefoil
0.40	Lotus pedunculatus	Greater Birdsfoot Trefoil
3.20	Plantago lanceolata	Ribwort plantain
0.20	Primula veris	Cowslip
0.10	Prunella vulgaris	Selfheal
0.40	Ranunculus acris	Meadow buttercup
1.20	Rumex acetosa	Common sorrel
1.40	Rhinanthus minor	Yellow rattle
1.00	Sanguisorba officinalis	Great Burnet
0.10	Succisa pratensis	Devil's-bit scabious
0.40	Vicia cracca	Tufted vetch
<b>Grasses (80% of overall mix)</b>		
4.00	Agrostis capillaris	Common bent
4.00	Anthoxanthum odoratum	Sweet vernal grass
1.60	Carex divulsa subs. divulsa	Grey sedge
34.40	Cynosurus cristatus	Crested dog's-tail
1.60	Deschampsia cespitosa	Tufted hair grass
20.00	Festuca rubra	Slender-creeping red-fescue
4.00	Hordeum secalinum	Meadow barley
8.00	Poa trivialis	Rough stalk meadow grass
2.40	Schedonorus arundinaceus	Tall fescue

***Proposed Basic General Purpose Meadow Mix – Emorsgate EM1***

- 4.43 A Basic General Purpose Meadow Mix will be sown along the verge areas and will be managed for the benefit of wildlife, as a source of food and shelter for small mammals, birds and invertebrates. This will also function as a attenuation basin / bioswale.
- 4.44 Emorsgate EM1 – Basic General Purpose Meadow Mix (or similar approved) will be sown due to its species mix that tolerant of roadside conditions,.

4.45 The aim is to establish a meadow sward with greater ecological value than the existing verge and better suited to the prevailing conditions. Ground preparation is necessary to establish a clean seed bed into which a grass seed mix can be sown. To prepare a seed bed first remove weeds using repeated cultivation. Then plough or dig to bury the surface vegetation, harrow or rake to produce a medium tilth, and roll, or tread, to produce a firm surface.).

4.46 In order to establish grassland sward:

- Seed mix will be directly sown into the prepared ground by machine or by hand, at a rate of 40 kg/ha (4 g/m<sup>2</sup>). prepared ground must be free from weeds and raked to a medium tilth, then lightly rolled to ensure effective seed/soil contact.
- Once sown, the seed should be lightly pressed into the seedbed by rolling or treading.
- Early autumn or spring sowing once the ground has drained is preferred as most plants need time to mature enough to withstand flooding
- Sowing must take place when conditions are warm and moist, and so winter and drought periods must be avoided.

**Table - Proposed Meadow Mix for Wetlands – Emorsgate EM8**

%	Scientific name	Common name
<b>Wildflowers (10% of Overall mix)</b>		
0.30	Achillea millefolium	Yarrow
1.60	Centaurea nigra	Common Knapweed
1.60	Leucanthemum vulgare	Oxeye Daisy
1.60	Malva moschata	Musk Mallow
1.60	Plantago lanceolata	Ribwort Plantain
1.60	Poterium sanguisorba ssp sanguisorba	Salad Burnet
0.70	Ranunculus acris	Meadow Buttercup
0.50	Rhinanthus minor	Yellow Rattle
0.50	Daucus carota	Wild Carrot
<b>Grasses (90% of overall mix)</b>		
9.00	Agrostis capillaris	Common Bent
31.50	Cynosurus cristatus	Crested Dogstail



27.00	Festuca rubra	Red Fescue
4.50	Phleum bertolonii	Smaller Cat's-tail
18.00	Poa pratensis	Smooth-stalked Meadow-grass

## 5 Proposed 5-Year Management Prescriptions

- 5.1 The following section outlines the management responsibilities and prescriptions for the landscape mitigation planting over a period of 5 years.
- 5.2 The following management prescriptions should be presented to all future owners and managers of the Site as management guidance.
- 5.3 The management company employed for maintaining the Site will be required to adopt these prescriptions for a period of 5 years post completion. Should for any reason a replacement contractor is appointed, these prescriptions should be similarly adopted under contract.
- 5.4 Any material changes to these prescriptions should be approved in writing by the local planning authority.

### Native Species Hedgerow and Hedgerow Trees Management

- 5.5 Hedge trimming will be undertaken regularly to encourage bushy growth and to increase its value for wildlife. Hedgerows should be allowed to grow out to a height of approximately 2.5m and maintained at that height thereafter. Care should be taken to avoid damage to hedgerow trees during cutting.
- 5.6 All hedge trimming will be undertaken outside the bird nesting season (1<sup>st</sup> March – 31<sup>st</sup> August, weather dependent) to avoid disturbance to nesting birds.
- 5.7 The following will be undertaken annually to encourage establishment:
  - All shelters/guards and stakes will be checked, secured and replaced where necessary;
  - All plants re-firmed until sufficiently established;
  - Bark mulch will be topped up to ensure a consistent depth of 75mm to ensure sufficient weed suppression; and
  - Hand pulling of persistent weeds if not too excessive or treated using a spot herbicide treatment if more widespread.
- 5.8 Prune all hedgerow trees as required to maintain a canopy clear of the top of the hedgerow.
- 5.9 Shelters that have not biodegraded will be removed from all plants and will be disposed of off-site (subject to satisfactory establishment and growth) in year 5.
- 5.10 All newly planted hedgerow plants should be watered immediately after planting and again during periods of drought.

### Proposed Tree Planting

- 5.11 All tree pruning will be undertaken regularly to remove dead and dying branches and encourage healthy growth and to maintain a canopy clear of hedgerows, roadways and footways.
- 5.12 All tree pruning, other than works required on health and safety grounds, will be undertaken outside the bird nesting season (1<sup>st</sup> March – 31<sup>st</sup> August, weather dependent) to avoid disturbance to nesting birds.
- 5.13 The following will be undertaken annually to encourage establishment:
- All stakes and straps will be checked, secured and replaced where necessary;
  - All plants re-firmed until sufficiently established;
  - Bark mulch to the base of each tree will be topped up to ensure a consistent depth of 75mm to ensure sufficient weed suppression; and
  - Hand pulling of persistent weeds if not too excessive or treated using a spot herbicide treatment if more widespread.
- 5.14 All stakes and straps will be removed from all trees and will be disposed of off-site (subject to satisfactory establishment and growth) in year 5.
- 5.15 All newly planted trees should be watered immediately after planting and again during periods of drought. This should be done at a rate of 50 litres per tree and at weekly intervals during extended drought.

### Proposed Scrub Mix Planting

- 5.16 Pruning of all woody shrubs should be undertaken regularly to remove dead, dying and crossing branches and encourage healthy, bushy growth. Pruning should be undertaken not to inhibit flowering in subsequent seasons.
- 5.17 The following will be undertaken annually to encourage establishment:
- All plants re-firmed until sufficiently established;
  - Bark mulch throughout the planting beds will be topped up to ensure a consistent depth of 75mm to ensure sufficient weed suppression; and
  - Hand pulling of persistent weeds if not too excessive or treated using a spot herbicide treatment if more widespread.
- 5.18 All newly planted scrub plants should be watered immediately after planting and again during periods of drought. This should be done at weekly intervals during extended drought.

### **Proposed Native Species Meadow and Wetland Meadow Mixes**

- 5.19 In the first year, newly sown meadow areas should be mowed in mid-summer to a height of 40-60mm and all cut material removed from site or composted.
- 5.20 The cut meadow can then be kept short by mowing to the end of March the following year.
- 5.21 All residual perennial weeds such as docks should be dug out to prevent regrowth.
- 5.22 In the second and subsequent years and after flowering (in July or August) the meadow should be hay cut to a height of 50mm with the arisings left in situ to dry and allow the seeds to naturally disperse (usually 7 days).
- 5.23 After day 7 the arisings should be raked and disposed of away from site.
- 5.24 Should supplier information deviate from the above, those instructions should take priority.

## **6 Monitoring Visits and Remedial Actions**

### **Landscape Monitoring and Remedial Actions**

#### ***Tree, Shrub and Hedgerow Monitoring***

- 6.1 To ensure a reasonable level of establishment, newly planted areas of the site should be monitored and maintained for a period of 5 years following completion of planting works.
- 6.2 Site visits should be undertaken by a competent person, such as a landscape architect or the appointed ecologist.
- 6.3 Following each site visit a site visit report should be completed highlighting any remedial actions.

#### ***Remedial Actions***

- 6.4 Trees that have failed will be replaced in the subsequent planting season to achieve 100% survival across site.
- 6.5 Ornamental and hedgerow plants that have failed will be replaced in the subsequent planting season to achieve at least a 90% survival across site.
- 6.6 Newly planted hedgerows should be maintained free of any significant gaps to enable small mammals to disperse along the hedge line.

***Grassland Monitoring***

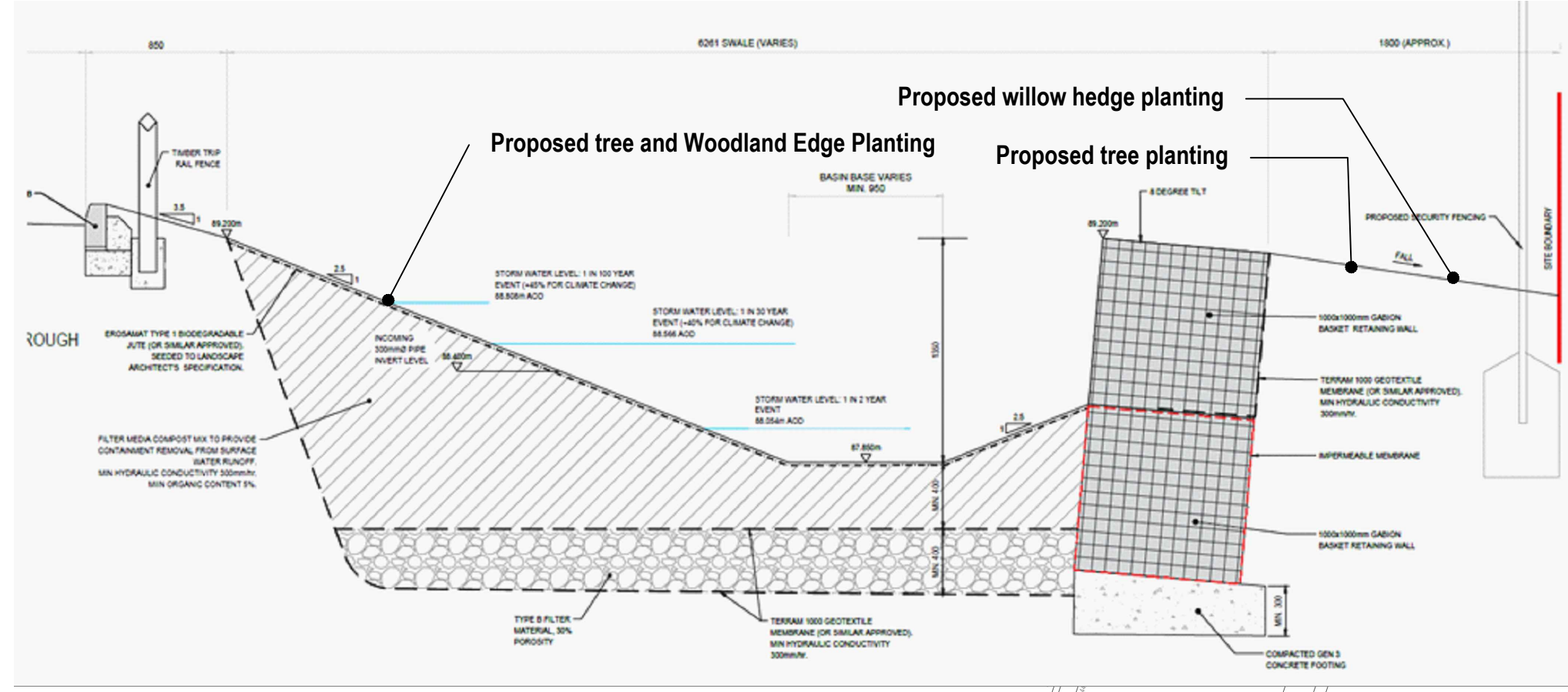
6.7 A site visit should be undertaken in spring (May) and summer (July/August) Year 1 to check the establishment of seed mix and weeds. Assuming that the seed mix has established successfully after Year 1, subsequent site visits will only be required in late-spring (May) in Years 2, 3 and 5 – a critical period for grassland establishment – to assess the success of grassland management.

***Remedial Action***

6.8 As necessary, revisions to the management should be recommended to facilitate successful establishment. Any remedial actions will be communicated to the Site Manager at the earliest opportunity.

## Appendix A: Landscape Masterplan





Agricultural Fields

**PLANTING SCHEDULE**

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**Proposed Tree Planting - Total: 12**

No.	Code	Species	Common name	Form	Age	Grith (cm)	Height (cm)	Root
4	Bp	Betula pendula	Silver birch	Standard	8-10	250-300	RB	
1	Ms	Malus sylvestris	Crab apple	Light Standard	8-10	200-250	RB	
6	lla	Ilex aquifolium	Holly	Standard	8-10	250-300	RB	
6	Ps	Pinus sylvestris	Scots Pine	Standard	8-10	250-300	RB	
4	Qi	Quercus ilex	Holm Oak	Standard	8-10	250-300	RB	

**Proposed Specimen Shrub - Total: 6**

No.	Code	Species	Common name	Form	Age	Height (cm)	Root
6	Ca	Corylus avellana	Hazel	Bushy/Feathered	-	125-150	RB

**Proposed Native Hedgerow Mix - Total Length: 74m planted at 5 per 1m, double staggered row**

No.	%	Code	Species	Common name	Age	Form	Height (cm)	Root
166	45	Cm	Crataegus monogyna	Hawthorn	2X	Feathered	40-60	BR
166	45	Ps	Prunus spinosa	Blackthorn	2X	Feathered	40-60	BR
38	10	Rc	Rosa canina	Dog Rose	1+1	Transplant	40-60	BR

**Proposed Willow Hedgerow - Total Length: 40m planted at 3 per 1m**

No.	%	Code	Species	Common name	Age	Form	Height (cm)	Root
120	100	Sa	Salix alba	White willow	1+2	Transplant	125-150	BR

**Proposed Native Species Woodland Mix - Total Area: 82m<sup>2</sup> planted at maximum 1 plant per m<sup>2</sup>**  
To be planted informally in random groups of 3.5 and 7.

No.	%	Code	Species	Common name	Age	Form	Grith (cm)	Height (cm)	Root	Container (L)
4	3	Ac	Acer campestre	Field Maple	1+1	Transplant	-	40-60	BR	-
3	2	Ap	Acer pseudoplatanus	Sycamore	1+1	Transplant	-	60-80	BR	-
6	5	Bp	Betula pendula	Silver birch	1+1	Transplant	-	80-100	BR	-
4	3	Cs	Cytisus scoparius	Common broom	-	Bushy	-	40-60	C	3L
6	5	la	Ilex aquifolium	Holly	-	Standard	8-10	250-300	RB	-
50	40	Ps	Pinus sylvestris	Scots Pine	-	Standard	8-10	250-300	RB	-
50	40	Qi	Quercus ilex	Holm Oak	-	Standard	8-10	250-300	RB	-
3	2	Ue	Ulex europaeus	Common gorse	-	Bushy	-	20-30	C	2L

**Proposed Shrub Mix - Total Area: 286m<sup>2</sup> planted at maximum 1 plant per m<sup>2</sup>**  
To be planted informally in random groups of 3.5 and 7.

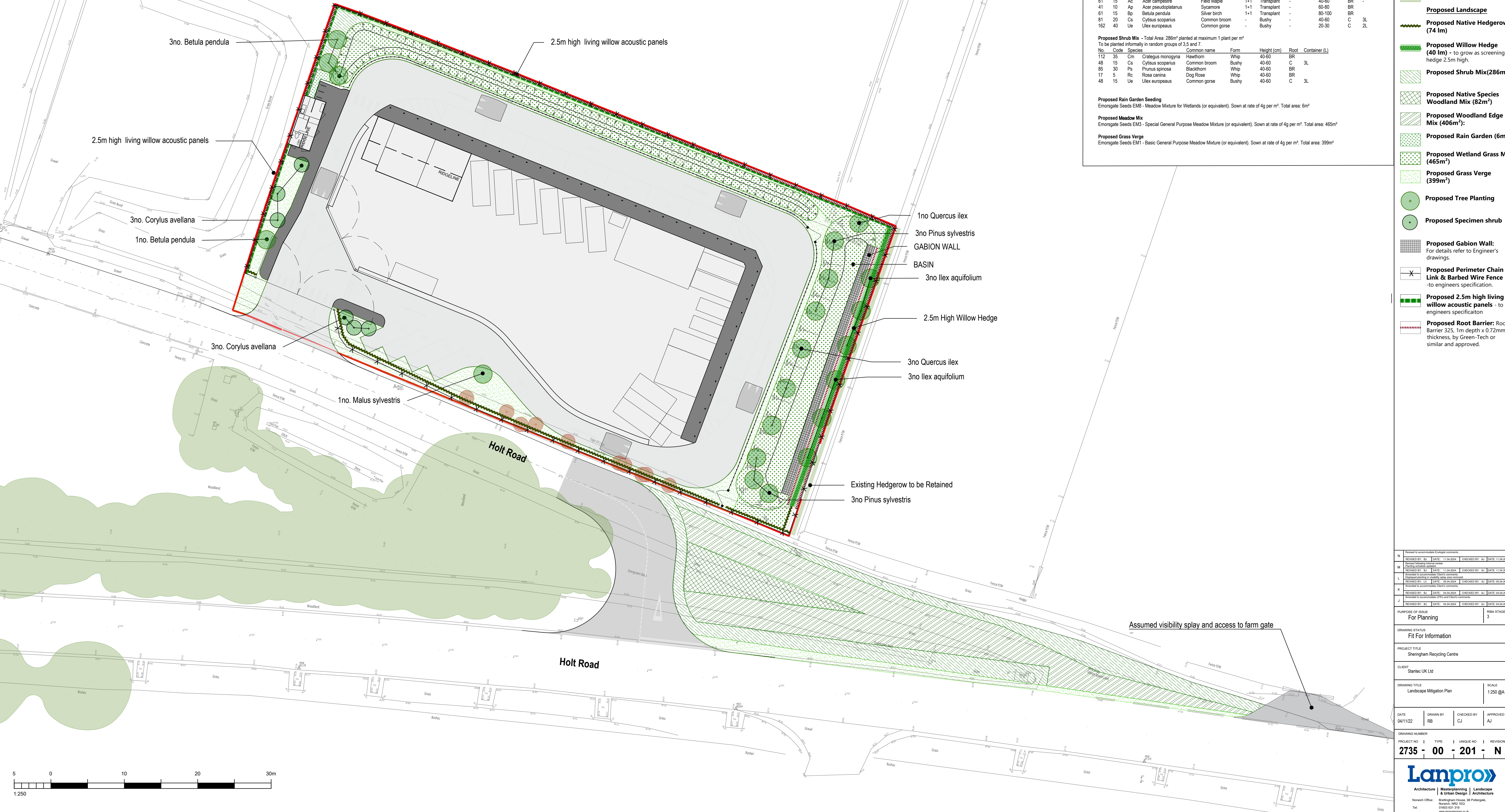
No.	%	Code	Species	Common name	Age	Form	Height (cm)	Root	Container (L)
112	35	Cm	Crataegus monogyna	Hawthorn	Whip	40-60	BR	-	-
48	15	Cs	Cytisus scoparius	Common broom	Bushy	40-60	C	3L	-
85	30	Ps	Prunus spinosa	Blackthorn	Whip	40-60	BR	-	-
17	5	Rc	Rosa canina	Dog Rose	Whip	40-60	BR	-	-
48	15	Ue	Ulex europaeus	Common gorse	Bushy	40-60	C	3L	-

**Proposed Rain Garden Seeding**  
Emergate Seeds EMB - Meadow Mixture for Wetlands (or equivalent). Sown at rate of 4g per m<sup>2</sup>. Total area: 6m<sup>2</sup>

**Proposed Meadow Mix**  
Emergate Seeds EM3 - Special General Purpose Meadow Mixture (or equivalent). Sown at rate of 4g per m<sup>2</sup>. Total area: 465m<sup>2</sup>

**Proposed Grass Verge**  
Emergate Seeds EM1 - Basic General Purpose Meadow Mixture (or equivalent). Sown at rate of 4g per m<sup>2</sup>. Total area: 399m<sup>2</sup>

- NOTES**
- KEY:**
- Site Boundary
  - Existing Landscape
  - Existing Vegetation to be Removed
  - Uncategorized Vegetation
  - Proposed Landscape
  - Proposed Native Hedgerow (74 lm)
  - Proposed Willow Hedge (40 lm) - to grow as screening hedge 2.5m high.
  - Proposed Shrub Mix (286m<sup>2</sup>)
  - Proposed Native Species Woodland Mix (82m<sup>2</sup>)
  - Proposed Woodland Edge Mix (406m<sup>2</sup>)
  - Proposed Rain Garden (6m<sup>2</sup>)
  - Proposed Wetland Grass Mix (465m<sup>2</sup>)
  - Proposed Grass Verge (399m<sup>2</sup>)
  - Proposed Tree Planting
  - Proposed Specimen shrub
  - Proposed Gabion Wall: For details refer to Engineer's drawings.
  - Proposed Perimeter Chain Link & Barbed Wire Fence - to engineers specification.
  - Proposed 2.5m high living willow acoustic panels - to engineers specification
  - Proposed Root Barrier: Root Barrier 325, 1m depth x 0.72mm thickness, by Green-Tech or similar and approved.



NO.	REVISION	BY	DATE	CHECKED BY	DATE
1	Issued for information	RB	11.04.2024	AJ	11.04.2024
2	Revised for client	RB	11.04.2024	AJ	11.04.2024
3	Revised for client	RB	11.04.2024	AJ	11.04.2024
4	Revised for client	RB	11.04.2024	AJ	11.04.2024
5	Revised for client	RB	11.04.2024	AJ	11.04.2024
6	Revised for client	RB	11.04.2024	AJ	11.04.2024
7	Revised for client	RB	11.04.2024	AJ	11.04.2024
8	Revised for client	RB	11.04.2024	AJ	11.04.2024
9	Revised for client	RB	11.04.2024	AJ	11.04.2024
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## Appendix B: Landscape Maintenance Schedule



<b>Management of New Trees</b>	
<b>Aims</b>	<b>Post Construction Years 1-5</b>
To ensure the successful establishment of new trees	<p>2 visits per annum: Check for dead or dying trees and replace failed/failing specimens with like for like (species/ specification).</p> <p>Water regularly using the irrigation pipe during establishment (first 24 months) and in drought conditions in first 5 years to ensure establishment and continued thriving of planting.</p> <p>Check tree and remove dead or damaged branches. Formative prune Years 3 &amp; 5.</p> <p>Check stakes to ensure that they are secure and are not causing damage to the tree. Check tree ties &amp; adjust if required annually.</p> <p>Check tree guards and maintain tree integrity.</p>
<b>Objectives</b>	
Establish tree canopy and good root system quickly	Maintain weed free 1m diameter area at base of tree by hand or when unavoidable using suitable translocated herbicide. Apply during growing season in favourable weather conditions as per manufacturer's instructions. Note: Avoid spray drift.
Control competition from weeds	Apply mulch on planting and top up as required thereafter.
Provide conditions that will ensure survival of trees	During spring apply fertiliser and top up bark mulch ring to tree to maintain a max of 50mm depth.
Provide visual variety and wildlife benefits	Remove litter off site after every site visit.

<b>Management of New Hedges</b>	
<b>Aims</b>	<b>Post Construction Years 1-5</b>
To maintain healthy and safe hedge.	2 visits per annum: Check for dead or dying hedging plants and replace with like for like (species / specification).
To define boundaries and offer privacy / screening.	Check hedging support and repair if damaged.
	Trim hedge to height and shape as per original design (0.5-1.5m height for ornamental & 1.5-2.0m for native) after bird nesting season. Cut back to previous seasons growth
<b>Objectives</b>	
Provide conditions that will ensure survival, persistence and spread of plants.	12 visits per annum: Maintain weed free area 500mm width to each side of hedge centreline using suitable translocated herbicide. Apply during growing season in favourable weather conditions as per manufacturer's instructions. Note: Avoid spray drift.
To ensure vigorous growth and effective screening.	During spring apply fertiliser to hedges to manufacturers recommended rates and top up bark mulch to maintain a max of 75mm depth.
Provide an attractive boundary Feature.	
Increase opportunities for Biodiversity and wildlife corridors.	Remove litter off site after every site visit.

<b>Additional Instructions for New Willow Hedges and Living Willow Screens</b>	
<b>Post Construction Years 1-5</b>	
2 visits per annum:	
Check to ensure root barrier fabric is intact and effective in controlling root spread and preventing incursion into adjacent land	
Prune face of plants back hard at each side immediately after flowering to prevent self seeding into adjacent land	

<b>Management of New Shrub Planting</b>	
<b>Aims</b>	<b>Post Construction Years 1-5</b>
Provide softening of any built structures / environment and reflect and enhance local character and distinctiveness.	2 visits per annum:  Check for dead or dying plants and replace with like for like (species/ specification) in the next available planting season.
<b>Objectives</b>	Maintain shrub planted areas free of weeds using combination of cultivation, mulching and suitable translocated herbicide.
Establish plant cover quickly	Apply during growing season in favourable weather conditions as per manufacturer's instructions. Note: Avoid spray drift.
Control competition from weeds	Thin, trim and shape plants if necessary, appropriately to species, location, season, and stage of growth, leaving a well-balanced natural appearance.
Provide conditions that will ensure survival, persistence and natural spread of ground cover plants.	Remove litter off site after every site visit.
Provide visual variety in the terms of height, colour, form and texture appropriate to local character.	Water as necessary to ensure establishment and continued thriving of planting
Provide habitats and where defensive plants are used, restrict anti-social behaviour.	

<b>Management of New Meadow Seeding</b>	
<b>Aims</b>	<b>Post Construction Years 1-5</b>
To establish attractive, diverse and locally appropriate wildflower areas to enhance character and biodiversity.	Throughout year and as/ when required:  <b>Specific supplier instructions to be followed if they deviate from the following:</b>  Water with a fine spray during prolonged periods of drought to ensure survival and maintain thriving grass sward.
<b>Objectives</b>	Annually: After flowering in July or August take a hay cut.
Control competition from weeds and invasive species.	Cut back with a scythe, petrol trimmer or tractor mower to 50mm.
To benefit biodiversity.	Leave the 'hay' to dry and shed seed for 7-14 days then remove from site.
The maintenance regime adopted will be in accordance with the supplier's recommendations. Typical activities may include those identified in this schedule.	A second cut shall be carried out in October.
To establish an even wildflower and grass sward quickly, that will provide a visual contrast to the adjacent amenity grass and hard surfaced areas.	Mow the re-growth through to late autumn/winter to 50mm and again in spring if required.
	Trim edges to footpaths/ hard landscape
	Remove litter & debris off site after every site visit.

<b>Management of New Native Woodland and Woodland Edge Mixes</b>	
<b>Aims</b>	<b>Post Construction Years 1-5</b>
<p>To maintain appropriate, healthy and safe wooded edge or area.</p> <p>To define boundaries and offer privacy/ screening.</p>	<p>4 visits per annum:</p> <p>Check for dead or dying plants and replace with like for like (species/ specification) in the next planting season.</p> <p>Water during drought conditions in years 1-2.</p>
<b>Objectives</b>	<p>Check for damaged limbs. Remove and treat wounds where necessary</p>
<p>Provide conditions that will ensure survival, persistence and spread of plants</p> <p>To reinforce boundary and define screening edge.</p> <p>Ensure appropriate layers of planting establish and thrive.</p> <p>To promote biodiversity.</p> <p>To support local character.</p>	<p>Check tree ties &amp; loosen if required annually</p> <p>Check stakes to ensure that they are secure and are not causing damage to the tree</p> <p>Check tree guards and maintain tree integrity</p> <p>Maintain weed free 1m diameter area at base of tree using suitable translocated herbicide. Apply during growing season in favorable weather conditions as per manufacturer's instructions. Note: Avoid spray drift.</p> <p>Remove litter off site after every site visit.</p>

## Appendix C: Annual Maintenance Schedule

TREES		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEPT	OCT	NOV	DEC	NOTES
1	Watering				X	X	X	X	X	X				Daily if required in summer
2	Check ties, staking and strimmer guard			X						X				Replace if damaged. Consider removal after 5yrs
3	Weed control (by hand)	X	X	X	X	X	X	X	X	X	X	X	X	As specified
4	Weed control (chemical)					X		X						And as necessary
5	Application of mulch					X					X			To 75mm as required
6	Apply fertiliser			X										
7	Pest and disease control			X	X	X	X	X	X	X	X			As required
8	Replacement planting (trees)	X	X	X								X	X	By agreement as schedule

HEDGES														
	TASK	JAN	FEB	MAR	APRIL	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	NOTES
1	Weed control (by hand)	X	X	X	X	X	X	X	X	X	X	X	X	As specified
2	Weed control (chemical)					X		X						And as necessary
3	Watering				X	X	X	X	X	X				Daily if required in summer
4	Top up mulch					X					X			To 75mm as required
5	Apply fertiliser			X										
6	Firm up plants			X						X				
7	Pest and disease control			X	X	X	X	X	X	X	X			As required
8	Trimming hedgerow						X			X				
9	Willow hedge & willow screens			X	X						X			Prune front and rear face of hedge immediately after flowering to prevent self seeding April/May – at the same time check root barriers and repeat barrier check in autumn

Woodland Mix and Woodland Edge Planting														
	TASK	JAN	FEB	MAR	APRIL	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	NOTES
1	Weed control (by hand)	X	X	X	X	X	X	X	X	X	X	X	X	As specified
2	Weed control (chemical)					X		X						And as necessary
3	Watering				X	X	X	X	X	X				Through dry periods as required until established
4	Firm up plants			X						X				
5	Pest & disease control			X	X	X	X	X	X	X	X			As required
6	Thin out planting			X							X			As required
7	Replacement planting	X	X	X								X	X	By agreement as schedule
8	Works to trees		X								X			As required

<b>WILDFLOWER SOWN AREAS</b>		JAN	FEB	MAR	APRIL	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	NOTES
1	Litter collection and removal from site	X	X	X	X	X	X	X	X	X	X	X	X	Keep litter free at all times
2	Watering of newly seeded areas through times of drought Year 1				X	X	X	X	X	X				Daily if required in very dry conditions
3	Cut to a height of 25 - 35mm, remove arisings						X	X						Leave 'Hay' to shed seed for 7-14 days
4	<b>Refer to supplier information for each specific seed mix for additional instructions that may override Item 3 above</b>													