macroworks

LANDSCAPE MANAGEMENT AND MAINTENANCE SCHEDULE

Drumdowney Solar Farm

November 2025

1. LANDSCAPE MANAGEMENT & MAINTENANCE SCHEDULE

1.1. PLANT MATERIAL

All plant material shall be good quality nursery stock, free from fungal, bacterial or viral infection, aphids, red spider or other insect pests and any physical damage. Planting shall be in accordance with BS4428: 1989 Code of practice for general landscape operations (excluding hard surfaces).

All plants shall have been nursery grown in accordance with good practice and shall be supplied through the normal channels of the wholesale nursery trade. They shall have the habit of growth that is normal for the species. Country of origin must be shown in all cases for species grown from seed.

1.2. PLANT SPECIES

It is imperative to use native Irish species in so far as possible as they are adapted to Irish conditions and therefore more likely to thrive compared to imported stock. Selected species should also represent woodland and hedgerows in the surrounding environs although non-native species are not to be used, unless otherwise agreed with the Planning Authority. All plants supplied shall be exactly true to name as shown in the plant schedules. Varieties with variegated and/or coloured leaves will not be accepted, and any plant found to be of this type upon leafing-out shall be replaced by the contractor. Bundles of plants shall be marked in conformity with BS3936: Part 1: 1965 and BS3936: part 4: 1966. The nursery supplier shall replace any plants which, on leafing out, are found not to conform to the labels.

Hedgerow Planting:

The composition of hedgerow will consist of three layers; Primary Structure (60%), Secondary Structure (30%) and Shrub Species Structure (10%).

- The primary structure of proposed hedgerows will comprise of 60% of total stock and is to consist of *Crataegus monogyna* (Hawthorn). It is important that Hawthorn saplings are of native Irish stock, as imported stock is not known to be as vigorous or thorny.

- Secondary structure to consist of a mix of *Prunus spinosa* (Blackthorn) and *Ilex aquifolium* (Holly). Secondary structure will make up 30% of the overall hedgerow stock with species such as Ilex included to produce a year round screening effect.

- Remainder of hedgerows (10%) to comprise of a mix of the following species: *Viburnum opulus* (Guelder rose), *Sambucus nigra* (Elder), *Corylus avellana* (Hazel), *Rosa canina* (Dog rose), *Euonymus europaeus* (Spindle) or in certain cases native willow shrubs (*Salix cinerea, Salix aurita, Salix caprea*).

1.3. PROTECTION

PROPOSED PLANTING

The interval between the lifting of stock at the heeling-in area and planting on site is to be kept to an absolute minimum. Plants shall be protected from drying out and from damage in transport. All stock awaiting planting on site shall be stored in a sheltered place protected from the wind and frost and from drying out. Except when heeled-in, all plants shall be protected in polythene at all times until planted into their final position on site.

The level of protection needed depends on whether the adjoining lands will be used for grazing during the periods of planting establishment. Rabbit-proof guards and/or rabbit proof fencing shall be provided to all newly planted hedgerow species where applicable.

DAMAGE

On completion of planting any broken branches shall be pruned and any areas of damaged bark neatly pared back to sound tissue.

WATERING / FERTILISERS

All trees and shrubs shall be soaked in water for one hour prior to planting. Fertilisers shall conform to BS 5581: 1981. In the case of granular fertiliser being added to plantings, it must be mixed through and incorporated into the base of the planting hole and covered over in order to avoid roots of plants coming in direct contact. Approved slow release fertiliser granules are to be incorporated into backfill material at manufacturers specified rates. Fertilisers shall be supplied in sealed bags or containers bearing the manufacturers name, the net weight and analysis.

1.4. PLANTING METHODS

STAKING

Younger hedgerow plants should not require staking, however, in such cases where advanced nursery stock is needed, staking may be required.

Standard Trees

Round stakes shall be of peeled larch, pine or Douglas fir, preserved with a water-borne copper chrome arsenic composition in accordance with I.S. 131. Stakes shall be round, minimum 1.6m long, 75mm in diameter. Set stakes vertically in the pit, to the western side of the tree station, and drive before planting. Drive stake with a wooden maul or cast-iron headed drive. Sledgehammer should not be used. Set stakes vertically in the pit and drive before planting. Drive stake with a drive- all, wooden maul or cast-iron headed mell.

Tree Ties

For standard trees, tree ties shall be of rubber, PVC or proprietary fabric laminate composition and shall be strong and durable enough to hold the tree securely in all weather conditions for a period of three years. They shall be flexible enough to allow proper tightening of the tie. Ties shall be min. 25mm wide for 120cm height trees and min. 38mm for larger sizes. They shall be fitted with a simple collar spacer to prevent chafing. Two ties per tree shall be applied to standard trees. Ties shall be nailed to the stake with one galvanised nail.

TREE PLANTING

Trees shall be planted at the same depth as in the nursery, indicated by the soil mark on the stem of the tree. They shall be planted in the centre of the planting pit and planted upright. Stones or other rubbish over 75mm shall be removed. Supply and drive the stake 800mm into the ground for standard trees. Backfill planting hole with excavated topsoil, and remove all stones and debris, firming plant into position. Upon completion of planting, all pits hall be raked over lightly to leave an even surface and neat appearance. All stones greater than 25mm diameter to be removed. Provision should be made for the watering of root-balled trees in the first year following planting.

Small Trees/Large Shrubs

Excavate tree pits to 750mm x 750mm x 750mm deep. Farmyard manure 800mm deep and 100g of fertiliser shall be applied to each tree pit prior to planting. Farmyard manure shall consist of predominantly of faecal matter and shall be free of loose, dry straw and undigested hay. It shall be free of surplus liquid effluent. Install tree support system as per above. Fill planting hole with topsoil, and remove all stones and debris, firming plant into

WHIP PLANTING 40-60CM, 80-100CM, 100-120CM

Remove vegetation by hand and create notch to depth as necessary to fully contain the length of the plant root system using standard steel spade, place plant in notch, spreading roots to ensure the roots are not constricted in the planting notch. (Notch should be made at right angles to line of hedge). Using the ball of the foot, press the edges of the notch together taking care not to scrape the bark of the plant. Ensure that the root collar finishes level with the ground and that the plant finishes upright.

Planting should not take place during prolonged wet periods, periods of frost or periods of drought. The principal hedgerow planting types are detailed below.

Bolstering of Existing Hedgerow (TYPE 1 – Hedgerow)

- Bolstering of hedgerows to consist of feathered whips (of various sizes) in staggered rows at a spacing of 600mm.
- 'Under-planting' to consist of a single row of whips to the development side of existing tree lines and hedgerows
- 'Inter-planting' to consist of whips and advanced nursery stock (where applicable) at 600mm centres to fill gaps in existing tree lines and hedgerows.
- Advanced nursery stock to be used for 'gapping-up' purposes. The location and density of tree planting to be determined by the landscape architect prior to the ordering of advanced nursery stock.
- All whips within the primary and secondary structure to be a minimum height of 90-120cm and the other shrub species to be a minimum height of 60-90cm.

Table 1.1 Hedgerow Type 1 Planting Schedule

Botanical name	Common name	Size	%
Primary structure;			
Crateagus monogyna	Hawthorn	90-120cm (30%) / 8-10cm girth advanced stock (30%)	60%
Secondary structure;			
Prunus spinosa	Blackthorn	90-120cm	15%
Ilex aquifolium	Holly	90-120cm	15%
Shrub species structure			
Corylus avellana	Hazel	60-90cm	2.5%
Viburnum opulus	Guelder rose	60-90cm	2.5%
Rosa canina	Dog-rose	60-90cm	2.5%
Euonymus europaeus	Spindle	60-90cm	2.5%

Newly Planted Sections of Hedgerow (TYPE 2 – Hedgerow):

- New sections of hedgerow to consist of feathered whips (of various sizes) and advanced nursery stock (standard trees) in double staggered rows, at a spacing 600mm apart with a gap of 600mm between rows.
- 1/3rd of the primary structure to consist of advanced nursery stock (standard trees) and to be evenly distributed to create an instant screening effect upon planting.
- All other native species will be planted as whips, with the primary and secondary structure to be a minimum height of 90-120cm and the other shrub species to be a minimum height of 60-90cm.

Table 1.2 Hedgerow Type 2 Planting Schedule

Botanical name	Common name	Size	%
Primary structure;			
Crateagus monogyna	Hawthorn	90-120cm (30%) / 8-10cm girth advanced stock (30%)	60%
Secondary structure;			
Prunus spinosa	Blackthorn	90-120cm	15%
Ilex aquifolium	Holly	90-120cm	15%
Shrub species structure			
Corylus avellana	Hazel	60-90cm	2.5%
Viburnum opulus	Guelder rose	60-90cm	2.5%
Rosa canina	Dog-rose	60-90cm	2.5%
Euonymus europaeus	Spindle	60-90cm	2.5%

CONTAINER GROWN SHRUBS, GRASSES, PERENNIALS P9 /20-30 / 30-40CM

Excavate planting hole to a dept of 500mm x 500mm x 500mm deep; the base to be broken to a depth of 50mm and glazed sides roughened. Apply farmyard manure to base of hole to a depth of 150mm and 30g of fertilizer per planting pit. Backfill planting hole with excavated topsoil, and remove all stones and debris, firming plant into position.

CONTAINER GROWN SHRUBS, GRASSES, PERENNIALS, 40-60cm

Excavate planting hole to a dept of 500mm x 500mm x 500mm deep; the base to be broken to a depth of 50mm and glazed sides roughened. Apply farmyard manure to base of hole to a depth of 150mm and 50g of fertilizer per planting pit. Backfill planting hole with excavated topsoil, and remove all stones and debris, firming plant into position.

FIELD MARGINS/GRASS SEEDING

Field margins to be planted and/or managed in accordance with the BRIDE project EIP techniques. A mix of cereal and wildflower plants (native species of local provenance) to provide food and cover for Yellowhammer and other bird species. Mix to be finalised in conjunction with the project ecologist. A minimum width of 2m from the base of the hedgerow is recommended. It will be important to flail these margins every year during the period of September 15th to February 28th. A full management regime in accordance with best practice will be adhered to, ensuring that the species will thrive through natural regeneration. Field margin management techniques and wildflowers have been shown to increase

biodiversity on rural lands, with numbers of pollinators clearly benefiting from these food sources and an increased presence of other animals in these margins being evident as well when compared to improved grassland margins managed more intensely.

1.5. MANAGEMENT AND MAINTENANCE

HEDGEROWS

Immediate aftercare of newly planted hedgerows is essential for them to become established.

- In the first growing year it is important to control the development of competing vegetation and weeds along the base of the hedgerow. This will help the overall establishment of the lower branches of the plants, giving a more favourable dense basal layer to the hedgerow. Manual weeding is preferable as chemical herbicides can damage young hedgerow plants (Herbicides will not be used during aftercare). Mulching immediately after planting will also help to suppress any weeds. Noxious weeds (Dock, Thistle, Ragwort) shall not be allowed to flower and all such weeds shall be killed or removed at each maintenance visit.

- Within the first summer season any dead or dying stock is to be counted, tagged and replaced during the following planting season. Occasional plant failure is not of particular concern as this can lead to more 'natural' looking hedgerows.

- Hawthorn can be trimmed back to encourage new growth at its base. This will ensure and dense, bushy plant habit in the long term.

- Once established new sections of hedgerow should be trimmed on a 2-3 year rotation to encourage flowering pollinators and fruiting for birds. This will encourage faster hedgerow growth, which will ensure a natural, bushy form. When trimming hedgerows it is important to use reciprocating bar cutters that slice through branches leaving a neater cut. This gives the plants a better chance of healing without infection. Hedgerow trimming and maintenance should only take place between the 1st of September and the last day of February to avoid harming nesting birds.

- Existing sections of hedgerow should also be trimmed on a 2-3 year rotation to encourage gradual consolidation to a minimum height of 4m and to promote dense and bushy habit. Trees and hedgerows are not to be cut during nesting and breeding season between the **1st March and the 31st August**, in order to protect nesting birds.

- If gaps become apparent in the hedgerows over time, long-term management solutions (20-30 year intervals) such as laying or coppicing may be needed and will help to retain the hedgerows biodiversity, density and structure.

- Once weed growth is not highly prevalent within the wild grass seeding area, they will only need to be trimmed back on an annual basis, usually in late August.

FIELD MARGINS/GRASS SEEDING

Field Margins to be managed in line with the Bride Project techniques as set out below.

- It will be important to flail this margin every year (Sept. 15th to Feb.28th) to cut back the vegetation and prevent the hedgerow from encroaching onto the field margin. Cutting the ground vegetation will allow light down to ground level and thus encourage wild flowers to germinate the following year.

- Allowing livestock to access it (Sept, 15th to Feb. 28th) will also be beneficial. However, this may not be practical.

- It is very important when spreading fertiliser, to shut off the disc on the hedgerow side to prevent fertiliser from reaching the field margin – wild flowers will not thrive in nutrient-rich soil and wasting fertiliser in this area is costly to the farmer.

- Apart from improving biodiversity, perhaps a more important reason to increase the field margin width is to reduce the need for chemical control of vegetation by allowing a hedge cutter to control vegetation near an electric fence.

GENERAL PLANTING AFTERCARE

Planting shall be tended for 36 months from the date of completion of all Works.

Weeding

Throughout the aftercare period keep all shrub planting areas weed free. For tree planting keep an area of 1 m. in diameter around each planting station in a weed free condition. This will be achieved by manual weed control. No herbicides shall be used for weed control. A minimum of 3 visits for weed control will be required during the growing season. All injurious weeds, will be removed from the remainder of each transplant tree or shrub plot. The growth of herbaceous material between the weed free planting stations should be controlled by strimming twice per year.

Stakes, Trees, Shrubs and Ties

All stakes, trees and shrubs shall be maintained in firm positions within the ground and with all ties securely fixed and adjusted to allow for the increase in stem girth.

Replacements

Plants that fail to thrive, are removed, uprooted or destroyed or die during the aftercare period will be replaced with equivalent plants as soon as possible during the following planting season. Replacements shall be of the same size and species as that originally specified unless otherwise agreed with the

Planning Authority. Defects shall be made good by the end of the planting season of the year in which the defect is identified.

- Shrub areas – all dead stock shall be replaced at the end of each growing season to obtain 100% stocking
- Cell grown/root trainers and transplant planting – throughout the aftercare period, all dead stock shall be replaced at the end of each growing season to obtain 90% stock providing that failures are evenly distributed throughout both planting areas and species
- Standard trees – throughout the aftercare period all dead and diseased stock shall be replaced at the end of each growing season.

MAINENANCE SCHEDULE

Tasks	***WINTER***	***SPRING***	***SUMMER***	***AUTUMN***
General Tasks;				
Landscape Architect inspection				
Replacing failed plants				
Refirming				
Pest and disease control				
Check Plant supports				
General pruning				
Tasks for Whips/Transplants;				
Weed control				
Slow release fertiliser				
Tasks for Trees;				
Weed control				
Slow release fertiliser				
Tasks for field margin/wildgrass seeding areas;				
Flail/Mow				
Weed control				

MONITORING

A qualified Landscape Architect should monitor the site on an annual basis for the duration of the 3 yr Maintenance and Management Schedule and make adjustments to the Management and Maintenance Strategy where required.