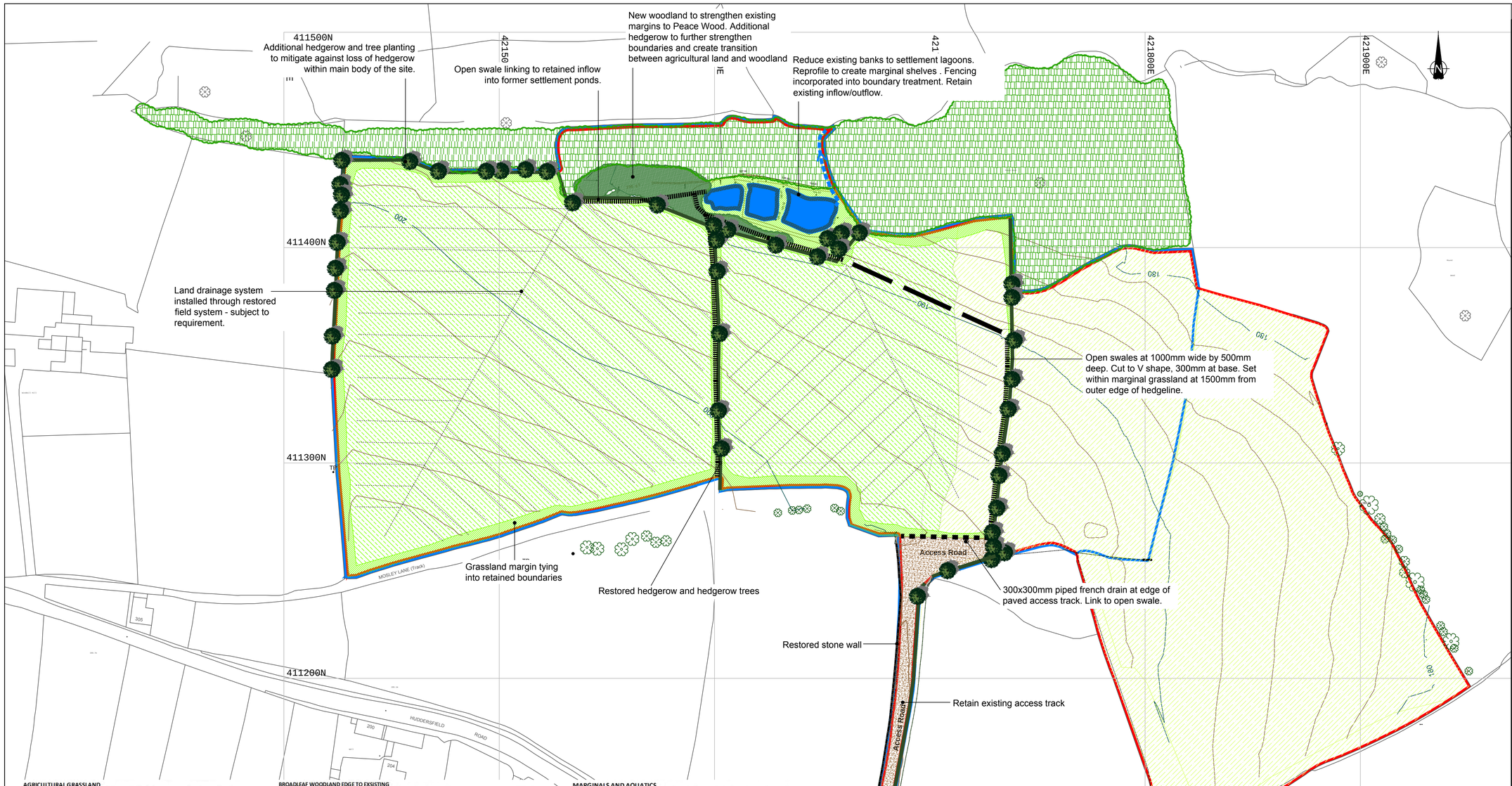

AGRICULTURAL GRASSLAND

Reinstatement of agricultural grassland British Seedhouses A25 (Agricultural Reinstatment) or similar Rygrass/White clover mix

Suitable for short term stabilisation of restored agricultural land, and future use as grazing or hay crop

Species	% mix
ABERZEST Perennial Ryegrass	27%
ABERAVON Perennial Ryegrass	20%
ABERDART Perennial Ryegrass	20%
ABERSTAR Perennial Ryegrass	20%
ABERACE Miniature White Clover	6.50%
PRESTO Timothy	6.50%

Sowing Rate 8g/m²

MARGINS AND HABITAT TRANSITION GRASSLAND

Margins and banks to retained waterbodies, woodland edge and hedgerow margins to be seeded with Emorsgate EH1 mix

Grass mix		% mix
Agrostis capillaris	Common Bent	10
Anthoxanthum odoratum	Sweet Vernal-grass (w)	2
Brachypodium sylvaticum	False Brome (w)	6
Cynosurus cristatus	Crested Dogstail	35
Deschampsia cespitosa	Tufted Hair-grass (w)	1
Festuca rubra	Slender-creeping Red-fescue	26

Wildflower mix		% mix
Achillea millefolium	Yarrow	0.5
Agrimonia eupatoria	Agrimony	1
Alliaria petiolata	Garlic Mustard	1.5
Centaurea nigra	Common Knapweed	2
Clinopodium vulgare	Wild Basil	0.4
Galium album - (Galium mollugo)	Hedge Bedstraw	2
Geum urbanum	Wood Avens	2
Hypericum perforatum	Perforate St John's Wort	0.2
Leucanthemum vulgare	Oxeye Daisy	1.4
Plantago lanceolata	Ribwort Plantain	1
Primula veris	Cowslip	0.5
Silene dioica	Red Campion	2
Silene vulgaris	Bladder Campion	1.5
Stachys sylvatica	Hedge Woundwort	1
Torilis japonica	Upright Hedge-parsley	1.5
Tragopogon pratensis	Goat's-beard	0.5
Vicia cracca	Tufted Vetch	1

Sowing Rate 4g/m²

BROADLEAF WOODLAND EDGE TO EXSISTING

Planting substrate - Minimum of 300mm subsoil and overburden.

Planting spacing to be determined on site - to vary between 750mm to 2500mm centres

Species		% mix	Type	Height	Grouping
Alnus glutinosa	Alder	10	b/r transplant - seed raised	60-90cm	3No. -10No.
Betula pendula	Birch	30	b/r transplant - seed raised	60-90cm	3No. -10No.
Corylus avellana	Hazel	5	b/r transplant - seed raised	60-90cm	3No. -10No.
Ilex aquifolium	Holly	10	3ltr Container grown - seed raised	45-60cm	3No.
Quercus petraea	Oak	35	b/r transplant - seed raised	60-90cm	3No. -10No.
Sorbus aucuparia	Rowan	10	b/r transplant - seed raised	60-90cm	5No.

BROADLEAF WET WOODLAND TO POND EDGE

Planting substrate - As existing adjacent to silt lagoons

Planting spacing to be determined on site - to vary between 750mm to 2500mm centres

Species		% mix	Type	Height	Grouping
Alnus glutinosa	Alder	35	b/r transplant - seed raised	60-90cm	3No. -10No.
Betula pubescens	Birch	30	b/r transplant - seed raised	60-90cm	3No. -10No.
Quercus petraea	Oak	5	b/r transplant - seed raised	60-90cm	3No. -10No.
Salix caprea	Goat willow	15	b/r transplant - seed raised	60-90cm	3No. -10No.
Salix cinerea	Grey willow	15	b/r transplant - seed raised	60-90cm	3No. -10No.

WOODLAND UNDERSTORY AND TRANSITIONAL SCRUB

Planting substrate - Minimum of 300mm site topsoil and overburden.

Planting spacing to be determined on site - to vary between 400mm to 1000mm centres

Species		% mix	Type	Height	Grouping
Corylus avellana	Hazel	20	b/r transplant - seed raised	60-90cm	5No. -10No.
Crataegus monogyna	Hawthorn	35	b/r transplant - seed raised	60-90cm	5No. -10No.
Ilex aquifolium	Holly	5	3ltr Container grown - seed raised	45-60cm	5No. -10No.
Malus sylvestris	Crab apple	10	b/r transplant - seed raised	60-90cm	5No. -10No.
Salix cinerea	Grey willow	15	b/r transplant - seed raised	60-90cm	5No. -10No.
Sorbus aucuparia	Rowan	10	b/r transplant - seed raised	60-90cm	5No. -10No.
Rosa arvensis	Field Rose	5	b/r transplant - seed raised	60-90cm	5No. -10No.

HEDGEROW MIX

Planting substrate - as agricultural fields - 800mm subsoil, 300mm topsoil

Planting spacing to be determined on site - to be at 400mm centres

Species		% mix	Type	Height
Corylus avellana	Hazel	15	b/r transplant - seed raised	60-90cm
Crataegus monogyna	Hawthorn	50	b/r transplant - seed raised	60-90cm
Prunus spinosa	Blackthorn	20	b/r transplant - seed raised	60-90cm
Ilex aquifolium	Holly	5	3ltr Container grown - seed raised	45-60cm
Rosa arvensis	Field Rose	5	b/r transplant - seed raised	45-60cm
Rosa canina	Dog Rose	3	b/r transplant - seed raised	45-60cm
Sambucus nigra	Elder	2	b/r transplant - seed raised	60-90cm

HEDGEROW TREES *

Double staked trees; stakes to be minimum of 1600mm above finished ground levels to ensure trees are partially protected during hedge cutting works. Trees to be randomly spaced and located on site prior to hedge planting. Each tree pit to be 900x900x900 deep, backfilled with as dug topsoil. Bottom 200mm to tree pit to be broken up prior to planting.

Botanical Name		Height in cm	% mix	Spacing
Quercus petraea	Oak	14-16cm girth	50	As shown
Acer campestre	Field Maple	14-16cm girth	50	As shown

* Location of proposed hedgerow trees is indicative, with final locations to be agreed with Landowner and LPA. Minimum tree replacements to be at a ratio of 2:1.

MARGINALS AND AQUATICS

Preplanted coir mattresses(c. 1m²) to be located at 10metre spacing within existing waterbodies.

Depth below mean water level - 200 - 400mm

Species to include from:

Caltha palustris	Marsh marigold	5	50-100/2-3yrs plug
Cardamine pratensis	Lady's smock	6	50-100/2-3yrs plug
Filipendula ulmaria	Meadowsweat	8	50-100/2-3yrs plug
Iris pseudacorus	Iris	15	50-100/2-3yrs plug
Juncus effusus	Soft rush	9	50-100/2-3yrs plug
Lychnis flos-cuculi	Ragged robin	10	50-100/2-3yrs plug
Lythrum salicaria	Purple loosestrife	4	50-100/2-3yrs 0.5ltr
Mentha aquatica	Water mint	20	50-100/2-3yrs plug
Myosotis scorpoides	Water forget-me-not	16	50-100/2-3yrs plug
Potentilla palustris	Marsh cinquefoil	7	50-100/2-3yrs plug

Timber post and wire stock fence at 1200mm high.

- Galvanised mild steel stock netting to be heavyweight 4mm diameter, 800mm wide to comply to BS 1722: Part 2, Type B8/80/15W and BS 4102. Netting to be fitted to outside of fence and strained with an approved system, netting to be wrapped and stapled around straining posts, and stapled to intermediate posts. Staples not to be driven right home
- All timber to be from FSC managed source.All posts and struts to be peeled and pointed, treated to comply to BS EN 355 Sections 1 to 3 class 4 & BS 8417. Straining posts to be c.2200mm long with top diameter 125mm minimum. Intermediate posts to be 1550mm long with op diameter 75mm minimum. Posts at 2500mm to 3000mm max. centres.
- Barbed wire to be two strand of mild steel type 2.5mm, 2 ply, four point barbed wire to top and bottom of post to comply with BS 4102.

Open Drainage Swales

- Located within the field margins at c. 1500mm from the hedgeline. Ditches are to be 'V', 750mm wide, 500mm deep and 300mm wide at its base. These will be seeded and managed to create corridors of wet grassland (seasonal) within the field boundary.

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DO NOT SCALE FROM THIS DRAWING | A1

KEY

- Hedgerow (maintained to 1.5m height)
- Hedgerow trees
- Existing woodland
- Proposed woodland
- Agricultural grassland - restored
- Agricultural grassland - proposed
- Grassland margins
- Aquatic / marginal planting
- Ponds - reprofiled for marginal planting
- Restoration/re-build to drystone wall (height to match existing c.900mm)
- Open drainage swale parallel to hedgerow
- Piped french drain (300x300mm)
- Piped culvert (300mm Ø)
- Field drainage (subject to req't)

Soil Handling

1. Following formation to restoration contours remaining overburden to be evenly spread through site to avoid ponding.
2. Stored subsoil and higher grade soil making materials to be laid to even grade to even depth of 900mm depth. Material to be laid in 450mm layers. Each layer to be decompacted using winged tines to a depth of 450mm at 600mm centres.
3. Stored topsoils to be laid to minimum of 300mm. Each layer to be decompacted using winged tines to a depth of 450mm at 600mm centres.
4. Any stone or other non soil item greater than 75mm brought to surface during rip to be removed.
5. All soil handling and spreading to be undertaken in accordance with DEFRA guidance *'Good practice guide for handling soils'*. Soil to be placed while in a dry and friable condition, allowing sufficient time within the restoration programme to allow for cultivation and seeding before end of September.
6. Mineral Planning Authority to inspect formation and recommend further requirements.
7. Following approval by MPA soils to be cultivated and seeded as scheduled.

Land drainage system and associated ditches to be installed following soil settlement and establishment of initial seeding works. No earlier than one year following completion of planting and seeding works.

REVISION	DETAILS	DATE	DRAWN	CHK'D	APP'D
A	First Issue	08/01/16	GDR	GDR	MEW

CLIENT

Naylor Industries

PROJECT

Shelley Quarry Planning & Restoration

DRAWING TITLE

Landscape Restoration
Planting Overview

DRG No.	SCALE	DATE
ST14014-001	1:1000 @ A1	09/09/15
DRAWN BY GDR	CHECKED BY GDR	APPROVED BY MEW

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