

Phased Biodiversity Plan – Phase 1a

Scheme No. & Name	GCRE Planning Conditions - 21006904
Author	Gareth Lang (Principal Ecologist, BSG) / Lexi Lloyd (Ecologist, Dalcour Maclaren)
Reviewer	Caroline Morris (Director, Dalcour Maclaren)
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1.1 Introduction

1.1.1 Dalcour Maclaren (DM) have been commissioned by Ove Arup & Partners Ltd (Arup) on behalf of their client Global Centre of Rail Excellence (GCRE) Ltd, to produce a Phased Biodiversity Plan to Discharge of Condition 19 of Outline Planning Permission 21/0559/OUT in advance of the commencement of work on the first phase (Phase 1A) of the Global Centre of Rail Excellence (GCRE) development.

1.1.2 An outline planning application submitted by Ove Arup & Partners Ltd (Arup) (on behalf of the Welsh Ministers (Department for the Economy and Transport)) to Neath Port Talbot Council (planning reference P2021/0327) and Powys County Council (21/0559/OUT) was granted conditional approval in July 2021 for the following:

“Development of a Global Centre of Rail Excellence, comprising of two test tracks of loop configuration including an electrified high speed rolling stock test track of 6.9 km in length and an electrified low speed infrastructure test track of 4.5 km, with overhead line equipment (OLE) and dual platform station test environment; together with operations and control offices (including staff accommodation and welfare), shunter cabins (2 no.), research and development, education and training, rolling stock storage sidings and maintenance/cleaning/decommissioning facilities; associated drainage, internal vehicular accesses, branch line rail connection, staff and visitor car parking, lighting, electrical infrastructure, (including substations and lineside shore supplies and transformers), fencing (perimeter security, acoustic and stock proof), land reformation and hard and soft landscaping, together with demolition of existing building/structures.”

1.1.3 The permission is subject to planning conditions. Condition 19 states:

“No development shall take place in each individual phase of development as identified in condition 7 (including demolition, ground works, site or vegetation clearance) until such time as a Phase Biodiversity Plan (PBP) has been submitted to and approved in writing by the Local Planning Authority. The PBP shall be in line with, implement and demonstrate compliance with the approach set out in the SBP agreed under condition 18. The Plan shall be implemented as approved.”

1.2 Supporting Documentation

- 1.2.1 Documents have been submitted to inform discharge of pre-commencement Conditions 13 to 18 inclusive relating to ecology and biodiversity. These include:
- Phase 1A Ecological Protection Plan (EPP)
 - The Washery Ecological Management and Monitoring Plan (EMMP)
 - Strategic Biodiversity Plan (SBP)
- 1.2.2 The detail of these documents’ account for the working plans for Phase 1A of the development. As these are current at the time of commencing the Phase 1A works, the measures for ecological protection and mitigation during construction, and management and monitoring post-construction of this phase (as required by a PBP) are set out in these documents.

1.3 The Phase 1A PBP

- 1.3.1 Section 6 of the SBP requires that the PBP documents for each phase of the development include the following information:
- Up to date ecological baseline
 - Avoidance, mitigation and compensatory measures
 - Enhancement measures
 - Habitat calculations
- 1.3.2 With the exception of the habitat calculations, this information in respect of Phase 1A is provided within the EPP and EMMP documents, following the principles set out in the SBP. Table 1 (below) provides a signpost to this information within each of these documents.

Table 1. Phase 1a Biodiversity Plan overview

Relevant task	Summary	Section	Page
Summary of up-to-date ecological baseline	A summary of the ecological baseline within Phase 1A is presented in the EPP.	Section 2	9 - 14
Avoidance, mitigation and compensatory measures	Method statements for the protection of retained habitats, and protected and notable species are provided in the EPP.	Section 7	30 - 44
Enhancement measures	Enhancement measures, and a program for maintenance and monitoring of newly created and retained habitats, is presented in the EMMP.	Section 2 (habitats) Section 3 (Species)	8 - 34

1.3.4 The EPP, EMMP and SBP documents are subject to review by the Council during the Condition discharge process; therefore, this PBP (as a collective of these documents) can only be final on discharge of the EPP, EMMP and SBP related Conditions.

1.3.5 Separate PBP documents will be required for future phases where detailed design processes require variation to ecological protection, management and monitoring measures described in the EMMP and SBP documents. Future PBPs will also take account of the evolving baseline conditions as the development progresses.

Habitat Calculations

1.3.6 Table 2 (overleaf) presents the total area of habitat loss, creation and enhancement as required by Section 4 of the SBP. The format follows Table 9 of the SBP and can be used to populate the tracker template contained within the SBP following completion of the scheme.

1.3.7 As detailed within the SBP, the area calculations do not include buildings and areas of hard standing or bare ground. All areas within the footprint of the Phase 1A infrastructure are assumed to be lost, along with areas that will be subject to earthworks and restored following completion. Areas between the proposed infrastructure and the northern boundary of the Phase 1A Site will be disturbed during proposed drainage works, but will be allowed to regenerate. Protection measures to limit disturbance of these habitats are set out in the EPP. The areas surrounding drainage works are considered to be retained habitats, despite short-term impacts.

- 1.3.8 The areas of habitat creation and retention have been based on JCLA Drawings OW181.P.01.PP to OW181.P.07.PP, and the planting schedule OW181.Doc01.PS (provided in Appendix 1). Overall, the area of habitat creation and retention is greater than the area of habitat loss.

Table 2. Phase 1a loss per habitat type against habitat creation and habitat retention.

Habitats affected (excluding buildings and hardstanding)	Total extent of habitat within Phase 1A (ha)	Habitat lost (ha)	Habitat created (ha)	Habitat retained	Description of changes to habitat
Marshy grassland	0.84	0.74	0.54	0.1	A small area of marshy grassland will be lost from the Phase 1A Site, and an area within the Gorsllwyn Meadows SINC will be disturbed during drainage works. These areas will be retained and subject to management to enhance their value for nature conservation. New planting of wet meadow, marginal and channel vegetation will provide compensation.
Semi-improved acid grassland	2.0	1.7	1.41	0.3	Small areas of acid grassland will be lost from the washery and sidings. An area of existing acid grassland which forms the Onllwyn coal washery SINC will be lost for earthworks, but will be re-seeded with a lowland dry acid-grassland mix and subject to long term management to enhance its value for nature conservation. Areas of this habitat in the Gorswlllyn Meadows SINC (0.3 ha) will be disturbed during drainage works, but enhanced (through control of scrub) and retained in the long term.
Neutral grassland	0.32	0.32			A small area of neutral grassland which is present around the periphery of the washery buildings will be lost. This will be compensated for through seeding of a lowland dry acid-grassland mix (as set out above).
Mixed woodland	0.1	0.1	3.12		A small area of mixed woodland (semi-natural and plantation) will be lost from the washery and the sidings as a result of GCRE infrastructure. New planting of 78 multi-stemmed / standard trees and 67 whips will create an overall enhancement. The area habitat has been calculated using the urban tree helper tool within the Defra Metric 3.1 calculator.

Habitats affected (excluding buildings and hardstanding)	Total extent of habitat within Phase 1A (ha)	Habitat lost (ha)	Habitat created (ha)	Habitat retained	Description of changes to habitat
Conifer	0.002			0.002	An area of conifer at the northern boundary of the Phase 1A Site will be retained.
Scrub	0.57	0.57			A small area of scrub will be lost from the washery site. The majority of this habitat (0.54 ha) will be removed to enhance the wet ditch at the north of the Phase 1A Site. The new tree planting (above) will compensate for this loss.
Ephemeral vegetation	0.46	0.46			A small area of ephemeral vegetation will be lost from the washery site. Areas adjacent to new sidings will be allowed to re-establish as open mosaic habitat.
Waterbodies / wetland features	0.13	0.13	0.16		Three settlement lagoons, and a smaller pond located within the Phase 1A Site will be removed. A new retention basin and pond will be created to compensate for this loss, and provide an overall enhancement.
Total	4.42	4.02	5.23	0.4	Overall, habitat creation and retention is greater than habitat loss.

Appendix 1: Planting Schedule (JCLA OW181.Doc01.PS)

(Overleaf)

OW181.Doc01.PS**TREES & PLANTING SCHEDULE****ISSUE:** Planning**Revision:** P01**Date:** Dec-22

Note: To be read in conjunction with planting plans:

OW181.P.01.PP, OW181.P.02.PP, OW181.P.03.PP, OW181.P.04.PP, OW181.P.05.PP, OW181.P.06.PP, OW181.P.07.PP

All standards / multi-stems to be container grown unless otherwise stated

AREA 01		
Trees (Standard & Multistems)	Size	Qty
T1. Alnus incana 'Aurea'	1.5-2m - Multi-stem	2
T2. Betula pubescens	1.5-2m - Multi-stem	4
T3. Betula pendula	1.5-2m - Multi-stem	2
T4. Alnus incana	12-14cm - Standard	1
T5. Populus tremula	12-14cm - Standard	1
T6. Quercus petraea	12-14cm - Standard	1
T7. Salix alba	12-14cm - Standard	0
T8. Pinus nigra	12-14cm - Standard	4
Trees (Whips / Feathered)	Size	Qty
T9. Alnus glutinosa (feathered)	60-90cm	0
T10. Populus tremula (feathered)	60-90cm	0
T11. Populus alba	60-90cm	0
T12. Salix caprea	60-90cm	0
Lowland dry acid grassland	Size	Qty
Wildflower mix - Britishflora - BFS 2 Mix is 80% Grasses to 20% Wildflowers	700m2 at Sowing Rate: 5g/m2	3500g
Species include:		
Agrostis capillaris		
Anthoxanthum odoratum		
Centaurea nigra		
Cynosurus cristatus		
Deschampsia flexuosa		
Festuca ovina		
Galium verum		
Hieracium pilosella		
Hypochaeris radicata		
Lotus corniculatus		
Prunella vulgaris		
Rumex acetosella		
AREA 02		
Trees (Standard & Multistems)	Size	Qty
T1. Alnus incana 'Aurea'	1.5-2m - Multi-stem	3
T2. Betula pubescens	1.5-2m - Multi-stem	7
T3. Betula pendula	1.5-2m - Multi-stem	5
T4. Alnus incana	12-14cm - Standard	3
T5. Populus tremula	12-14cm - Standard	2
T6. Quercus petraea	12-14cm - Standard	1
T7. Salix alba	12-14cm - Standard	3

T8. Pinus nigra	12-14cm - Standard	6
Trees (Whips / Feathered)	Size	Qty
T9. Alnus glutinosa (feathered)	60-90cm	9
T10. Populus tremula (feathered)	60-90cm	9
T11. Populus alba	60-90cm	7
T12. Salix caprea	60-90cm	6
Lowland dry acid grassland	Size	Qty
Wildflower mix - Britishflora - BFS 2 Mix is 80% Grasses to 20% Wildflowers	5000m2 at Sowing Rate: 5g/m2	25000g
Species include:		
Agrostis capillaris		
Anthoxanthum odoratum		
Centaurea nigra		
Cynosurus cristatus		
Deschampsia flexuosa		
Festuca ovina		
Galium verum		
Hieracium pilosella		
Hypochaeris radicata		
Lotus corniculatus		
Prunella vulgaris		
Rumex acetosella		
Grassland Terrace (Dry)	Size	Qty
7no. Plants/m2. AREA: 650m2		
Achillea millefolium (10%)	2L	445
Carex panicea (10%)	2L	445
Centaurea nigra (10%)	2L	445
Deschampsia cespitosa 'Goldtau' (15%)	2L	665
Digitalis purpurea (5%)	2L	222
Festuca ovina (10%)	2L	445
Luzula campestris (15%)	2L	665
Molinia caerulea (15%)	2L	665
Prunella vulgaris (10%)	2L	445
Wet meadow flora	Size	Qty
Wet meadow seed mix Scotia Seeds or similar approved	1200m2 at Sowing Rate: 5g/m2	6000kg
Species include:		
Leucanthemum vulgare (Ox-eye daisy) (10%)		
Deschampsia cespitosa (Tufted hair grass) (10%)		
Lythrum salicaria (Purple loosestrife) (10%)		
Prunella vulgaris (Selfheal) (10%)		
Leontodon autumnalis (Autumn hawkbit) (10%)		
Centaurea nigra (Common knapweed) (10%)		
Rumex acetosa (Common sorrel) (10%)		
Ranunculus acris (Meadow buttercup) (10%)		
Geranium pratense (Meadow cranesbill) (10%)		
Lychnis flos-cuculi (Ragged robin) (10%)		
Carex flacca (Glaucous sedge) (10%)		
Juncus inflexus (Hard rush) (10%)		
Juncus articulatus (Jointed rush) (10%)		
Juncus effusus (Soft rush) (10%)		

Marginal	Size	Qty
<i>5no. Plants/m2. AREA: 10m2</i>		
Phragmites australis (40%)	21	20
Iris pseudacorus (30%)	21	15
Persicaria amphibia (30%)	21	15
NOTE: Allow for transplanted species from re-directed watercourses		
Channel vegetation	Size	Qty
<i>5no. Plants/m2. AREA: 400m2</i>		
Carex demissa (10%)	21	200
Carex echinata (10%)	21	200
Carex nigra (10%)	21	200
Carex remota (10%)	21	200
Equisetum fluviatile* (5%)	21	100
Juncus articulatis (10%)	21	200
Juncus effusus (10%)	21	200
Mentha aquatica (10%)	21	200
Myriophyllum alteriflorum (10%)	21	200
Samolus valerandi (5%)	translocated	100
Typha latifolia (10%)	21	200
AREA 03		
Trees (Standard & Multistems)	Size	Qty
T1. Alnus incana 'Aurea'	1.5-2m - Multi-stem	1
T2. Betula pubescens	1.5-2m - Multi-stem	1
T3. Betula pendula	1.5-2m - Multi-stem	0
T4. Alnus incana	12-14cm - Standard	1
T5. Populus tremula	12-14cm - Standard	0
T6. Quercus petraea	12-14cm - Standard	2
T7. Salix alba	12-14cm - Standard	1
T8. Pinus nigra	12-14cm - Standard	1
Trees (Whips / Feathered)	Size	Qty
T9. Alnus glutinosa (feathered)	60-90cm	2
T10. Populus tremula (feathered)	60-90cm	2
T11. Populus alba	60-90cm	2
T12. Salix caprea	60-90cm	2
Lowland dry acid grassland	Size	Qty
Wildflower mix - Britishflora - BFS 2 Mix is 80% Grasses to 20% Wildflowers	725m2 at Sowing Rate: 5g/m2	3625g
Species include:		
Agrostis capillaris		
Anthoxanthum odoratum		
Centaurea nigra		
Cynosurus cristatus		
Deschampsia flexuosa		
Festuca ovina		
Galium verum		
Hieracium pilosella		
Hypochaeris radicata		
Lotus corniculatus		

<i>Prunella vulgaris</i>		
<i>Rumex acetosella</i>		
Grassland Terrace (Dry)	Size	Qty
7no. Plants/m2. AREA: 550		
<i>Achillea millefolium</i> (10%)	2L	385
<i>Carex panicea</i> (10%)	2L	385
<i>Centaurea nigra</i> (10%)	2L	385
<i>Deschampsia cespitosa</i> 'Goldtau' (15%)	2L	577
<i>Digitalis purpurea</i> (5%)	2L	192
<i>Festuca ovina</i> (10%)	2L	385
<i>Luzula campestris</i> (15%)	2L	577
<i>Molinia caerulea</i> (15%)	2L	577
<i>Prunella vulgaris</i> (10%)	2L	385
Wet meadow flora	Size	Qty
Wet meadow seed mix Scotia Seeds or similar approved	1500 m2 at Sowing Rate: 5g/m2	7500g
<i>Species include:</i>		
<i>Leucanthemum vulgare</i> (Ox-eye daisy) (10%)		
<i>Deschampsia cespitosa</i> (Tufted hair grass) (10%)		
<i>Lythrum salicaria</i> (Purple loosestrife) (10%)		
<i>Prunella vulgaris</i> (Selfheal) (10%)		
<i>Leontodon autumnalis</i> (Autumn hawkbit) (10%)		
<i>Centaurea nigra</i> (Common knapweed) (10%)		
<i>Rumex acetosa</i> (Common sorrel) (10%)		
<i>Ranunculus acris</i> (Meadow buttercup) (10%)		
<i>Geranium pratense</i> (Meadow cranesbill) (10%)		
<i>Lychnis flos-cuculi</i> (Ragged robin) (10%)		
<i>Carex flacca</i> (Glaucous sedge) (10%)		
<i>Juncus inflexus</i> (Hard rush) (10%)		
<i>Juncus articulatus</i> (Jointed rush) (10%)		
<i>Juncus effusus</i> (Soft rush) (10%)		
Marginal	Size	Qty
5no. Plants/m2. AREA: 10m2		
<i>Phragmites australis</i> (40%)	2l	20
<i>Iris pseudacorus</i> (30%)	2l	15
<i>Persicaria amphibia</i> (30%)	2l	15
NOTE: Allow for transplanted species from re-directed watercourses		
Channel vegetation	Size	Qty
5no. Plants/m2. AREA: 250m2		
<i>Carex demissa</i> (10%)	2l	120
<i>Carex echinata</i> (10%)	2l	120
<i>Carex nigra</i> (10%)	2l	120
<i>Carex remota</i> (10%)	2l	120
<i>Equisetum fluviatile</i> * (5%)	2l	60
<i>Juncus articulatus</i> (10%)	2l	120
<i>Juncus effusus</i> (10%)	2l	120
<i>Mentha aquatica</i> (10%)	2l	120
<i>Myriophyllum alteriflorum</i> (10%)	2l	120
<i>Samolus valerandi</i> (5%)	translocated	TBC
<i>Typha latifolia</i> (10%)	2l	120

AREA 04		
Trees (Standard & Multistems)	Size	Qty
T1. Alnus incana 'Aurea'	1.5-2m - Multi-stem	0
T2. Betula pubescens	1.5-2m - Multi-stem	0
T3. Betula pendula	1.5-2m - Multi-stem	0
T4. Alnus incana	12-14cm - Standard	0
T5. Populus tremula	12-14cm - Standard	0
T6. Quercus petraea	12-14cm - Standard	0
T7. Salix alba	12-14cm - Standard	1
T8. Pinus nigra	12-14cm - Standard	0
Trees (Whips / Feathered)	Size	Qty
T9. Alnus glutinosa (feathered)	60-90cm	5
T10. Populus tremula (feathered)	60-90cm	5
T11. Populus alba	60-90cm	4
T12. Salix caprea	60-90cm	4
Lowland dry acid grassland	Size	Qty
Wildflower mix - Britishflora - BFS 2 Mix is 80% Grasses to 20% Wildflowers	780m2 at Sowing Rate: 5g/m2	3900g
<i>Species include:</i>		
<i>Agrostis capillaris</i>		
<i>Anthoxanthum odoratum</i>		
<i>Centaurea nigra</i>		
<i>Cynosurus cristatus</i>		
<i>Deschampsia flexuosa</i>		
<i>Festuca ovina</i>		
<i>Galium verum</i>		
<i>Hieracium pilosella</i>		
<i>Hypochaeris radicata</i>		
<i>Lotus corniculatus</i>		
<i>Prunella vulgaris</i>		
<i>Rumex acetosella</i>		
Grassland Terrace (Dry)	Size	Qty
7no. Plants/m2. AREA: 595m2		
Achillea millefolium (10%)	2L	415
Carex panicea (10%)	2L	415
Centaurea nigra (10%)	2L	415
Deschampsia cespitosa 'Goldtau' (15%)	2L	624
Digitalis purpurea (5%)	2L	208
Festuca ovina (10%)	2L	415
Luzula campestris (15%)	2L	624
Molinia caerulea (15%)	2L	624
Prunella vulgaris (10%)	2L	415
Wet meadow flora	Size	Qty
Wet meadow seed mix Scotia Seeds or similar approved	1350m2 at Sowing Rate: 5g/m2	6750g
<i>Species include:</i>		
<i>Leucanthemum vulgare (Ox-eye daisy) (10%)</i>		
<i>Deschampsia cespitosa (Tufted hair grass) (10%)</i>		
<i>Lythrum salicaria (Purple loosestrife) (10%)</i>		

<i>Prunella vulgaris</i> (Selfheal) (10%)		
<i>Leontodon autumnalis</i> (Autumn hawkbit) (10%)		
<i>Centaurea nigra</i> (Common knapweed) (10%)		
<i>Rumex acetosa</i> (Common sorrel) (10%)		
<i>Ranunculus acris</i> (Meadow buttercup) (10%)		
<i>Geranium pratense</i> (Meadow cranesbill) (10%)		
<i>Lychnis flos-cuculi</i> (Ragged robin) (10%)		
<i>Carex flacca</i> (Glaucous sedge) (10%)		
<i>Juncus inflexus</i> (Hard rush) (10%)		
<i>Juncus articulatus</i> (Jointed rush) (10%)		
<i>Juncus effusus</i> (Soft rush) (10%)		
Marginal	Size	Qty
5no. Plants/m2. AREA: 10m2		
<i>Phragmites australis</i> (40%)	21	20
<i>Iris pseudacorus</i> (30%)	21	15
<i>Persicaria amphibia</i> (30%)	21	15
NOTE: Allow for transplanted species from re-directed watercourses		
Channel vegetation	Size	Qty
5no. Plants/m2. AREA: 115m2		
<i>Carex demissa</i> (10%)	21	57
<i>Carex echinata</i> (10%)	21	57
<i>Carex nigra</i> (10%)	21	57
<i>Carex remota</i> (10%)	21	57
<i>Equisetum fluviatile</i> * (5%)	21	28
<i>Juncus articulatus</i> (10%)	21	57
<i>Juncus effusus</i> (10%)	21	57
<i>Mentha aquatica</i> (10%)	21	57
<i>Myriophyllum alteriflorum</i> (10%)	21	57
<i>Samolus valerandi</i> (5%)	translocated	TBC
<i>Typha latifolia</i> (10%)	21	57
AREA 05		
Trees (Standard & Multistems)	Size	Qty
T1. <i>Alnus incana</i> 'Aurea'	1.5-2m - Multi-stem	0
T2. <i>Betula pubescens</i>	1.5-2m - Multi-stem	3
T3. <i>Betula pendula</i>	1.5-2m - Multi-stem	3
T4. <i>Alnus incana</i>	12-14cm - Standard	0
T5. <i>Populus tremula</i>	12-14cm - Standard	0
T6. <i>Quercus petraea</i>	12-14cm - Standard	0
T7. <i>Salix alba</i>	12-14cm - Standard	3
T8. <i>Pinus nigra</i>	12-14cm - Standard	4
Trees (Whips / Feathered)	Size	Qty
T9. <i>Alnus glutinosa</i> (feathered)	60-90cm	0
T10. <i>Populus tremula</i> (feathered)	60-90cm	0
T11. <i>Populus alba</i>	60-90cm	0
T12. <i>Salix caprea</i>	60-90cm	0
Lowland dry acid grassland	Size	Qty
Wildflower mix - Britishflora - BFS 2 Mix is 80% Grasses to 20% Wildflowers	1440m2 at Sowing Rate: 5g/m2	7200g

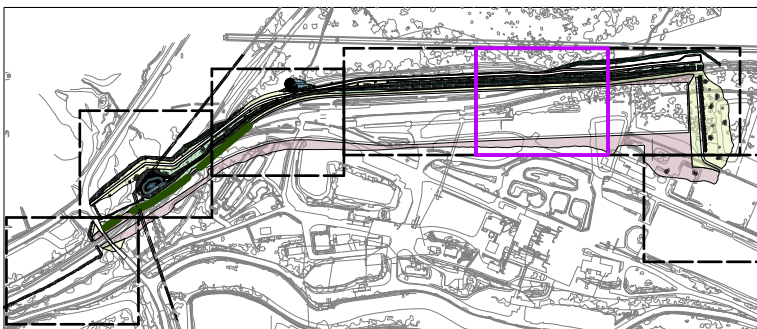
<i>Species include:</i>		
<i>Agrostis capillaris</i>		
<i>Anthoxanthum odoratum</i>		
<i>Centaurea nigra</i>		
<i>Cynosurus cristatus</i>		
<i>Deschampsia flexuosa</i>		
<i>Festuca ovina</i>		
<i>Galium verum</i>		
<i>Hieracium pilosella</i>		
<i>Hypochaeris radicata</i>		
<i>Lotus corniculatus</i>		
<i>Prunella vulgaris</i>		
<i>Rumex acetosella</i>		
Grassland Terrace (Dry)	Size	Qty
7no. Plants/m2. AREA: 550m2		
<i>Achillea millefolium</i> (10%)	2L	385
<i>Carex panicea</i> (10%)	2L	385
<i>Centaurea nigra</i> (10%)	2L	385
<i>Deschampsia cespitosa</i> 'Goldtau' (15%)	2L	577
<i>Digitalis purpurea</i> (5%)	2L	192
<i>Festuca ovina</i> (10%)	2L	385
<i>Luzula campestris</i> (15%)	2L	577
<i>Molinia caerulea</i> (15%)	2L	577
<i>Prunella vulgaris</i> (10%)	2L	385
Wet meadow flora	Size	Qty
Wet meadow seed mix Scotia Seeds or similar approved	1300m2 at Sowing Rate: 5g/m2	6500
<i>Species include:</i>		
<i>Leucanthemum vulgare</i> (Ox-eye daisy) (10%)		
<i>Deschampsia cespitosa</i> (Tufted hair grass) (10%)		
<i>Lythrum salicaria</i> (Purple loosestrife) (10%)		
<i>Prunella vulgaris</i> (Selfheal) (10%)		
<i>Leontodon autumnalis</i> (Autumn hawkbit) (10%)		
<i>Centaurea nigra</i> (Common knapweed) (10%)		
<i>Rumex acetosa</i> (Common sorrel) (10%)		
<i>Ranunculus acris</i> (Meadow buttercup) (10%)		
<i>Geranium pratense</i> (Meadow cranesbill) (10%)		
<i>Lychnis flos-cuculi</i> (Ragged robin) (10%)		
<i>Carex flacca</i> (Glaucous sedge) (10%)		
<i>Juncus inflexus</i> (Hard rush) (10%)		
<i>Juncus articulatus</i> (Jointed rush) (10%)		
<i>Juncus effusus</i> (Soft rush) (10%)		
Marginal	Size	Qty
5no. Plants/m2. AREA: 190m2		
<i>Phragmites australis</i> (40%)	2l	380
<i>Iris pseudacorus</i> (30%)	2l	285
<i>Persicaria amphibia</i> (30%)	2l	285
NOTE: Allow for transplanted species from re-directed watercourses		
Channel vegetation	Size	Qty
5no. Plants/m2. AREA: 70m2		

Carex demissa (10%)	21	35
Carex echinata (10%)	21	35
Carex nigra (10%)	21	35
Carex remota (10%)	21	35
Equisetum fluviatile* (5%)	21	17
Juncus articulatis (10%)	21	35
Juncus effusus (10%)	21	35
Mentha aquatica (10%)	21	35
Myriophyllum alteriflorum (10%)	21	35
Samolus valerandi (5%)	translocated	TBC
Typha latifolia (10%)	21	35
Submerged (pond)	Size	Qty
5no. Plants / m2. AREA: 10m2		
Myriophyllum spicatum (30%)	21	15
Potamogeton crispus (15%)	21	7
Potamogeton polygonifolius (15%)	21	7
Schoenoplectus lacustris (40%)	21	20
Aquatic	Size	Qty
5no. Plants / m2. AREA: 90m2		
Glyceria fluitans (30%)	21	135
Sparganium erectum (40%)	21	180
Typha latifolia (30%)	21	135
Climber mix	Size	Qty
3no. Per lin m. Total lin m: 65m2		
Climbing hydrangea (20%)	21	39
Hedera helix (20%)	21	39
Lonicera periclymenum (20%)	21	39
Clematis vitalba (20%)	21	39
Lathyrus latifolius (20%)	21	39
AREA 06		
Trees (Standard & Multistems)	Size	Qty
T1. Alnus incana 'Aurea'	1.5-2m - Multi-stem	2
T2. Betula pubescens	1.5-2m - Multi-stem	1
T3. Betula pendula	1.5-2m - Multi-stem	2
T4. Alnus incana	12-14cm - Standard	1
T5. Populus tremula	12-14cm - Standard	0
T6. Quercus petraea	12-14cm - Standard	1
T7. Salix alba	12-14cm - Standard	3
T8. Pinus nigra	12-14cm - Standard	2
Trees (Whips / Feathered)	Size	Qty
T9. Alnus glutinosa (feathered)	60-90cm	3
T10. Populus tremula (feathered)	60-90cm	3
T11. Populus alba	60-90cm	2
T12. Salix caprea	60-90cm	2
Lowland dry acid grassland	Size	Qty
Wildflower mix - Britishflora - BFS 2 Mix is 80% Grasses to 20% Wildflowers	1780m2 at Sowing Rate: 5g/m2	8900g
Species include:		

<i>Agrostis capillaris</i>		
<i>Anthoxanthum odoratum</i>		
<i>Centaurea nigra</i>		
<i>Cynosurus cristatus</i>		
<i>Deschampsia flexuosa</i>		
<i>Festuca ovina</i>		
<i>Galium verum</i>		
<i>Hieracium pilosella</i>		
<i>Hypochaeris radicata</i>		
<i>Lotus corniculatus</i>		
<i>Prunella vulgaris</i>		
<i>Rumex acetosella</i>		
Grassland Terrace (Dry)	Size	Qty
7no. Plants/m2. AREA: 950m2		
<i>Achillea millefolium</i> (10%)	2L	665
<i>Carex panicea</i> (10%)	2L	665
<i>Centaurea nigra</i> (10%)	2L	665
<i>Deschampsia cespitosa</i> 'Goldtau' (15%)	2L	997
<i>Digitalis purpurea</i> (5%)	2L	332
<i>Festuca ovina</i> (10%)	2L	665
<i>Luzula campestris</i> (15%)	2L	997
<i>Molinia caerulea</i> (15%)	2L	997
<i>Prunella vulgaris</i> (10%)	2L	665
Wet meadow flora	Size	Qty
Wet meadow seed mix Scotia Seeds or similar approved	2000m2 at Sowing Rate: 5g/m2	10000g
<i>Species include:</i>		
<i>Leucanthemum vulgare</i> (Ox-eye daisy) (10%)		
<i>Deschampsia cespitosa</i> (Tufted hair grass) (10%)		
<i>Lythrum salicaria</i> (Purple loosestrife) (10%)		
<i>Prunella vulgaris</i> (Selfheal) (10%)		
<i>Leontodon autumnalis</i> (Autumn hawkbit) (10%)		
<i>Centaurea nigra</i> (Common knapweed) (10%)		
<i>Rumex acetosa</i> (Common sorrel) (10%)		
<i>Ranunculus acris</i> (Meadow buttercup) (10%)		
<i>Geranium pratense</i> (Meadow cranesbill) (10%)		
<i>Lychnis flos-cuculi</i> (Ragged robin) (10%)		
<i>Carex flacca</i> (Glaucous sedge) (10%)		
<i>Juncus inflexus</i> (Hard rush) (10%)		
<i>Juncus articulatus</i> (Jointed rush) (10%)		
<i>Juncus effusus</i> (Soft rush) (10%)		
Marginal	Size	Qty
5no. Plants/m2. AREA: 325m2		
<i>Phragmites australis</i> (40%)	2l	650
<i>Iris pseudacorus</i> (30%)	2l	487
<i>Persicaria amphibia</i> (30%)	2l	487
NOTE: Allow for transplanted species from re-directed watercourses		
Channel vegetation	Size	Qty
5no. Plants/m2. AREA: 120m2		
<i>Carex demissa</i> (10%)	2l	60

Carex echinata (10%)	21	60
Carex nigra (10%)	21	60
Carex remota (10%)	21	60
Equisetum fluviatile* (5%)	21	30
Juncus articulatis (10%)	21	60
Juncus effusus (10%)	21	60
Mentha aquatica (10%)	21	60
Myriophyllum alteriflorum (10%)	21	60
Samolus valerandi (5%)	translocated	TBC
Typha latifolia (10%)	21	60
Submerged (pond)	Size	Qty
5no. Plants / m2. AREA: 20m2		
Myriophyllum spicatum (30%)	21	30
Potamogeton crispus (15%)	21	15
Potamogeton polygonifolius (15%)	21	15
Schoenoplectus lacustris (40%)	21	40
Aquatic	Size	Qty
5no. Plants / m2. AREA: 140m2		
Glyceria fluitans (30%)	21	210
Sparganium erectum (40%)	21	280
Typha latifolia (30%)	21	210
Climber mix	Size	Qty
3no. Per lin m. Total lin m: 145m2		
Climbing hydrangea (20%)	21	87
Hedera helix (20%)	21	87
Lonicera periclymenum (20%)	21	87
Clematis vitalba (20%)	21	87
Lathyrus latifolius (20%)	21	87
AREA 07		
Lowland dry acid grassland	Size	Qty
Wildflower mix - Britishflora - BFS 2 Mix is 80% Grasses to 20% Wildflowers	310m2 at Sowing Rate: 5g/m2	1550g
Species include:		
Agrostis capillaris		
Anthoxanthum odoratum		
Centaurea nigra		
Cynosurus cristatus		
Deschampsia flexuosa		
Festuca ovina		
Galium verum		
Hieracium pilosella		
Hypochaeris radicata		
Lotus corniculatus		
Prunella vulgaris		
Rumex acetosella		
Wet meadow flora	Size	Qty
Wet meadow seed mix Scotia Seeds or similar approved	545m2 at Sowing Rate: 5g/m2	2725g
Species include:		

<i>Leucanthemum vulgare</i> (Ox-eye daisy) (10%)		
<i>Deschampsia cespitosa</i> (Tufted hair grass) (10%)		
<i>Lythrum salicaria</i> (Purple loosestrife) (10%)		
<i>Prunella vulgaris</i> (Selfheal) (10%)		
<i>Leontodon autumnalis</i> (Autumn hawkbit) (10%)		
<i>Centaurea nigra</i> (Common knapweed) (10%)		
<i>Rumex acetosa</i> (Common sorrel) (10%)		
<i>Ranunculus acris</i> (Meadow buttercup) (10%)		
<i>Geranium pratense</i> (Meadow cranesbill) (10%)		
<i>Lychnis flos-cuculi</i> (Ragged robin) (10%)		
<i>Carex flacca</i> (Glaucous sedge) (10%)		
<i>Juncus inflexus</i> (Hard rush) (10%)		
<i>Juncus articulatus</i> (Jointed rush) (10%)		
<i>Juncus effusus</i> (Soft rush) (10%)		



Key Plan 1:10000

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Do not scale from this drawing. Any discrepancies or queries should be brought to the attention of the authors. Dimensions are to be verified on site prior to construction.

To be read in conjunction with all relevant Architects', Services and Structural Engineers' drawings.

All existing site, tree and building information has been compiled from different sources.

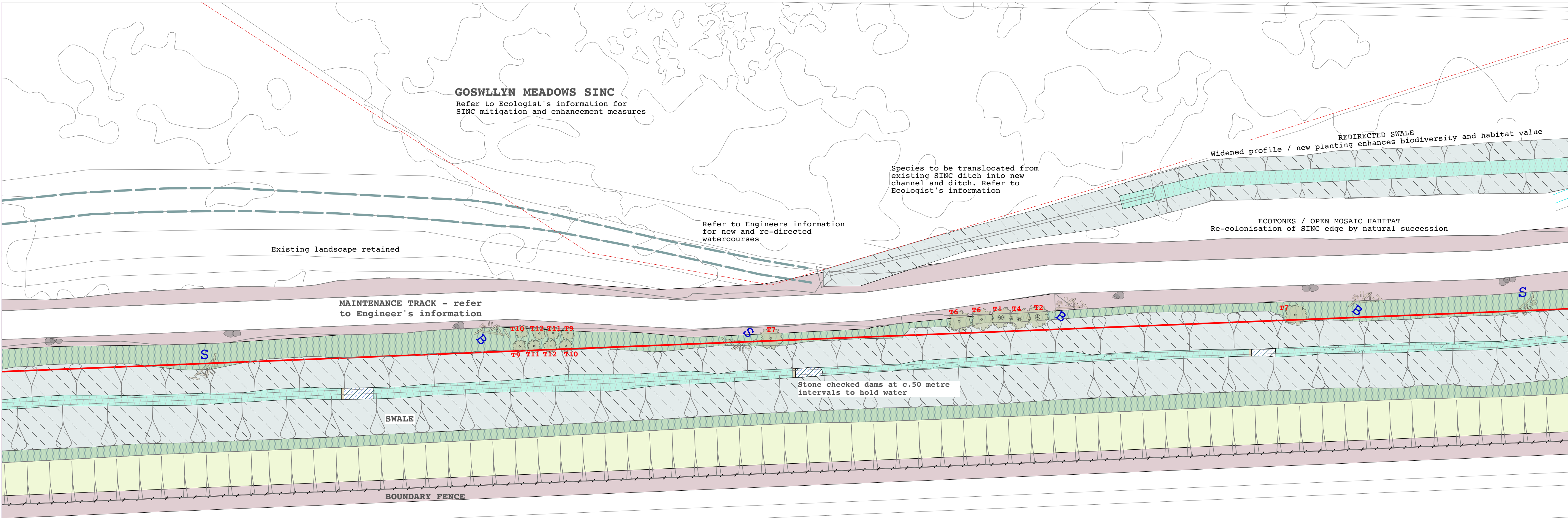
Refer to current revisions of all referenced files.

Notes:

- Refer to ecologists information for Phase1A SINC & Receptor area mitigation measures and enhancements.
- To be read in conjunction with Soft Landscape Maintenance plan: **OW181.Doc2.MP**
- To be read in conjunction with Planting schedule: **OW181.Doc1.PS**
- To be read in conjunction with Soft landscape specification: **OW181.Do3.LS**
- Refer to Engineers drawings for earthworks, hard landscape, levels and drainage information.

Key:

- Application Boundary
- PHASE 1A Boundary



SIDINGS - Refer to Engineer's information

Key. Planting mix's:

- EXISTING DITCH CHANNELS**
Existing ditch to be retained, vegetation to be cleared where overgrown to allow light into channel.
- To be planted with translocated species e.g. cuttings of reed mace and common reed from removed ditch and pond species.
Refer to Engineers information for further detail.
- OPEN MOSAIC HABITAT**
AREA: 3000m2
30% gravels / 70% existing substrate + seed bank
Successional environment where species self-sow and colonise.
- These areas are to be left to colonise as a mosaic of flower rich perennials & grassland. Based on ecology reports species are likely to include:
- Coal spoil substrate:**
Filago minima (Small cudweed), Euphrasia arctica ssp borealis (Eye bright), Festuca ovina (Sheep's fescue), Tussilago fulfara (Coltsfoot)
- Calcareous substrate:**
Hellianthemum nummularium (Common rock-rose), Carlina vulgaris (Carline thistle), Thymus polytrichus (Wild thyme), Scabiosa columbaria (Small scabious), Briza media (Quaking-grass)
- LOWLAND DRY ACID GRASSLAND**
AREA: 725m2
Britishflora - BFS 2
Sowing Rate: 5g/m2
- Including 80% Grasses:
- Agrostis capillaris (Common bent) (5%)
Anthoxanthum odoratum (Sweet vernal grass) (5%)
Cynosurus cristatus (Crested dog's-tail) (40%)
Deschampsia flexuosa (Wavy hair grass) (5%)
Festuca ovina (Sheep's fescue) (45%)
- 20% Wildflowers:
- Centaurea nigra (Black knapweed) (12%)
Galium verum (Lady's bedstraw) (10%)
Hieracium pilosella (Mouseear hawkweed) (2%)
Hypochaeris radicata (Common cat's-ear) (4%)
Lotus corniculatus (Common bird's-foot trefoil) (10%)
Prunella vulgaris (Selfheal) (15%)
Rumex acetosella (Sheep's sorrel) (9%)
- FENCE LINE**
Refer to Architects / Engineers information
- GRASSLAND TERRACE (DRY)**
AREA: 550m2
Dry grasses & perennials
7no. plants/m2, 2L pots
- Achillea millefolium (Yarrow) (10%)
Centaurea nigra (Knapweed) (Winter seedheads for birds) (10%)
Prunella vulgaris (Heal all) (10%)
Digitalis purpurea (Foxglove) (5%)
Festuca ovina (10%)
Carex panicea (10%)
Luzula campestris (15%)
Deschampsia cespitosa 'Goldtau' (15%)
Molinia caerulea (15%)
- WET MEADOW FLORA**
AREA: 1500m2
Wet meadow seed mix by Scotia Seeds or similar approved
Sowing Rate: 5g/m2
- Cirsium dissectum* (Meadow Thistle) (10%)
Epipactis palustris* (Marsh helleborine) (10%)
- Leucanthemum vulgare (Ox-eye daisy) (10%)
Deschampsia cespitosa (Tufted hair grass) (10%)
Lythrum salicaria (Purple loosestrife) (10%)
Prunella vulgaris (Selfheal) (10%)
Leontodon autumnalis (Autumn hawkbit) (10%)
Centaurea nigra (Common knapweed) (10%)
Rumex acetosa (Common sorrel) (10%)
Ranunculus acris (Meadow buttercup) (10%)
Geranium pratense (Meadow cranesbill) (10%)
Lychnis flos-cuculi (Ragged robin) (10%)
Carex flacca (Glaucous sedge) (10%)
Juncus inflexus (Hard rush) (10%)
Juncus articulatus (Jointed rush) (10%)
Juncus effusus (Soft rush) (10%)
*ES notable species
- CHANNEL VEGETATION**
AREA: 250m2
5no. plants/m2, 2L pots
- Channel vegetation (Submergent):
Typha latifolia (Bulrush) (10%)
Equisetum fluviatile* (Water horeetail) (5%)
Samolus valerandi* (Brookweed) (translocated & protected) (5%)
Myriophyllum alteriflorum* (Alternate Water - milfoil) (10%)
C. demissa (Common yellow sedge) (10%)
Juncus effusus (Common rush) (10%)
*ES notable species
- MARGINAL**
AREA: 10m2
Species tolerant of fluctuating water levels and duration
- 5no. plants/m2, 2L pots
- Phragmites australis (common reed) (40%)
Iris pseudacorus (Yellow Iris) (30%)
Persicaria amphibia (amphibious bistort) (30%)

Tx
TREES (REFER TO TABLE)

B
 S
HABITAT ENHANCEMENTS
Include materials from phase 1A clearance works to create:
Brush piles
Sleeper piles
Boulders & stone piles

NOTE: Rhizome cuttings of reed mace, common reed and bur-reed should be used for the establishment of the marginal, aquatic and submerged species. Recommended that cuttings are taking from removed / existing SINC species where possible.

Tree no.	Species	Proposed size	Quantity
Trees			
T1	Alnus glutinosa (Multi-stem)	1.5m H	1
T2	Betula pubescens (Multi-stem)	1.5m H	1
T3	Betula pendula (Multi-stem)	1.5m H	0
T4	Alnus incana (Standard)	12-14cm girth	1
T5	Populus tremula (Standard)	12-14cm girth	0
T6	Quercus petraea (Standard)	12-14cm girth	2
T7	Salix alba (Standard)	12-14cm girth	1
T8	Pinus nigra (Standard)	12-14cm girth	1
Whips			
T9	Alnus glutinosa (Feathered whip)	60-90cm	2
T10	Populus tremula (Feathered whip)	60-90cm	2
T11	Populus alba (Bareroot / whip)	60-90cm	2
T12	Salix caprea (Bareroot / whip)	60-90cm	2

JCLA

Jonathan Cook Landscape Architects Ltd
3A Iliffe Yard
LONDON SE17 3QA
Tel +44 (0)207 703 3270
www.jcla.co.uk

Client

GCRE

Project

OW181 GCRE Phase 1A

Drawing Title

Proposed Planting Plan: Area 03

Drawing Status
FOR PLANNING

Date
22.12.2022

Scale
1:250 @ A1

Drawing Number

OW181.P.03.PP

Revision

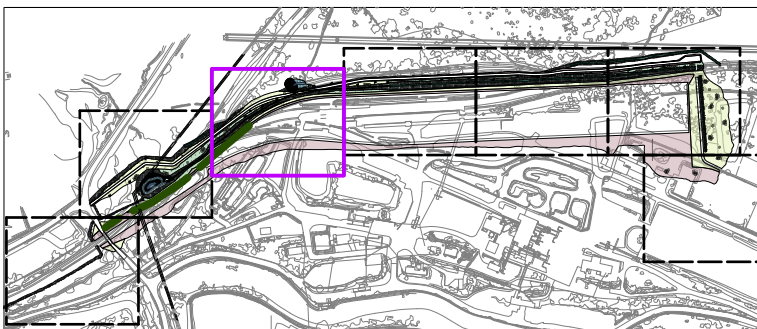
P01

REFER TO OW181.P.00.LP for full extent of open mosaic areas

REFER TO OW181.P.02.PP

REFER TO OW181.P.04.PP





Key Plan 1:10000

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Do not scale from this drawing. Any discrepancies or queries should be brought to the attention of the authors. Dimensions are to be verified on site prior to construction.

To be read in conjunction with all relevant Architects', Services and Structural Engineers' drawings.

All existing site, tree and building information has been compiled from different sources.

Refer to current revisions of all referenced files.

Notes:

- Refer to ecologists information for Phase1A SINC & Receptor area mitigation measures and enhancements.
- To be read in conjunction with Soft Landscape Maintenance plan: **OW181.Doc2.MP**
- To be read in conjunction with Planting schedule: **OW181.Doc1.PS**
- To be read in conjunction with Soft landscape specification: **OW181.Doc3.LS**
- Refer to Engineers drawings for earthworks, hard landscape, levels and drainage information.

Key:

- Application Boundary
- PHASE 1A Boundary

REFER TO OW181.P.04.PP

Rev	Date	Description
P01	22.12.2022	FOR PLANNING

JCLA

Jonathan Cook Landscape Architects Ltd
3A Iliff Yard
LONDON SE17 3QA
Tel +44 (0)207 703 3270
www.jcla.co.uk

Client

GCRE

Project

OW181 GCRE Phase 1A

Drawing Title

Proposed Planting Plan: Area 05

Drawing Status
FOR PLANNING

Date
22.12.2022

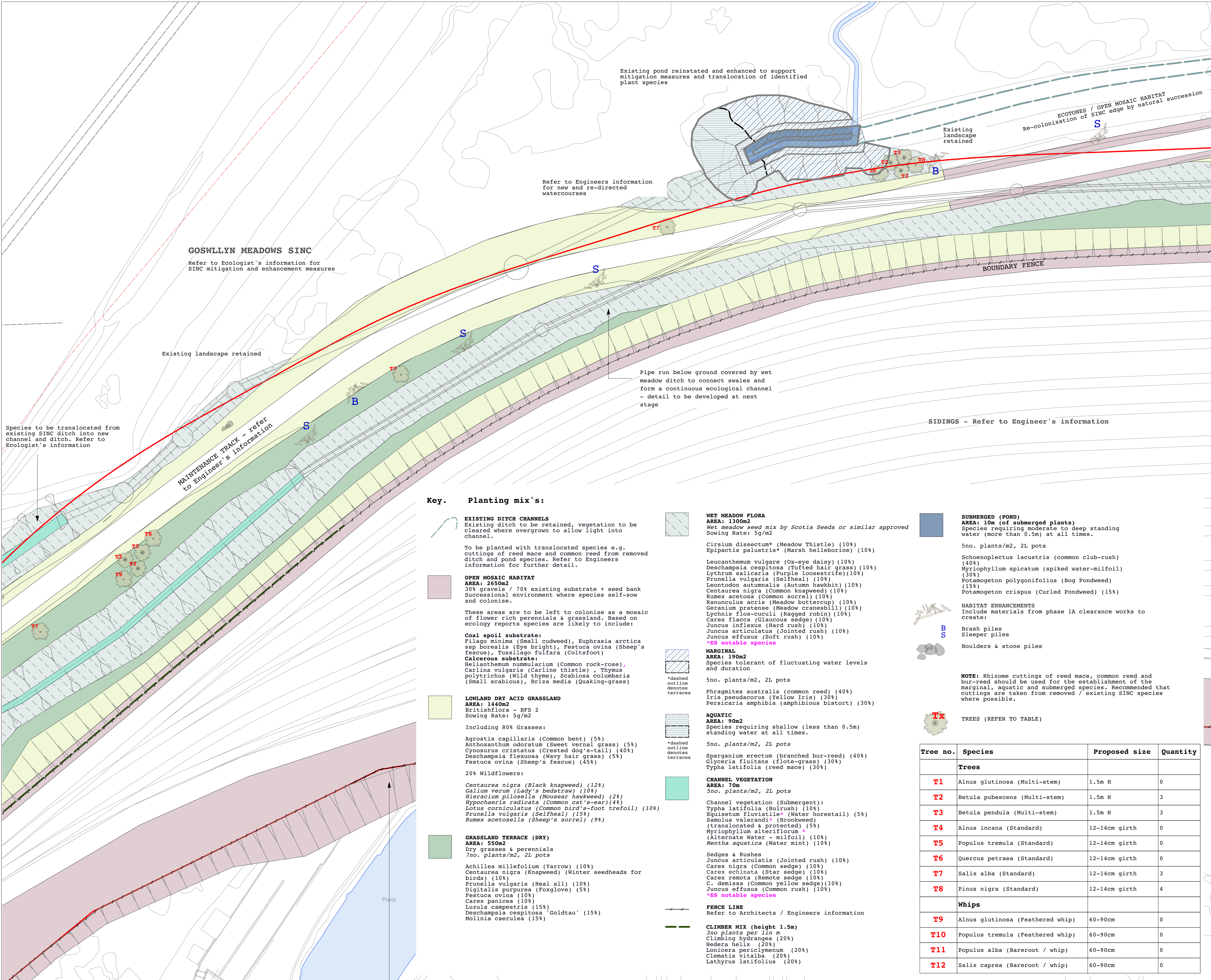
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Drawing Number

OW181.P.05.PP

Revision

P01



Key. Planting mix's:

- EXISTING DITCH CHANNELS**
Existing ditch to be retained, vegetation to be cleared where overgrown to allow light into channel.

To be planted with translocated species e.g. cuttings of reed mace and common reed from removed ditch and pond species. Refer to Engineers information for further detail.
- OPEN MOSAIC HABITAT**
AREA: 2650m²
30% gravels / 70% existing substrate + seed bank
Successional environment where species self-sow and colonise.

These areas are to be left to colonise as a mosaic of flower rich perennials & grassland. Based on ecology reports species are likely to include:

Coal spoil substrate:
Filago minima (Small cudweed), Euphrasia arctica ssp borealis (Eye bright), Festuca ovina (Sheep's fescue), Tussilago fulfara (Coltsfoot)
Calcerous substrate:
Helianthemum nummularium (Common rock-rose), Carlina vulgaris (Carlina thistle), Thymus polytrichus (Wild thyme), Scabiosa columbaria (Small scabious), Briza media (Quaking-grass)
- LOWLAND DRY ACID GRASSLAND**
AREA: 1440m²
Britishflora - BFS 2
Sowing Rate: 5g/m²

Including 80% Grasses:

Agrostis capillaris (Common bent) (5%)
Anthoxanthum odoratum (Sweet vernal grass) (5%)
Cynosurus cristatus (Crested dog's-tail) (40%)
Deschampsia flexuosa (Wavy hair grass) (5%)
Festuca ovina (Sheep's fescue) (45%)

20% Wildflowers:

Centaurea nigra (Black knapweed) (12%)
Galium verum (Lady's bedstraw) (10%)
Hieracium pilosella (Mouseear hawkweed) (2%)
Hypochaeris radicata (Common cat's-ear) (4%)
Lotus corniculatus (Common bird's-foot trefoil) (10%)
Prunella vulgaris (Selfheal) (15%)
Rumex acetosella (Sheep's sorrel) (9%)
- GRASSLAND TERRACE (DRY)**
AREA: 550m²
Dry grasses & perennials
7no. plants/m², 2L pots

Achillea millefolium (Yarrow) (10%)
Centaurea nigra (Knapweed) (10%)
Digitalis purpurea (Foxglove) (5%)
Festuca ovina (10%)
Carex panicea (10%)
Luzula campestris (15%)
Deschampsia cespitosa 'Goldtau' (15%)
Molinia caerulea (15%)
- CHANNEL VEGETATION**
AREA: 70m
5no. plants/m², 2L pots

Channel vegetation (Submergent):
Typha latifolia (Bulrush) (10%)
Equisetum fluviatile (Water horehound) (5%)
Samolus valerandi (Brookweed) (translocated & protected) (5%)
Myriophyllum alterniflorum (Alternate Water - milfoil) (10%)
Mentha aquatica (Water mint) (10%)

Sedges & Rushes
Juncus articulatus (Jointed rush) (10%)
Carex nigra (Common sedge) (10%)
Carex echinata (Star sedge) (10%)
Carex remota (Remote sedge) (10%)
C. demissa (Common yellow sedge) (10%)
Juncus effusus (Common rush) (10%)
***ES notable species**
- FENCE LINE**
Refer to Architects / Engineers information

- WET MEADOW FLORA**
AREA: 1300m²
Wet meadow seed mix by Scotia Seeds or similar approved
Sowing Rate: 5g/m²

Cirsium dissectum* (Meadow Thistle) (10%)
Epipactis palustris* (Marsh helleborine) (10%)

Leucanthemum vulgare (Ox-eye daisy) (10%)
Deschampsia cespitosa (Tufted hair grass) (10%)
Lythrum salicaria (Purple loosestrife) (10%)
Prunella vulgaris (Selfheal) (10%)
Leontodon autumnalis (Autumn hawkbit) (10%)
Centaurea nigra (Common knapweed) (10%)
Rumex acetosa (Common sorrel) (10%)
Ranunculus acris (Meadow buttercup) (10%)
Geranium pratense (Meadow cranesbill) (10%)
Lycchnis flos-cuculi (Ragged robin) (10%)
Carex flacca (Glaucous sedge) (10%)
Juncus inflexus (Hard rush) (10%)
Juncus articulatus (Jointed rush) (10%)
Juncus effusus (Soft rush) (10%)
***ES notable species**
- MARGINAL**
AREA: 190m²
Species tolerant of fluctuating water levels and duration

5no. plants/m², 2L pots

Phragmites australis (common reed) (40%)
Iris pseudacorus (Yellow Iris) (30%)
Persicaria amphibia (amphibious bistort) (30%)
- AQUATIC**
AREA: 90m²
Species requiring shallow (less than 0.5m) standing water at all times.

5no. plants/m², 2L pots

Spartanium erectum (branched bur-reed) (40%)
Glyceria fluitans (flote-grass) (30%)
Typha latifolia (reed mace) (30%)
- CHANNEL VEGETATION**
AREA: 70m
5no. plants/m², 2L pots

Channel vegetation (Submergent):
Typha latifolia (Bulrush) (10%)
Equisetum fluviatile (Water horehound) (5%)
Samolus valerandi (Brookweed) (translocated & protected) (5%)
Myriophyllum alterniflorum (Alternate Water - milfoil) (10%)
Mentha aquatica (Water mint) (10%)

Sedges & Rushes
Juncus articulatus (Jointed rush) (10%)
Carex nigra (Common sedge) (10%)
Carex echinata (Star sedge) (10%)
Carex remota (Remote sedge) (10%)
C. demissa (Common yellow sedge) (10%)
Juncus effusus (Common rush) (10%)
***ES notable species**
- FENCE LINE**
Refer to Architects / Engineers information
- CLIMBER MIX (height 1.5m)**
3no plants per 1in m
Climbing hydrangea (20%)
Hedera helix (20%)
Lonicera periclymenum (20%)
Clematis vitalba (20%)
Lathyrus latifolius (20%)

- SUBMERGED (POND)**
AREA: 10m (of submerged plants)
Species requiring moderate to deep standing water (more than 0.5m) at all times.

5no. plants/m², 2L pots

Schoenoplectus lacustris (common club-rush) (40%)
Myriophyllum spicatum (spiked water-milfoil) (30%)
Potamogeton polygonifolius (Bog Pondweed) (15%)
Potamogeton crispus (Curled Pondweed) (15%)
- HABITAT ENHANCEMENTS**
Include materials from phase 1A clearance works to create:

Brash piles
Sleeper piles
Boulders & stone piles
- TREES (REFER TO TABLE)**

Tree no.	Species	Proposed size	Quantity
Trees			
T1	Alnus glutinosa (Multi-stem)	1.5m H	0
T2	Betula pubescens (Multi-stem)	1.5m H	3
T3	Betula pendula (Multi-stem)	1.5m H	3
T4	Alnus incana (Standard)	12-14cm girth	0
T5	Populus tremula (Standard)	12-14cm girth	0
T6	Quercus petraea (Standard)	12-14cm girth	0
T7	Salix alba (Standard)	12-14cm girth	3
T8	Pinus nigra (Standard)	12-14cm girth	4
Whips			
T9	Alnus glutinosa (Feathered whip)	60-90cm	0
T10	Populus tremula (Feathered whip)	60-90cm	0
T11	Populus alba (Bareroot / whip)	60-90cm	0
T12	Salix caprea (Bareroot / whip)	60-90cm	0

REFER TO OW181.P.00.LP for full extent of open mosaic areas

Key. Planting mix's:

- OPEN MOSAIC HABITAT**
AREA: 1280m²
30% gravels / 70% existing substrate + seed bank
Successional environment where species self-sow and colonise.

These areas are to be left to colonise as a mosaic of flower rich perennials & grassland. Based on ecology reports species are likely to include:

Coal spoil substrate:
Pillago minima (Small cudweed), Euphrasia arctica ssp borealis (Fly bur-reed), Festuca ovina (Sheep's fescue), Tussilago fulfara (Coltsfoot)

Calcerous substrate:
Helianthemum nummularium (Common rock-rose), Carlina vulgaris (Carlina thistle), Thymus polytrichus (Wild thyme), Scabiosa columbaria (Small scabious), Briza media (Quaking-grass)
- LOWLAND DRY ACID GRASSLAND AREA**
AREA: 1780m²
BritishFlora - BPS 2
Sowing Rate: 5g/m²

Including 80% Grasses:

Agrostis capillaris (Common bent) (5%)
Anthoxanthum odoratum (Sweet vernal grass) (5%)
Cynosurus cristatus (Crested dog's-tail) (40%)
Deschampsia flexuosa (Wavy hair grass) (5%)
Festuca ovina (Sheep's fescue) (45%)

20% Wildflowers:

Centaurea nigra (Black knapweed) (12%)
Galium verum (Lady's bedstraw) (10%)
Hieracium pilosella (Mouse ear hawkweed) (2%)
Hypochaeris radicata (Common cat's-ear) (4%)
Lotus corniculatus (Common bird's-foot trefoil) (10%)
Prunella vulgaris (Selfheal) (15%)
Rumex acetosella (Sheep's sorrel) (9%)
- GRASSLAND TERRACE (DRY)**
AREA: 950m²
Dry grasses & perennials
7no. plants/m², 2L pots

Achillea millefolium (Yarrow) (10%)
Centaurea nigra (Knapweed) (Winter seedheads for birds) (10%)
Prunella vulgaris (Heal all) (10%)
Digitalis purpurea (Foxglove) (5%)
Festuca ovina (10%)
Carex panicea (10%)
Luzula campestris (15%)
Deschampsia cespitosa 'Goldtau' (15%)
Molinia caerulea (15%)
- WET MEADOW FLORA**
AREA: 2000m²
Wet meadow seed mix by Scotia Seeds or similar approved
Sowing Rate: 5g/m²

Cirsium dissectum* (Meadow Thistle) (10%)
Epipactis palustris* (Marsh helleborine) (10%)
Leucanthemum vulgare (Ox-eye daisy) (10%)
Deschampsia cespitosa (Tufted hair grass) (10%)
Lythrum salicaria (Purple loosestrife) (10%)
Prunella vulgaris (Selfheal) (10%)
Leontodon autumnalis (Autumn hawkbit) (10%)
Centaurea nigra (Common knapweed) (10%)
Rumex acetosa (Common sorrel) (10%)
Ranunculus acris (Meadow buttercup) (10%)
Geranium pratense (Meadow cranesbill) (10%)
Lychnis flos-cuculi (Ragged robin) (10%)
Carex flacca (Glaucous sedge) (10%)
Juncus inflexus (Hard rush) (10%)
Juncus articulatus (Jointed rush) (10%)
Juncus effusus (Soft rush) (10%)

MARGINAL
AREA: 325m²
Species tolerant of fluctuating water levels and duration

5no. plants/m², 2L pots

Phragmites australis (common reed) (40%)
Iris pseudacorus (Yellow Iris) (30%)
Persicaria amphibia (amphibious bistort) (30%)

AQUATIC
AREA: 140m²
Species requiring shallow (less than 0.5m) standing water at all times.

5no. plants/m², 2L pots

Sparganium erectum (branched bur-reed) (40%)
Glyceria fluitans (flote-grass) (30%)
Typha latifolia (reed mace) (30%)

SUBMERGED (POND)
AREA: 20m
Species requiring moderate to deep standing water (more than 0.5m) at all times.

5no. plants/m², 2L pots

Scheuchzeria palustris (common club-rush) (40%)
Myriophyllum spicatum (spiked water-milfoil) (30%)
Potamogeton polygonifolius (Bog Pondweed) (15%)
Potamogeton crispus (Curled Pondweed) (15%)

CHANNEL VEGETATION
AREA: 120m²
5no. plants/m², 2L pots

Channel vegetation (Submergent):
Typha latifolia (Bulrush) (10%)
Equisetum fluviatile* (Water horsetail) (5%)
Samolus valerandi* (Brookweed) (translocated & protected) (5%)
Myriophyllum alterniflorum* (Alternate Water - milfoil) (10%)
Mentha aquatica (Water mint) (10%)

Sedges & Rushes
Juncus articulatus (Jointed rush) (10%)
Carex nigra (Common sedge) (10%)
Carex echinata (Star sedge) (10%)
Carex remota (Remote sedge) (10%)
C. demissa (Common yellow sedge) (10%)
Juncus effusus (Common rush) (10%)

***ES notable species**

HABITAT ENHANCEMENTS
Include materials from phase 1A clearance works to create:

Brush piles
Sleeper piles

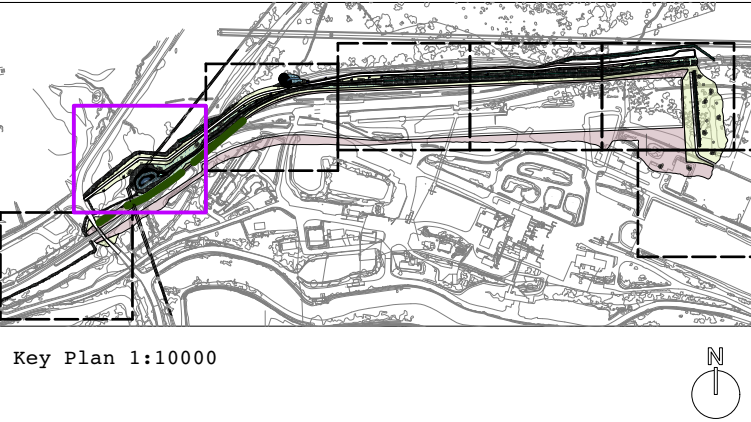
Boulders & stone piles

TREES (REFER TO TABLE)

CLIMBER MIX (height 1.5m)
3no plants per 1in m
Climbing hydrangea (20%)
Hedera helix (20%)
Lonicera periclymenum (20%)
Clematis vitalba (20%)
Lathyrus latifolius (20%)

FENCE LINE
Refer to Architects / Engineers information

Tree no.	Species	Proposed size	Quantity
Trees			
T1	Alnus glutinosa (Multi-stem)	1.5m H	2
T2	Betula pubescens (Multi-stem)	1.5m H	1
T3	Betula pendula (Multi-stem)	1.5m H	2
T4	Alnus incana (Standard)	12-14cm girth	1
T5	Populus tremula (Standard)	12-14cm girth	0
T6	Quercus petraea (Standard)	12-14cm girth	1
T7	Salix alba (Standard)	12-14cm girth	3
T8	Pinus nigra (Standard)	12-14cm girth	2
Whips			
T9	Alnus glutinosa (Feathered whip)	60-90cm	3
T10	Populus tremula (Feathered whip)	60-90cm	3
T11	Populus alba (Bareroot / whip)	60-90cm	2
T12	Salix caprea (Bareroot / whip)	60-90cm	2



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All existing site, tree and building information has been compiled from different sources.

Refer to current revisions of all referenced files.

Notes:

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- To be read in conjunction with Soft Landscape Maintenance plan: OW181.Doc2.MP
- To be read in conjunction with Planting schedule: OW181.Doc1.PS
- To be read in conjunction with Soft landscape specification: OW181.Doc3.LS
- Refer to Engineers drawings for earthworks, hard landscape, levels and drainage information.

Key:

- Application Boundary
- PHASE 1A Boundary

Rev	Date	Description
P01	22.12.2022	FOR PLANNING

JCLA

Jonathan Cook Landscape Architects Ltd
3A Iliffe Yard
LONDON SE17 3QA
Tel +44 (0)207 703 3270
www.jcla.co.uk

Client
GCRC

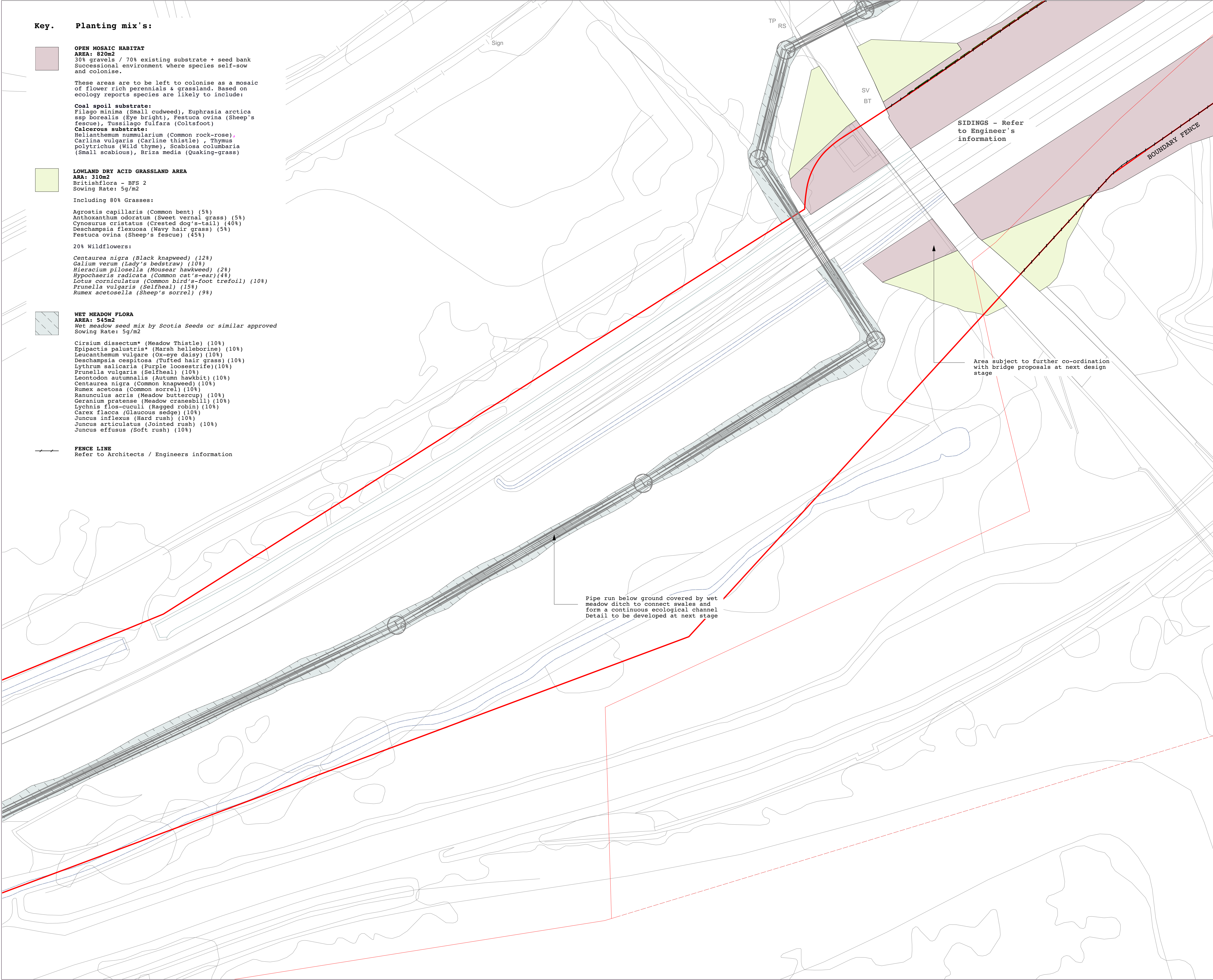
Project
OW181 GCRC Phase 1A

Drawing Title
Proposed Planting Plan: Area 06

Drawing Status FOR PLANNING	Scale 1:250 @ A1
Date 22.12.2022	Revision P01
Drawing Number OW181.P.06.PP	

REFER TO OW181.P.05.PP

REFER TO OW181.P.07.PP



Key Plan 1:10000

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Jonathan Cook Landscape Architects Ltd
3A Iliffe Yard
LONDON SE17 3QA
Tel +44 (0)207 703 3270
www.jcla.co.uk

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Drawing Title

Proposed Planting Plan: Area 07

Drawing Status

FOR PLANNING

Date

22.12.2022

Scale

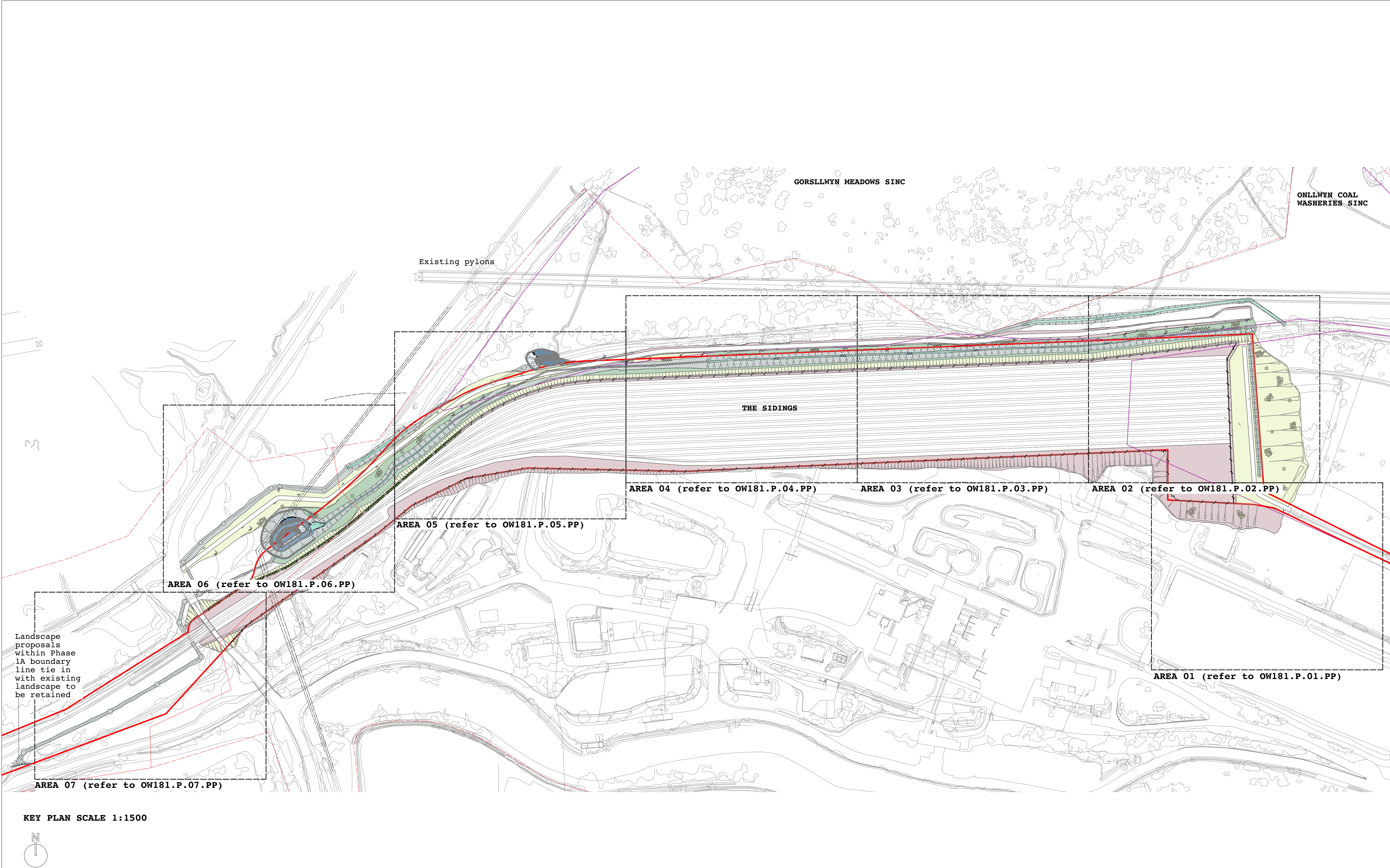
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P01



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- Key:
- Refer to planting plans for detailed species information
- SINC Boundaries - illustrative only
 - Planning Application Boundary
 - PHASE 1A Boundary
 - OPEN MOSAIC HABITAT
 - LOWLAND DRY ACID GRASSLAND
 - GRASSLAND TERRACE
 - WET MEADOW
 - MARGINAL TERRACE
 - AQUATIC TERRACE
 - SUBMERGED / OPEN WATER
 - CHANNEL VEGETATION (SWALE)
 - FENCE LINE TO ARCHITECTS DETAILS
 - PROPOSED TREES

Rev	Date	Description
P01	22.12.2022	FOR PLANNING

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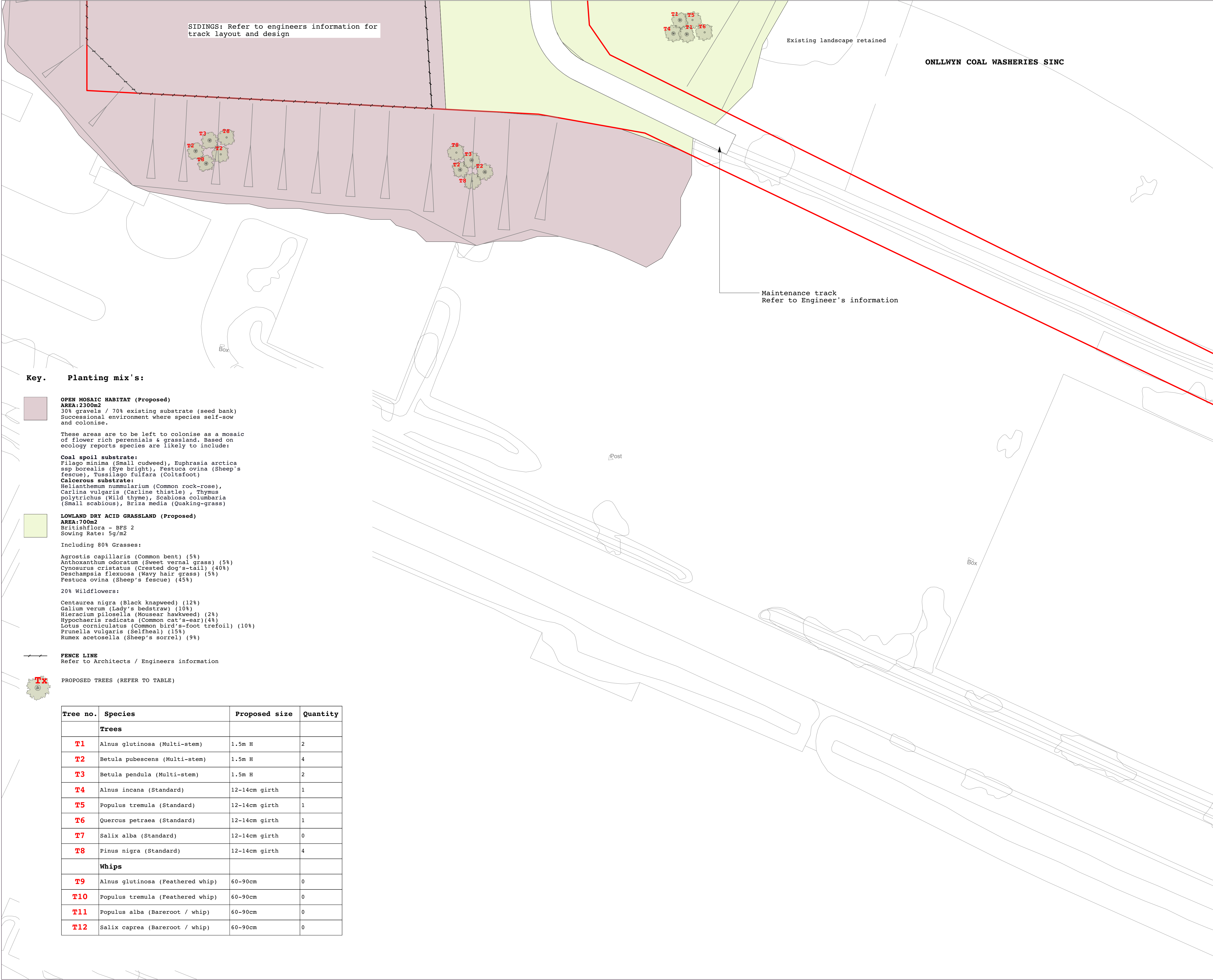
Jonathan Cook Landscape Architects Ltd
3A Iliffe Yard
LONDON SE17 3QA
Tel +44 (0)207 703 3270
www.jcla.co.uk

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OW181 GCRE Phase 1A

Drawing Title
Proposed Soft Landscape Plan

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Drawing Number	Revision
OW181.P.00.LP	P01



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Jonathan Cook Landscape Architects Ltd
3A Iliffe Yard
LONDON SE17 3QA
Tel +44 (0)207 703 3270
www.jcla.co.uk

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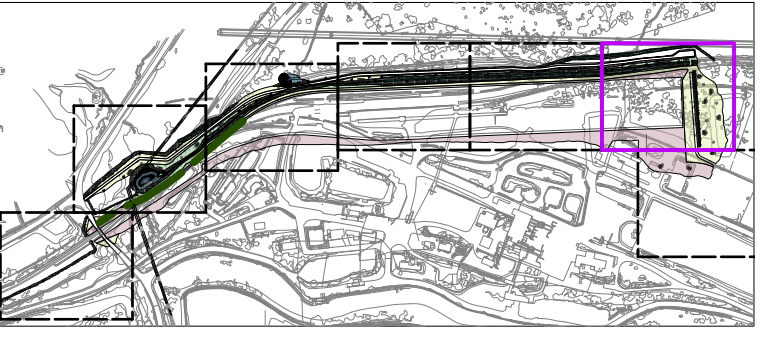
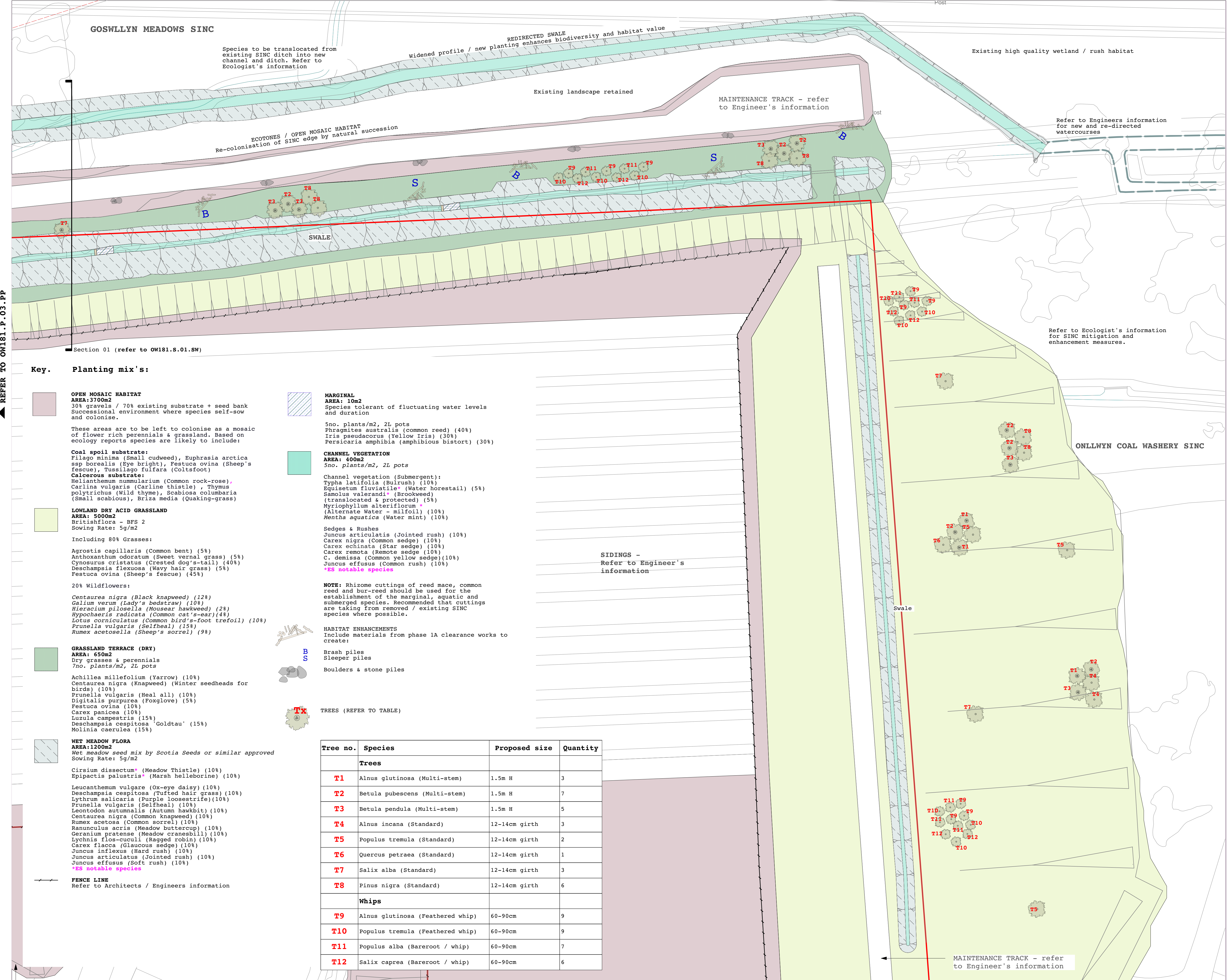
OW181 GCRC Phase 1A

Drawing Title

Proposed Planting Plan: Area 01

Drawing Status	
FOR PLANNING	
Date	Scale
22.12.2022	1:250 @ A1
Drawing Number	Revision
OW181.P.01.PP	P01

REFER TO OW181.P.03.PP



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Jonathan Cook Landscape Architects Ltd
3A Tiliffe Yard
LONDON SE17 3QA
Tel +44 (0)207 703 3270
www.jcla.co.uk

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Drawing Title
Proposed Planting Plan: Area 02

Drawing Status FOR PLANNING	Scale 1:250 @ A1
Date 22.12.2022	Revision P01
Drawing Number OW181.P.02.PP	



**DALCOUR
MACLAREN**

Midlands
4 Bredon Court
Brockridge Park
Twynning
Gloucestershire GL20 6FF

T: 01684 217 703
E: info@dalcourmaclaren.com
E: EPTeam@dalcourmaclaren.com

dalcourmaclaren.com

