NOTES

1. All to architect's and engineer's details.
2. All works to be DDA compliant.
3. Tree replacement numbers based upon AECOM AIA report March 2022.

PROJECT ENGINEER OR SERVICE ENGINEER TO ADVISE ON ROOT PROTECTION REQUIREMENTS AROUND THE PROPOSED PLANTING TO PROTECT SERVICES/BUILDING FOUNDATIONS.

N

SCALE 1 : 200

m 10 0 10 m

WILDFLOWER SEED MIXES
EMORSGATE EM 4 WILDFLOWER SEED MIX.
20 % Wild Flowers %
1.2% Achilla millefolium – Yarrow.
0.2% Agrimonia eupatoria – Agrimony.
0.1% Betonica officinalis – Betony.
3.0 Centaurea nigra – Common Knapweed.
0.4% Daucus carota – Wild Carrot.
0.3% Filipendula ulmaria – Meadowsweet.
1.5% Galium verum – Ladys Bedstraw.
0.4% Geranium pratensis – Meadow Cranes Bill.
0.5% Lathyrus pratensis – Meadow Vetching.
1.0% Leucanthemum vulgare – Oweye Daisy.
0.2% Lotus corniculatus – Birdsfoot Trefoil.
2.5% Malva moschata – Musk mallow.
4.1% Plantago lanceolata – Ribwort Plaintain.
0.2% Primula veris – Cowslip.
1.6% Ranunculus acris – Meadow Buttercup.
1.5% Rhianthus minor – Yellow Rattle.
0.2% Rumex acetosa – Common Sorrel.
0.1% Silaum silaus – Pepper Saxifrage.
80% Grasses
Agrostis capillaris – Common Bent.
Anthoxanthum odoratum – Sweet Verna Grass.
Briza media – Quaking Grass.
Cynosurus cristatus – Crested Dogstail.
Festuca rubra – Red Fescue.
Trisetum flavescens – Yellow Oat Grass.
Emorsgate EM4. – Meadow mixture for clay soils @ 40kg per ha.

PLANTING SPECIFICATION

GROUND PREPARATION - GENERAL

Preparing for topsoiling
Grading and cultivation shall be in accordance with BS 4428:1989 section 4. Subsoil that is to receive topsoil shall, whether obviously over compacted or not, be thoroughly broken up by hand, by heavy rotovator, or by subsoiler or tined equipment with adequate passes made to thoroughly break up the surface to a depth of 150mm, cleared of all large stones, bricks, perennial weeds, tree roots (excluding living tree roots), coarse vegetation and other extraneous matter.

Subsoiling grading
Subsoil shall shall only be graded after loosening as above and this shall be undertaken by the use of a tractor and blade grader on large areas and by hand on small areas. The ground shall at no time be traversed by heavy machinery, for grading or any other purposes after subsoiling and / or topsoiling has taken place.

Making up levels
When subsoil is deposited in low lying areas to raise formation levels, it shall be lightly consolidated and let broken up to receive topsoil. Imported fill material shall be natural subsoil free from metal, concrete or organic material with any one dimension greater than 50mm. All imported fill material shall be approved by the Landscape Architect prior to spreading on site.

Supply of topsoil
Topsoil shall be approved by the Landscape Architect and details of the source of supply shall be provided in order that inspection maybe made before delivery commences. Topsoil shall conform to BS 3882:2015, Recommendations and Classification for Topsoil, clause 4.1a. The soil shall be free of weed, root or perennial weeds, pests, diseases, debris, tree roots, sticks, subsoil and foreign matter and shall be capable of being broken down int a fine tilth.

Temporary topsoil heaps
The depositing if temporary heaps of topsoil shall be so arranged that possible damage to existing grass, plants, tarmacadam, paving etc is avoided. Unless otherwise agreed by the Landscape Architect, temporary spoil heaps shall be on protected ground. Such protection shall take the form of tarpaulins, plastic sheets, boards or similar covering. If damage does occur, it shall be made good at the contractors own expense. Areas excavated to receive topsoil but have not had the base loosened shall not be used as temporary off loading areas. If the bottom of the excavation has been loosened off, loading on these areas is permissible.

Spreading topsoil
Prior to topsoil replacement the formation level shall be cleared of all stones, rubbish, debris with any one dimension greater than 50mm. Areas to be seeded or turfed shall be covered by topsoil 100mm thick and areas to be planted 400mm thick. Topsoil shall be spread in an evenly consolidated layer and shall be left cleared of all roots, stones and debris with any one dimension greater than 50mm throughout its depth. Unless otherwise stated the finished level shall be 25mm above adjacent hard areas. No topsoil shall be spread until the subsoil grade has been inspected by a Landscape architect.

PLANTING

Cultivation
Planting areas shall be rotavated to a depth of 225mm in the original ground, or where the ground is compacted, ripped and rotavated. Pick off stones, bricks, timber and all other debris arising which have any dimensions greater than 50mm and remove off site to tip. Do not cultivate across any drain where the stone is flush with the ground surface.

Soil improvers
Where directed composts, fertilisers or other additives shall be incorporated into the soil. Spent mushroom compost or similar shall be spread to the specified thickness and incorporated by rotavating into the top 150mm. Fertilisers, organic or inorganic shall be raked into the top 25mm.

Rejection of plants
All planning material shall comply with the minimum requirements of BS 3936-1:1992 Specification for trees and shrubs and BS 3936-4:207 Specification for forest trees. Any plant material which in the opinion of the Landscape Architect , does not meet the requirements of the Specification, or is unsuitable, or defective in any other way, will be rejected. The minimum sizes in the plant schedule will be strictly enforced. The contractor shall replace all plants rejected at his own cost.

Planting
All plant material shall be generally be planted between November and March in open cool weather. Planting shall not take place in frosty, snowy or waterlogged conditions. Where approved, poit or container grown plants maybe planted outside the described season, but adequate watering shall be supplied. Torn or damaged roots and branches shall be cleanly pruned prior to planting.

Planting of whips, transplants and shrubs.
The nature of the material to be planted shall be variable and the contractor shall allow for planting to be properly carried out in all cases as described in BS 4428: 1989 section 7. All plants shall be planted at same depth or very slightly deeper, than as they were grown. Roots shall not be bent, broken or forced into inadequate pits or notches. Plants shall be upright, firmed in and wind resistant, with no air pockets around the roots. All pots and root wrappings shall be carefully removed prior to planting. All pots and wrappings arising shall immediately be picked up and stored ready for removal to tip. Plants shall be planted at the specified centres. On steep slopes this shall be in the horizontal measure.

Tree planting within soft landscape areas.
Trees shall to conform to BS:3936-1: 1992 and shall be planted in tree pits of the following sizes unless otherwise directed:
Feathered trees - 900x900x450mm.
Selected standards - 1000x1000x600mm.
Heavy standards / Extra heavy standards - 1200x1200x600mm.
Excavated subsoil or stone shall be carted off site to tip. The top 300mm of pit shall be backfilled with imported topsoil as specified unless directed otherwise.

Compost for planting pits
Compost shall be a propriety product, bark based incorporating fertilisers and improving additives. The type of compost shall be approved before its delivery to site and the details of the product shall be supplied. Cambark planting compost is approved. Where directed compost shall be added to and mixed with topsoil backfill at the following rates :
Feathered trees - 40 litres.
Selected standards - 60 litres.
Heavy standards / Extra heavy standards - 80 litres.

Stakes for trees
Stakes shall be peeled round softwood, pointed, minimum diameter 75mm. The stakes shall be driven into the base of the tree pit prior to placing the tree and backfilling. Stakes shall in general have a clear height above the finished ground level as follows unless directed otherwise:
Feathered trees - 750mm (1 stake / 1 tie).
Selected standards - 900mm (2 stakes / 1 tie each).
Heavy standards / Extra heavy standards - 1200mm (2 stakes / 1 tie each or underground guyed as specified).
The stake shall be long enough to drive until they hold the tree firmly without rocking.

Tree ties
Ties for bareroot trees, shall be approved rubber nail-on type with cushioned spacer such as Toms or other equal approved. Nails shall be flat headed galvanised and shall hold the ties securely into the stake. Ties shall not e over tight on the tree stems. Tues available from J Toms Ltd, Wheeler Street, Headcorn Ashford, Kent, TN27 9SH.
Feathered - Type 04 (1 tie).
Selected standards - Type L1 (1 tie per stake).
Heavy standards / Extra heavy standards - Type L3 (1 tie per stake).

Ties for rootball and container grown trees shall be 50mm rubber tree belts in a figure of eight around the tree. Fixed to the stake with two flat head galvanised nails.
Feathered - 1 belt.
Selected standards - 2 belts.
Heavy standards /Extra heavy standards - 2 belts.

Planting of trees
The tree shall be set uprights and at the same depth as grown in the nursery, the roots shall be spread out (bareroot) and the soil followed by compost topsoil topsoil mixture, backfilled. Backfilling should be done to ensure close contact between roots and topsoil by firming in layers. The soil shall be left level and tidy, any subsoil clods, bricks or stones over 50mm arising, collected and carted off site.

Mulching
A 75mm compacted layer of medium grade pulverised bark, with size of not more than 100mm and containing no more than 10% fines, shall be spread to forma a continuous layer covering the whole of the bed or in the case of standard trees within grass shall be in the form of a circle 600mm diameter around the base of the tree. Whips and transplants shall be mulched in the form of a 300mm diameter circle around the base of the tree. Where trees are planted within grass a circular help mulch mat is required beneath the layer of mulch at the diameters stated above, secured with fixing pegs. The tree pit surface shall be as big as possible.

TURFING

Soil preparation and cultivation
All areas to be turfed shall be cultivated to a depth of at least 100mm, all weeds, sstones and refuse larger that 50mm shall be removed to Contractors tip and shall be brought to a fine tilth. Allow for hand cultivation where machine work is not possible.

Turf
Turf shall be extra quality meadow turf and shall comply to BS 3969:1998 +A1:2013 and shall be laid in accordance with BS 4428: 1998, section 6 Turfing. The contractor shall supply a sample of the turf proposed for use for the approval of the Landscape Architect and shall ensure that that all supplied turves are similar to the approved sample. The contractor shall inform the Landscape Architect of the location of the supply, so that the turf can be inspected prior to lifting.

Season
Turf shall be laid when weather and soil conditions are suitable and where possible, preference should be given to autumn and early winter operations. No turf shall be laid in exceptionally dry or frosty weather or in other unsuitable weather conditions.

Delivery and stacking
For large areas, turf shall be delivered at the appropriate intervals throughout the work so as to avoid stacking for long periods.

Laying
No turf shall be laid until the soil preparation has been satisfactorily completed by being brought to an even tilth and firmness. Turves from the stack shall be wheeled to the turf layers on planks laid closely side by side. Adequate timber planks shall be used to support operatives and barrows and provide access. The turves shall be laid in consecutive rows with broken joints (stretcher bond), closely butted and to the correct levels. The turf shall be laid off planks working over turves previously laid. Where necessary the turves shall be lightly and evenly firmed with wooden beaters, the bottom beaters being frequently cleaned of accumulated soil or mud. A dressing of finely sifted topsoil shall be applied and brushed into the joints. Any inequalities in finished levels owing to variations if turf thickness or uneven consolidation of the soil shall be adjusted by raking and / or packing fine soil under the turf. A roller shall not be used. The finished levels of the turf shall confirm to the levels indicated, allowing for final settlement. Turf edges and margins shall be laid with whole turves. Turves adjoining buildings, walls or fences shall be taken to the face of the structure, giving complete soil cover.

Laying around trees
Turf shall not be laid to within 300mm of any tree trunk.

Watering
The contractor shall be responsible for the replacement of any scorched turf. All necessary watering shall be carried out with sprinklers or oscillating spays so not as to wash soil out of joints. If shrinkage occurs and joins open, fine topsoil shall be brushed in and well watered.

PROTECTION TO EXISTING TREES

General
The recommendations in BS 5837:2012, *Trees in Relation to Design, Demolition & Construction* must be complied with at all times. No pruning, lopping, felling or severance of roots to take place without prior consent of the local authority. All work to the existing trees is to be carried out by suitably qualified arboriculturalist / tree surgeon. The position and construction of protective fencing shall be agreed with the local authority prior to any site works commencing. Under no circumstances shall any material be stored under the canopy of existing trees and no cement, diesel or oil stored near them. No vehicles shall pass under the canopy of existing trees. No ropes, cables, services or notice boards shall be fixed to existing trees. Under no circumstances shall levels around existing trees be either raised or reduced. Scaffolding my only be erected in protected areas if it is done so in accordance with BS 5837. Any excavations under existing tree canopies shall be done by hand.

MAINTENANCE

General
All maintenance to be carried out upto handover to the adopting authority / client / householder from the date of planting and turfing to ensure successful establishment. All dead , diseased, damaged plants must be replaced during this time unless the local Planning Authority states in writing, any variation to this.

Weeding
All beds to be kept weed free by hand weeding. Beds to be forked over as necessary to keep soil loose to approved cambers with no hollows.

Pruning
At the appropriate time, prune plants to remove dead, dying or diseased wood and suckers to promote healthy growth and natural shape.

Watering
The contractor shall ensure that sufficient water is applied to maintain healthy growth.

Litter
The site is to be kept free of litter.

Grass cutting
The initial cut shall be carried out when the first growth is apparent, blades set 30mm above ground level. The contractor shall continue cutting operations at appropriate intervals during the growing season and maintain a 40mm high sward until grass areas are handed over. Watering, weeding cutting, repair of all erosion and settlement and re-seeding as necessary to establish a uniform and healthy stand of grass shall continue until handover.

WILDFLOWER SEEDING AND MAINTENANCE

Soil preparation and cutting
Final grading of topsoil shall be agreed by the Landscape architect before cultivation and seeding. All areas to be seeded shall be cultivated to 150mm depth and all weeds, stones and refuse larger than 50mm shall be removed to tip. Cultivated soil shall be rolled and raked to produce a tilth 25mm deep. Allow for hand cultivation where machine work is not possible. Seed sowing must immediately follow the preparation of the seed bed.

Seeding
Sowing shall be carried out during calm weather. All sowing is at the contractors own risk and any areas where germination fails shall be re seeded at the contractors expense.

Seed mix
The seed mixes as specified, shall be installed as per suppliers recommendations. Grass seed shall be of the composition, purity and germination as specified in BS 4428:1989. Certificates of purchase shall be provided for all deliveries prior to the sowing of grass seed. Stating source, mixture, purity and germination percentage. Alternative cultivars of the above mix species may only be used if approved by the Landscape Architect.

Protection of newly seeded areas
All reasonable precautions shall be undertaken to ensure that pedestrian and other traffic does not cross the grass during cultivation, seeding or until the grass is established. Where obvious short cuts are appearing, the contractor shall erect an approved temporary fence so as to minimise the maintenance period or until such time as it is no longer necessary, or as directed.

First cut
When the grass is 100mm high, it shall be cut down to 50mm so as to avoid root pulling. If the grass has been allowed to grow longer than 100mm then the cuttings shall be raked off and taken off site.

Second cut
When the grss is 65mm high a second cut shall be carried using a rotary mower. No more than one thirds of the foliage must be removed.

Subsequent cuts
Thereafter, when the grass grows to 100mm high, it shall be cut down to 50mm with a flail type mower, until the end of the maintenance period, or longer if so directed. The grass shall be cut on a regular basis if so directed.

Making good
Any defects such as shrinkage, ponding, sparse germination or disease shall be make good and re seeded all as above.

Damage to existing grass
The contractor will be responsible for cultivating, seeding and maintaining as above all areas of existing turf that are damaged during the course of the works or reasons of storage, working areas, transport of materials excepting those areas which are specifically defined and measured in the contract. Any areas which in the opinion of the Landscape Architect are consolidated during the course of these works, shall be loosened with a ripper or other suitable implement to ensure adequate drainage through the sub soil.

WILDFLOWER SEEDING & MAINTENANCE

Preparation for seeding
No topsoil shall be imported into the wildflower areas and seed should be sown into good quality, clay free sub soil. The area shall be cultivated to 150mm depth and all weeds, stones and refuse larger that 50mm shall be removed to tip (cultivation of soil not to occur beneath existing tree canopies). Cultivated soil shall be rolled and raked to produce a tilth 25mm deep and left for 2-3 weeks to allow existing weeds in the seed bank to germinate. After 2-3 weeks a spray of the newly germinated weeds shall be carried out, allowed to die back and then raked off. Seed sowing must be undertaken immediately after the area has ben prepared and weeds removed, lightly watering area before seeding. Seed shall be sown late August or September or, if this is not possible during April to May.

Wildflower seed
Sowing shall be carried out during calm weather. All sowing is at the contractors own risk and any areas where germination fails shall be re seeded at the contractors expense. The operation should be carried out in equal sowings and in transverse directions. The contractor must ensure that the grass and wildflower seed is thoroughly mixed throughout sowing. The seed mix shall be sown at the rate specified by the supplier and then raked into the soil surface and lightly rolled.

Wildflower seed mix
Sow the wildflower seed specified as specified. Certificates of purchase shall be provided for all deliveries prior to the sowing of the wildflower seed mix, stating source, mixture, purity and germination percentage. Sources must be of indigenous source.

Protection of newly seeded wildflower area
All reasonable precautions shall be undertaken to ensure that pedestrian and other traffic does not cross the wildflower areas during cultivation, seeding or establishment. Where obvious short cuts are appearing , the contractor shall erect an approved temporary fence so as to minimise the maintenance period or until such time as it is no longer necessary, or as directed.

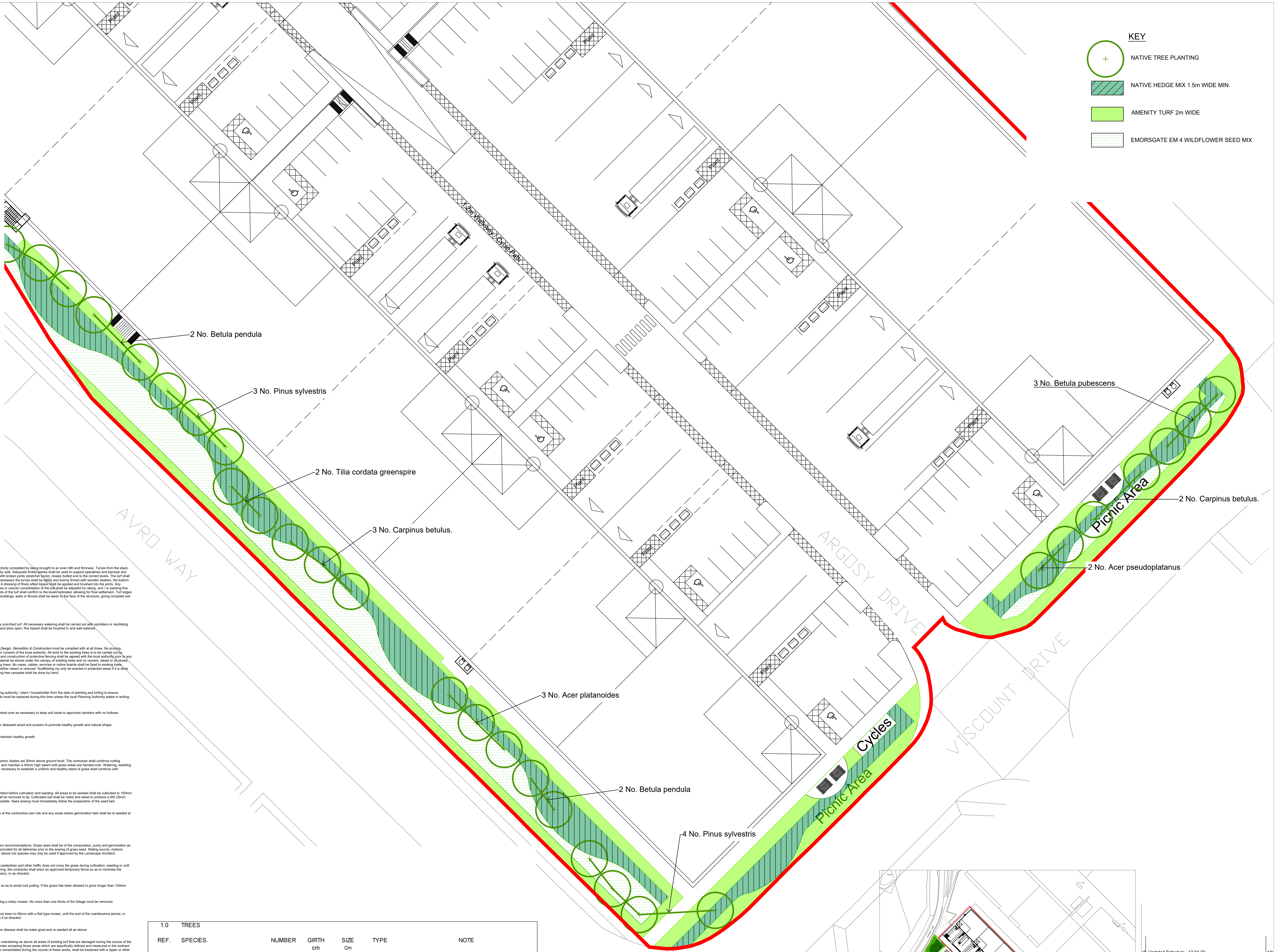
First cut of wildflower meadow
Areas seeded August to September shall be lightly cut in the following spring using a flail mower or strimmer, when the meadow reaches a height of 100mm. Areas seeded during April to may shall be cut in October when flowering is over. In both cases all cuttings shall be raked up and removed from site.

Subsequent cuts
Hereafter cutting shall be undertaken with a flail mower or strimmer when flowering is over, annually during September to October. All cuttings shall be raked up and removed from site.

Making good
Any defects such as shrinkage, ponding, sparse germination or disease shall be made good and re seeded as above.

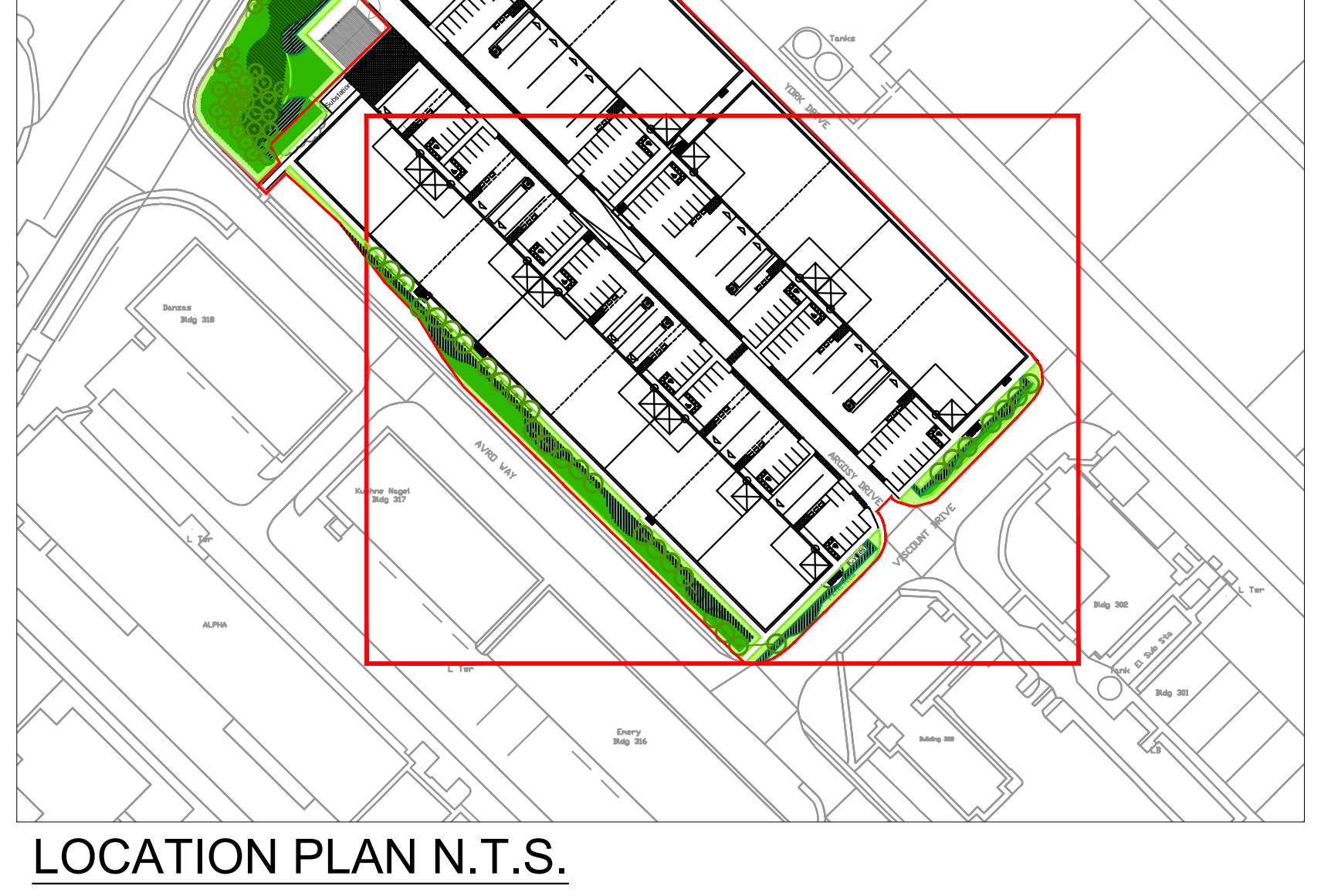
REF.	SPECIES.	NUMBER	GIRTH cm	SIZE Cm	TYPE	NOTE
1.0	TREES					
1.1	Tilia Cordata Greenspire	2	16-18	NA	RB	Underground guyed.
1.2	Betula pendula.	7	16-18	NA	RB	Underground guyed.
1.3	Betula pubescens	3	16-18	NA	RB	Underground guyed.
1.4	Acer platanoides	3	16-18	NA	RB	Underground guyed.
1.5	Acer pseudoplatanus	2	16-18	NA	RB	Underground guyed.
1.6	Pinus sylvestris.	7	250-275	NA	RB	Underground guyed / Feathered.
1.7	Carpinus betulus	8	16-18	NA	RB	Underground guyed.
2.0	NATIVE HEDGE PLANTING					
			%			
	Tilia cordata greenspire	130	10	75		Planted in 100cm biodegradable grow tube / stake.
	Alnus glutinosa.	65	5	75		Planted in 100cm biodegradable grow tube / stake.
	Betula pubescens.	185	15	75		Planted in 100cm biodegradable grow tube / stake.
	Carpinus betulus.	370	30	75		Planted in 100cm biodegradable grow tube / stake.
	Acer platanoides	260	20	75		Planted in 100cm biodegradable grow tube / stake.
	Acer pseudoplatanus	65	5	75		Planted in 100cm biodegradable grow tube / stake.
	Populus tremula.	120	10	75		Planted in 100cm biodegradable grow tube / stake.
	Taxus baccata.	65	5	50		

The above to be planted at 2 plants per m2.



KEY

○	NATIVE TREE PLANTING
▨	NATIVE HEDGE MIX 1.5m WIDE MIN.
🟩	AMENITY TURF 2m WIDE
░	EMORSGATE EM 4 WILDFLOWER SEED MIX



LOCATION PLAN N.T.S.

r3	Updated Schedule. 17.04.23	AP
r2	Updated Planting and Schedule. 16.03.23	AP

NOTE:
1. Do not scale from this drawing.
2. All setting out, levels and dimensions to be agreed on site.
3. The dimensions of all materials must be checked on site before being laid out.

Project:
MAG Argosy Drive Development
Manchester Airport

Title:
Ecological Enchancements &
Planting Plan Part 2

AMENITYTREE
ENVIRONMENTAL PLANNING CONSULTANTS
Willow Cottage, School Lane, Burdwarsley, CH3 9NX. 01829 770 075

Status: Planning

First Issued: DEC 2022
Drawn: AP
Scale: 1:200
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