IMPLEMENTATION AND MAINTENANCE GUIDELINES

1.0 GENERAL

All plants shall conform to BS 3936 and be in accordance with the National Plant Specification. Supplying nurseries shall be registered under the HTA Nursery Certification Scheme. All plants shall be packed and transported in accordance with the Code of Practice for Plant Handling as produced by CPSE. Planting shall not be carried out when the ground is waterlogged, frostbound or during periods of cold drying winds. All bare root stock shall be root dipped in an approved water-retaining polymer.

If the formation level is compacted it should be ripped through before topsoiling.
Recommended topsoil depths are 300mm for shrubs and 150mm for grass.

2.0 ORNAMENTAL SHRUBS AND TREES

2.1 Ground Preparation
Where necessary treat existing weeds with a glyphosate based herbicide and allow a suitable period as recommended by the manufacturer for this to take effect. A general purpose slow release fertiliser at the rate of 75gm/m2 and Tree Planting and Mulching Compost at the rate of 20litres/m2 are to be incorporated into the top 150mm of topsoil during final cultivations. All extraneous matter such as plastic, wood, metal and stones greater than 50mm in any dimension shall be removed from site.

Tree pits to the specified size are to be excavated and the base broken up a further 150mm with the sides well scarified to prevent smearing. All trees up to and including selected standards are to be supported with single 75mm diameter stakes. All rootball, container grown and trees over heavy standard size shall be double staked. Stakes should be driven 500mm into undisturbed ground before planting the tree, taking care to avoid underground services and cables etc.

2.2 Planting
Shrubs and hedges are to be set out as shown on the drawing and pit planted into the prepared soil at the specified centres with minimal disturbance to the rootball and well firmed in.

Trees are to be placed into the pits and backfilled with topsoil incorporating slow release fertilizer and Tree Planting and Mulching Compost as specified. Firm trees in well and secure with proprietary rubber tree ties and spacers.

Water in all trees and shrubs at the end of each day of planting.

Spread ornamental pine bark mulch to a depth of 75mm across all new planting areas, ensuring groundcover plants are not buried

2.3 Maintenance
The landscape contractor shall maintain all areas of new planting for a period of 12 months following practical completion. All stock deemed to be dead, dying or diseased within the defects period shall be replaced by the contractor at his own cost.

The site is to be visited monthly throughout the year to undertake the following operations.
Weed clearance: All planting areas are to be kept weed free by hand weeding or herbicide treatment.
Litter clearance: All litter is to be removed from planting beds.
Watering: Planting areas are to be brought up to field capacity at each visit and each tree is to receive 20 gallons.
Checking trees: All tree ties and stakes are to be checked and adjusted if too loose, too tight or if chaffing is occurring. Any broken stakes are to be replaced.
Formative pruning: Any damaged shoots/branches are to be pruned back to healthy wood. Plants are to be pruned in accordance with good horticultural practice to maintain healthy well shaped specimens..

3.0 NATIVE SHRUB PLANTING

3.1. Ground Preparation
The extent of the planting area shall be set out using 38x38x1200mm timber stakes at each change in direction and at a maximum of 50m intervals.

Either : for notch planting
All herbaceous material within the proposed planting area shall be sprayed out using an approved herbicide at least two weeks before planting and the ground shall be cultivated to a depth of 150mm.
or : for pit planting
A 900mm diameter circle shall be sprayed out at each planting station using an approved herbicide at least two weeks before planting.

3.2 Planting
All bare rooted stock is to be root dipped in water retaining polymer. Proposed planting is to be planted on an informal grid. To avoid straight lines each planting station can be moved by up to 300mm in any direction.

Either a for shelters or b for rabbit fence
a. All stock to be protected from rabbit damage using approved proprietory tree and shrub shelters, 900mm and 600mm high respectively, secured with stakes and ties as advised by the manufacturer.
b. All stock to be protected from rabbit damage by 900mm high rabbit fencing erected in accordance with the manufacturers recommendations.

3.3 Maintenance
Using approved herbicides a 900mm diameter circle centered on each planting station shall be kept weed free throughout the maintenance period.

Each Autumn after planting and until handover to the adopting authority, the contractor will prepare a list of all plants which are dead, dying or diseased and will replace these during the following planting season.

4.0 NATIVE HEDGE PLANTING

4.1 Setting Out
The hedge line shall be set out using 38x38x1200 stakes at maximum 50m intervals and all herbaceous material within 400mm of the centre line shall be sprayed out using an approved herbicide at least two weeks before planting.

4.2 Preparation
The 800mm wide hedge line shall be cultivated to 150mm incorporating Enmag or equal at 75gm/m2.

4.3 Planting
Plants shall be notch planted in two rows 250mm apart and staggered at 300mm centres. All plants are to be protected with a 600mm proprietary shelter secured with a stake/cane and ties as recommended by the manufacturer.

4.4 Maintenance
Using approved herbicides a 800mm wide swathe centred on the hedgeline shall be kept weed free throughout the maintenance period.

Each Autumn after planting and until handover to the adopting authority, the contractor will prepare a list of all plants which are dead, dying or diseased and will replace these plants during the following planting season.

5.0 GRASS

5.1 Preparation
The area to be seeded shall be sprayed out with a glyphosate herbicide and cultivated to a depth of 100mm removing all weeds, debris and stones over 25mm diameter. The surface shall be raked to smooth flowing contours with a fine tilth, incorporating pre-seeding fertiliser at 70 g/m2.

5.2 Turf
Turfing operations shall be in accordance with BS 4428.

Whole turves shall be laid around the perimeter of the area to be turfed. The central area shall be laid in rows with staggered joints, well butted together, working from planks positioned on turves already laid. The turf shall be watered on completion. Any unevenness shall be made good by lifting the turf and adjusting the levels. Should shrinkage occur, fine topsoil shall be brushed into the joints.

5.3 Seeding
Grass seed shall be sown in April during calm weather and not when the ground is frost bound or waterlogged. Seed shall be sown in two equal sowings in transverse directions at 35 g/m2. After sowing the contractor shall lightly rake the seed into intimate contact with the soil. All seed mixes to be specified in accordance with those set out in the approved management plan.

5.4 Initial cut
When newly seeded areas reach 50mm they should be cut back to a height of 30mm and then cut twice annually in early Spring and late Summer. All arisings shall be removed or spread evenly across grassland. Any bare patches shall be made good at this time.

6.0 TOPSOIL

6.1 Existing Topsoil
Pre-planting herbicide application:-
Apply by suitable spraying apparatus, an approved translocated systemic herbicide to the manufacturer's instructions and to 1997 Control of Pesticides Regulations and 2003 COSHH regulations on all beds, except those which are both weed free and are to receive agrotextile sheet mulch. Spray immediately if any weeds are present. If none are showing, but there may be a delay before planting, or the area is to be seeded, spray after one month following cultivation, to allow dormant seed to germinate. Re-spraying shall be carried out by skilled and qualified operatives, using protective clothing, in suitable weather (no wind) and any damage caused by spray drift, from incorrect usage or spillage, shall be rectified at the contractor's own cost. Repeat as necessary to ensure complete kill and rake off all dead material from site.

Carry out the following works to the existing topsoil on site to ensure it Conforms to BS 3882:1994, being free from rocks larger than 50m diameter, concrete, all roots, wire, brick, and have less than 20% clay. Allow for pre-application of herbicide as above. Fertilise with 100g per meter square of Vitax "Nutricote 180" slow release fertilizer, in accordance with the manufacturer's instructions. For beds less than 5 meters in width, fork over thoroughly or machine rotovate soil to a depth of 300mm, ensuring that the subgrade and topsoil are completely broken up and free draining, relieving any compaction. For beds greater than 5 metres in width, break up the subgrade and topsoil using a tractor mounted subsoiler or ripper at 500mm centres to a depth of 500mm, except where there are services, or within 10 meters of tree stems or 3 meters of existing hedges. Do not rip areas where roots greater than 10mm diameter are encountered.

6.2 Imported Topsoil
Any imported topsoil for making up ground, shall conform to BS:3882:1994, and be free from rocks over 50mm diameter), concrete, roots, wire and brick, and have less 20% clay.

KEY

Site boundary

Soft landscape proposals
See plant schedule for details.

Areas of turf/grass seed
Turf to plot frontages, amenity grass seed mix to less formal areas.

Swales
See engineer's drawings for futher details.

Existing trees/vegetation to be retained

Tarmacadam surfaced footpath
Tarmacadam surface to footpaths pcc edging.

Bonded gravel footpath
Bonded gravel (natural colour) to footpaths with pcc edging.

PLANT SCHEDULE - Plot Landscape

TREES - To plot frontages

REF	SPECIES	SUPPLY	SIZE(cm)	GIRTH(cm)	CTRS(m)
T1	Liriodendron tulipifera	EHStd	450/650	18/20	As shown
T2	Betula pendula	EHStd	450/625	16/18	As shown
T3	Betula pendula	EHStd	425/600	14/16	As shown
T4	Malus tschonoskii	EHStd	425/600	14/16	As shown
T5	Prunus cerasifera 'Pissardii'	EHStd	425/600	14/16	As shown
T6	Amelanchier 'Robin Hill'	HStd	350/425	12/14	As shown

All trees to be planted in accordance with the implementation and maintenance guidelines. The tree planting schedule and landscape proposals must be referred to by the Structural Engineer during foundation design. No tree species, size or location should be altered without prior approval from the Landscape Architect.

SPECIMEN SHRUBS

REF	SPECIES	SUPPLY	SIZE(cm)	HABIT	CTRS(m)
S1	Acer palmatum 'Sangokaku'	25L	125/150	Bushy	As shown
S2	Cercis canadensis 'Forest Pansy'	25L	125/150	Bushy	As shown
S3	Phormium 'Sundowner'	25L	100/125	Triple Crwn	As shown
S4	Phormium 'Yellow Wave'	25L	100/125	Triple Crwn	As shown
S5	Photinia x fraseri 'Red Robin'	70L	200/225	Std	As shown
S6	Syringa vulgaris 'Madame Lemoine'	35L	125/150	Bushy	As shown

All feature shrubs to be planted in accordance with the implementation and maintenance guidelines. No feature shrub species, size or location should be altered without prior approval from the Landscape Architect.

HEDGEROWS

ABBR	SPECIES	SUPPLY	SIZE(cm)	HABIT	CTRS(m)
CARBET	Carpinus betulus	2xPthd	125/150	Branched	0.50
LIGOV	Ligustrum ovalifolium	10L	80/100	Bushy	0.50

All hedgerow shrubs to be planted in accordance with the implementation and maintenance guidelines. The Landscape proposals must be referred to by the Structural Engineer during foundation design. No hedgerow shrub species, size or location should be altered without prior approval from the Landscape Architect. Hedgerow shrubs to be planted in a single row within a 50cm wide bed and mulched in accordance with implementation and maintenance guidelines. Hedge plants to be trimmed back at time of planting. Carpinus to 1.0m height and Ligustrum 80cm and maintained at this height (60cm maximum height in visibility splays).

SHRUBS/HERBACEOUS

ABBR	SPECIES	SUPPLY	SIZE(cm)	HABIT	CTRS(m)
BRASU	Brachyglottis 'Sunshine'	10L	40/60	Bushy	0.70
CEATHR	Ceanothus thyrsiflorus repens	10L	60/80	Bushy	0.60
CHOAP	Choisya 'Aztec Pearl'	10L	40/60	Bushy	0.70
CHOTES	Choisya ternata 'Sundance'	10L	40/60	Bushy	0.70
CISSP	Cistus 'Silver Pink'	10L	40/60	Bushy	0.65
EUOFOEG	Euonymus fortunei 'Emerald Gaiety'	10L	30/40	Bushy	0.60
EUOFOENG	Euonymus fortunei 'Emerald 'n' Gold'	10L	30/40	Bushy	0.60
HEBMAR	Hebe 'Marjorie'	10L	30/40	Bushy	0.70
HEBPQ	Hebe 'Purple Queen'	10L	30/40	Bushy	0.70
HEBPS	Hebe pinguifolia 'Sutherlandii'	10L	30/40	Bushy	0.60
HEUKLP	Heuchera micrantha 'Keylime Pie'	3L	-	Full Pot	0.40
HEUMIPP	Heuchera micrantha 'Palace Purple'	3L	-	Full Pot	0.40
LAVANHI	Lavandula angustifolia 'Hidcote'	10L	30/40	Bushy	0.60
LAVANMU	Lavandula angustifolia 'Munstead'	10L	30/40	Bushy	0.60
LAVANVE	Lavandula angustifolia 'Vera'	10L	30/40	Bushy	0.60
MAHAQAP	Mahonia aquifolium 'Apollo'	10L	40/60	Bushy	0.60
PITTETT	Pittosporum ten. 'Tom Thumb'	10L	30/40	Bushy	0.70
PRULAOL	Prunus laurocerasus 'Otto Luyken'	10L	60/80	Bushy	0.70
ROSOF	Rosmarinus officinalis	10L	40/60	Bushy	0.70
SARCO	Sarcococca confusa'	5L	20/30	Bushy	0.60
SKIJARU	Skimmia japonica 'Rubella'	10L	40/60	Bushy	0.60
VIBDA	Viburnum davidii	10L	40/60	Bushy	0.70

LARGE SHRUB MIX

ABBR	SPECIES	SUPPLY	SIZE(cm)	HABIT	CTRS(m)
AUCJA	Aucuba japonica	5L	40/60	Bushy	0.75
CORALE	Cornus alba 'Elegantissima'	3L	60/80	Branched	0.75
ELAPUMA	Elaeagnus pungens 'Maculata'	5L	40/60	Bushy	0.75
FATJA	Fatsia japonica	5L	40/60	Bushy	0.75
PHORRRER	Photinia x fraseri 'Red Robin'	5L	60/80	Bushy	0.75
PRULU	Prunus lusitanica	5L	40/60	Bushy	0.75

LOW SHRUB MIX

ABBR	SPECIES	SUPPLY	SIZE(cm)	HABIT	CTRS(m)
CORSTK	Cornus stolonifera 'Kelseyi'	5L	40/60	Branched	0.60
EUOFOEG	Euonymus fortunei 'Emerald Gaiety'	5L	30/40	Bushy	0.60
HEBPAGA	Hebe pinguifolia 'Pagei'	5L	30/40	Bushy	0.60
SKICOKEG	Skimmia confusa 'Kew Green'	5L	30/40	Bushy	0.60

All shrubs to be planted in accordance with the implementation and maintenance guidelines. No shrub species, size or location should be altered without prior approval from the Landscape Architect.

PLANT SCHEDULE - POS Landscape

TREES - To Open Space

REF	SPECIES	SUPPLY	SIZE(cm)	GIRTH(cm)	CTRS(m)
Pt1	Sorbus aria 'Lutescens'	EHStd	425/600	14/16	As shown
Pt2	Acer campestre	HStd	350/425	12/14	As shown
Pt3	Carpinus betulus 'Frans Fontaine'	HStd	350/425	12/14	As shown
Pt4	Prunus padus	HStd	350/425	12/14	As shown
Pt5	Alnus glutinosa	SStd	300/350	10/12	As shown
Pt6	Prunus avium 'Plena'	SStd	300/350	10/12	As shown
Pt7	Quercus robur	SStd	300/350	10/12	As shown
Pt8	Sorbus aucuparia	SStd	300/350	10/12	As shown

All trees to be planted in accordance with the implementation and maintenance guidelines. The tree planting schedule and landscape proposals must be referred to by the Structural Engineer during foundation design. No tree species, size or location should be altered without prior approval from the Landscape Architect.

NATIVE MIX/INFILL HEDGEROW

ABBR	SPECIES	MIX(%)	SUPPLY	SIZE(cm)	CTRS(m)
CORAV	Corylus avellana	12.5	T 1+1	60/80	0.30
CRAMON	Crataegus monogyna	80	T 1+1	60/80	0.30
ROSCA	Rosa canina	7.5	T 1+1	60/80	0.30

Hedgerow shrubs to be supplied as bareroot stock unless stated and to be planted in accordance with the implementation and maintenance guidelines. The Landscape proposals must be referred to by the Structural Engineer during foundation design. No hedgerow shrub species, size or location should be altered without prior approval from the Landscape Architect. Hedgerow shrubs to be planted on at 300mm centres on a double staggered row, 250mm apart with no less than 6 per linear metre in accordance with implementation and maintenance guidelines.

NATIVE MIX 1

ABBR	SPECIES	MIX(%)	SUPPLY	SIZE(cm)	BREAKS	CTRS(m)
CORSA	Cornus sanginea	25	T 1+1	40/60	3	1.00
EUOEPS	Euonymus europaeus	15	T 1+1	40/60	3	1.00
LIGVU	Ligustrum vulgare	15	2L	40/60	3	1.00
RHACA	Rhamnus cathartica	10	T 1+1	40/60	3	1.00
ROSAR	Rosa arvenis	10	T 1+0 LD	60/80	3	1.00
SAMNI	Sambucus nigra	15	T 1+1	40/60	3	1.00
VIBLA	Viburnum lantana	10	T 1u1	40/60	3	1.00

NATIVE MIX 2

ABBR	SPECIES	MIX(%)	SUPPLY	SIZE(cm)	BREAKS	CTRS(m)
ACECAM	Acer campestre	10	T 1+1	40/60	3	1.00
CORAV	Corylus avellana	15	T 1+1	40/60	3	1.00
CRAMON	Crataegus monogyna	25	T 1+1	40/60	3	1.00
ILEAQ	Ilex aquifolium	10	2L	40/60	3	1.00
MALSY	Malus sylvestris	10	T 1+1	40/60	3	1.00
PRUSP	Prunus spinosa	20	T 1+1	40/60	3	1.00
ROSCA	Rosa canina	5	T 1+1	40/60	3	1.00
SORTO	Sorbus torminalis	5	T 1u1	40/60	3	1.00

All shrubs to be planted in accordance with the implementation and maintenance guidelines. The Landscape proposals must be referred to by the Structural Engineer during foundation design. No shrub species, size or location should be altered without prior approval from the Landscape Architect. Individual species to be planted in groups of 5-9.

GENERAL PURPOSE MEADOW MIXTURE (EM1)

Wild flowers		(%)	Grasses		(%)
Achillea millefolium	Yarrow	0.5	Agrostis capillaris	Common Bent	8
Centaurea nigra	Common Knapweed	2	Cynosurus cristatus	Crested Dogstail	40
Daucus carota	Wild Carrot	1	Festuca rubra ssp. juncea	Slender-creeping Red-fescue	28
Galium verum	Lady's Bedstraw	2			
Leucanthemum vulgare	Oxeye Daisy	2	Phleum bertolonii	Smaller Cat's-tail	4
Plantago media	Hoary Plantain	2			
Prunella vulgaris	Selfheal	2			
Ranunculus acris	Meadow Buttercup	2			
Rumex acetosa	Commom Sorrel	1			
Sanguisorba minor	Salad Burnet	3			
Silene dioica	Red campion	2.5			

Sown at 4g/m2

MEADOW MIXTURE FOR WETLANDS (EM8)

Wild flowers		(%)	Grasses		(%)
Achillea millefolium	Yarrow	0.5	Agrostis capillaris	Common Bent	12
Betonica officinalis	Betony	0.5	Alopecurus pratensis	Meadow Foxtail	4
Centaurea nigra	Common Knapweed	2	Anthoxanthum odoratum	Sweet Vernal-grass	2
Filipendula ulmaria	Meadowsweet	1.5	Cynosurus cristatus	Crested Dogstail	36
Galium verum	Lady's Bedstraw	1	Deschampsia cespitosa	Tufted Hair-grass	1
Leucanthemum vulgare	Oxeye Daisy	1.5	Festuca rubra ssp. juncea	Slender-creeping Red-fescue	25
Lotus pedunculatus	Greater Birdsfoot Trefoil	0.5			
Plantago lanceolata	Ribwort Plantain	1			
Primula veris	Cowslip	1			
Primula vulgaris	Selfheal	2			
Ranunculus acris	Meadow Buttercup	2.5			
Rhinanthus minor	Yellow Rattle	1.3			
Rumex acetosa	Common Sorrel	1			
Sanguisorba officinalis	Great Burnet	0.5			
Silaum silaus	Pepper Saxifrage	1.5			
Silene flos-cuculi	Ragged Robin	0.2			
Succisa pratensis	Devil's-bit Scabious	0.5			
Vicia cracca	Tufted Vetch	1			

Sown at 4g/m2

Grass seed mixtures to be of UK native origin. Ground surface will be cleared of weed growth either removed by hand or through the application of an approved Glyphosate based herbicide (all herbicides should only be handled by certified users and in accordance with the COSHH Regulations 2002). The ground will them be ploughed and raked to produce a medium tilth. Sowing operation will be carried out in Spring or late Autumn at a rate indicated. The grass will be allowed to establish over the first growing season with a single mowing operation in the Autumn to top out any weed growth. On-going mowing operations will be carried out either once annually in the Spring, or twice annually in Spring and Autumn if grass species become dominant. Grass will not be cut during late Spring and Summer months to allow flower and hers species time to germinate.

BULBS

SPECIES	No./m²
Crocus Dutch Collection (50% of area)	
'Queen of the Blues'	10
'Golden Yellow'	10
'Jeanne D' Arc'	10
Dwarf Daffodils (50% of area)	
'February Gold'	10
'Jet Fire'	10
'Canaliculatus'	10

All bulbs to be planted in accordance with the implementation and maintenance guidelines. No bulb species or location should be altered without prior approval from the Landscape Architect. Crocus and Daffodil bulbs to alternate every 2 linear metres.

PLAY AREA PLANTING

ABBR	SPECIES	SUPPLY	SIZE(cm)	HABIT	CTRS(m)
HEBPIS	Hebe pinguifolia 'Sutherlandii'	5L	30/40	Bushy	0.50
BAMJUMA	Fargesia murieliae 'Jumbo'	10L	80/100	Branched	As shown
PHOPLBL	Phormium 'Platts Black'	15L	60/80	Triple Crwn	As shown

All shrubs to be planted in accordance with the implementation and maintenance guidelines. No shrub species, size or location should be altered without prior approval from the Landscape Architect.

LEAP Proposals
Refer to drawing, ref: BIR5078_03 for details.

Existing vegetation to be trimmed back where necessary to facilitate the footpath link.

Ditch/Swale
GL 42.40m
IL 40.70m

Post

Tp

North

F- (05/01/2018 AP) Footpath spec updated.
E- (21/11/2017 AP) Footpath spec updated & sub-station included.
D- (20/03/2017 WM) Updated to latest site layout.
C- (21/11/2016 EW) Updated to latest site layout and council comments.
B- (05/11/2016 EW) Updated to latest site layout.
A- (20/10/2016 EW) Updated to latest site layout and to additional tree and hedgerow locations.
Revisions:
First Issue- 12/11/2015 AP/WM

_02 _03 _01

Sheet Location Plan
NTS

Boulton Moor, Phase 4

Detailed Landscape Proposals (Sheet 2 of 3)
Drawing Ref: **BIR5078_02-F**
Client: **Persimmon Homes North Midlands**
Date : 12/11/2015
Drawn by : AP/WM
1 : 250 @ A0

Pegasus Design

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