

ENVIRONMENTAL PROTECTION

a. pesticide use such as weed-killers, insecticides, slug pellets and fungicides are to be kept to a minimum to prevent any cumulative effects within the animal food chain;

b. implement good horticultural practice within the planting scheme, including: do not use peat or products containing peat, use non-residual pesticides/herbicides only;

c. ensure all scrub vegetation is removed outside of the British bird breeding season. (March to August inclusive)

TREE PROTECTION NOTES

ALL trees including those outside of the developable area, must be appropriately protected from damage during the clearance and construction phase of works to prevent soil structure damage.

The following recommendations must be implemented:

a. Trees to be protected in accordance with BS5837:2012 (Trees in relation to construction – recommendations);

b. Fencing should be implemented to the tree canopies (as a minimum) to protect sufficient roots for survival and preserve their integrity until the completion of construction works (i.e. no vehicular access, storage of materials or potential contaminates within the protective area).

1) Stripping, Storage and Spreading of Topsoil and Subsoil

Topsoils & subsoils on site should be stripped and stored in accordance with BS 3882:2015. Subsoil and topsoil used shall be free from toxic substances and compounds which would inhibit healthy plant life. Soils shall be clean and friable, and to an appropriate grade.

1.1) Topsoil and subsoil stripping: Stripping of topsoil shall be in accordance with BS 3882:2015 Annex A. Strip topsoil from all areas where construction work, vehicle activity, compaction or contamination is likely to occur. Soil stripping shall only be carried out when the soil is in sufficiently dry condition, capable of being handled without significant damage. Topsoil should not be stripped, handled or trafficked:
- in a waterlogged condition;
- when the ground is frozen or covered in snow;
- when there are pools of water on the ground surface

Topsoil and subsoil should be stripped separately and they should be stored separately. Topsoils of different quality should also be kept separate from each other. Carefully strip to remove surface layers without incorporating sub-soil or other deleterious matter.

1.2) Topsoil storage: Linear heaps with a maximum height: 2.00m; maximum width: 10.00m. On no account is the topsoil to be compacted in the heaps.

1.3) Spreading: Subsoil shall be approved prior to its spreading. Imported subsoil shall be in accordance with BS3882 for amenity use and BS8601:2013 specification for subsoil. Sub-soil shall be spread and lightly consolidated in layers not exceeding 200mm finished thickness.

The ground surface shall be left with smoothly flowing contours of true and even grades free from localised depressions, high spots and all abrupt angles at changes of level. A 200mm minimum wide level strip is to be established between any embankment or slope and any road, kerb, paved area, fence line or site boundary. Minor adjustments shall be made as necessary to bring planted areas into running level between paths, kerbs and adjoining paved and grassed areas.

1.4) Settlement: The contour levels shown on the drawings are the finished levels of topsoil and due allowance should be made for settlement. In setting out and construction of the earthworks, the Contractor shall allow for settlement and heave whether caused by consolidation or fill, settlement of foundations, heave in excavation or change in volume of materials for excavation.

Relieving subsoil compaction: Subsoil grading of the site shall leave landscape areas with smooth flowing contours to achieve the specified finished levels when topsoiled. Rip and loosen subsoil formation to a minimum depth of 450mm prior to topsoiling. Imported subsoil shall be in accordance with BS8601:2013 specification for subsoil and requirements for use. 400mm at 1.0m centres in the direction of the contour or to a slight fall to relieve all compaction. Be aware of all existing services prior to any cultivation operations.

1.5) Topsoil quality: Both site-won and imported topsoil to conform to 'Multi Purpose Grade' to BS 3882:2015. It shall be capable of supporting healthy, sustained plant growth. It should represent ideal topsoil, i.e. consist of medium loam, with a pH of 5.5-7.8, with minimal stones, with minimal fines. The pH should be between 4.5-5.5. mulch should be free flowing, pest free, weed free and disease free.

Soil analysis to ensure soil is suitable for plant uptake: provide laboratory analysis and certification confirming soil in accordance with BS 3882 Section 6, plus Soil Guidance Values (SGV) relative to soil contamination trigger values established by DEFRA. A 1m² sample for approval should be set aside on site for comparison during the contract.

1.6) Spreading topsoil: Topsoil shall be spread in layers not exceeding 150mm and firm each layer before spreading the next. At the time of laying, both material and weather should be reasonably dry. Soil levels should finish 25mm above adjacent kerbs / paving to allow for settlement. Allow for 75mm of mulch. Minimum required subsoil/topsoil depths after settlement shall be:
Planting areas: 300mm depth topsoil over 300mm clean subsoil;
Grass: 150mm depth topsoil over 300mm subsoil;
Trees: 600mm topsoil over 600mm subsoil.

1.7) Soil preparation works prior to planting:

a.) Cultivate the soil of all areas prior to seeding and planting. This should include loosening, aerating and breaking up soil into particles 2-8mm to depth of 150mm.
b.) Soil conditioner: Spread 75mm well-rotted manure or PAS100 compost prior to cultivation. Do not use peat or peat products. Cultivate to a depth of 300mm. Remove weeds, roots and undesirable material brought to the surface including stones and clods. Leave surfaces regular and even.
c.) Soil within RPA of existing trees, hedges and shrubs to remain uncultivated.

PLANTING NOTES

2) General Planting Notes: All plants to be healthy, hardened-off and with good fibrous root systems and to comply with the requirements of BS3936 Specification for Nursery Stock. All planting to be undertaken in accordance with BS4428 Code of Practice for General Landscape Operations. All plants to be protected from wind exposure at all times. All plants to be soaked in water for several hours prior to planting and to be well watered in.

No planting to be carried out during poor weather conditions, i.e. when ground is frozen, waterlogged, or during droughts, hot sunshine or persistent dry, cold winds. All plants to be well watered to full rooting depth immediately after planting.

3) Plant material: to be supplied in accordance with HTA National Plant Specification. All planting in the habitat creation area to be of regional provenance, from a local supplier (within 50 mile radius of site) if possible, and UK grown. All plants to be treated with mycorrhizal fungi inoculant 'Rootgrow Professional' or similar, applied according to manufacturers instructions.

4) Times of Year for Planting/Turfing:
Deciduous trees and shrubs: Late October to late March. The contractor is to be familiar with the projected handover date and should allow for pot grown plants if necessary.
Container grown stock - any time of year as providing adequately watered, autumn planting desirable.
Deciduous trees and shrubs: Late October to late March.
Conifers and evergreens: September/October to April/May.
Dried bulbs, corms and tubers: September/October.
Turfing: All year round providing adequately watered, avoid hot sunny conditions.
Seeding: Autumn or Spring, following suppliers instructions.

5) Chemical Use: The use of herbicides, pesticides, fungicides or other hazardous chemicals is generally to be avoided. Hand weeding, mulching and biological controls such as nematodes should be used to control pests in the first instance.

6) TREE PLANTING - to BS 8545:2014; sections 10 & 11; Annexes F & G.2
All - bases of pits to be broken up to a depth of at least 250mm.
- Backfill: Tree pits to be backfilled with 85% approved imported topsoil, 15% tree planting compost e.g. Melcourt 'Topgrow Tree & Shrub Planting Compost' and 100g Sierrablen Flora 8-9 Months (11-21-9+6mgo) fertiliser.
- Irrigation: All trees to have dish profile to soil surface. Extra heavy standard trees and above to have irrigation pipe installed in tree pit at planting.
- Guying/Staking: All trees to be securely staked with short double staking, cross piece and biodegradable hessian ties.
- Tree pits to be kept clear of planting to a min dia 1m.

7) Scrub Mixed Species Planting:
Planting to be into existing soil, re-graded to levels and seeded with Naturescape 'NVG Value Grasses Mixture'. All planting to have protective fencing - 0.9m high post and rail fencing.
Whip planting to be at 1.5m centres (0.56/m²) min, in groups of up to 5 nr of the same species. Shrub whips to be distributed evenly through the designated planting area.
Bare root trees are to be planted into a notch or hole cut into the centre of a previously dug pit of sufficient size for the roots of the plants to fully spread out.
Feathered, maiden or light standard trees to be planted into excavated pits 700 x 700 x 600mm with base of the pit broken up to 200mm depth.
Standard size trees will be planted into excavated pits 1 x 1m x 600mm deep with base of the pit broken up to 200mm.
Backfilling shall finish to existing contours and allow for settlement. Backfill shall be 80% clean topsoil mixed with 20% tree planting compost e.g. Melcourt 'Topgrow Tree & Shrub Planting Compost' and 100g Sierrablen Flora 8-9 Months (11-21-9+6mgo) fertiliser.

Mulching for woodland and shrub mix planting : Material as clause below. Coverage: 100 litres per plant position, 75 mm thick, min 800mm dia.

Staking:

Short single staking: feathered, maiden & light standard trees.

Short double staking: selected standard trees.

Long single staking: standard trees.

Long double staking: Heavy standard trees & larger.

Stakes: Softwood, peeled chestnut, larch or oak, straight, free from projections and large or edge knots and with pointed lower end. Preservative treatment: Not required. Nails: To BS 1202-1, galvanized, minimum 25 mm long and with 10 mm diameter heads. Minimum stake sizes: 65 mm diameter.

Method: Drive stakes vertically at least 300 mm into bottom of pit before planting. Consolidate material around stake during backfilling. Height of stakes: Cut off just below lowest branch of tree. Tying: 1 x butyl strap nailed to post and looped around stem.

All plants to have shelters/rabbit guards. Whip, transplant and shrubs to be protected by shelters 0.75m high supported by a stake and adjustable tie. All shelters are to be suitable for the plant stock e.g. evergreen species to be protected with a plastic mesh guard such as Tubex 'Treeguard Mesh for Shrubs' 150-180mm dia supported by a timber stake.

Irrigation: Standards trees shall have a 60, 75 or 80mm dia perforated flexible irrigation pipe inserted closely around the rootball to ensure water is evenly distributed to the roots, to be installed during backfilling according to manufacturers recommendations.

8) Mulch: All planting areas and tree pits, to receive 75mm mulch: British conifer bark mulch with an even particle size distribution of 10-40mm and less than 5% wood content, with minimal fines. The pH should be between 4.5-5.5. mulch should be free flowing, pest free, weed free and disease free.

9) Preparation for Grass Turfing

Soil preparation works prior to seeding and turfing:

- Remove all deleterious material (rubble/concrete, etc), stones and earth clods more than 50mm in any dimension on general areas, and 25mm on lawn areas.

- Clean soil bed with suitable herbicide to perennial weeds.

- When topsoil is dry and workable grade to smooth flowing contours. Areas to be well-graded: Reduce top 100mm soil to a fine tilth. Rake over to a true even surface, lightly firmed but not over compacted. Final cultivation: reduce to fine firm tilth with good crumb structure.

- Pre-turf/seed fertiliser: apply superphosphate with a minimum of 18% water soluble phosphoric acid, and sulphate of ammonia with a minimum of 20% nitrogen each at 70g/m sq, spread evenly. Apply before final cultivation and 3-5 days before turfing

10) Turfing operations

- TURF: to TGA quality standards and supplied by a TGA member. Turf to be dense, of uniform colour, free from broadleaved weeds and not effected by pest or disease.
- TURF OPERATIONS: Spring or autumn, 24hours of delivery. Turfing to conform to BS 3969, installed in suitable weather conditions. Around newly planted trees: neatly cut away to a diameter of 1m around individual trees. Leave soil exposed (to be mulched to 75mm).

11) Grass seed operations

- Modified Grassland: Naturescape 'N14 Flowering Lawn Mixture', applied according to manufacturers instructions.
- Other Neutral Grassland: Naturescape N1 'General Purpose Meadow Mixture', applied according to manufacturers instructions.

12) MAINTENANCE:

- Communal areas to be maintained by the contractor will be for 12 months following Practical Completion to ensure good primary establishment of planting and grass. In-curtilage areas to be maintained until occupation of the properties.

- Works to include operations as required to ensure successful establishment of planting, including but not limited to:

- fertiliser,
- weeding - keep planting beds free of weeds;
- top up bark mulch to 75mm deep at the end of maintenance period,
- pruning, re-firming.

- Maintenance of Meadow seeded areas in Public Open Spaces to include the following: mow once per year at the end of the summer. Allow cuttings to lie for 2 days, then collect and remove.

- Planted areas: Fork over beds as necessary to keep soil loose, with gentle cambers and no hollows. Take care not to reduce depth or effect of mulch.

- Any plant defects at during the maintenance period to be replaced by the contractor at the contractor's expense, within the next suitable planting season.

- Watering: All plant material to receive enough water to ensure healthy establishment. Watering to be undertaken as necessary to ensure that trees, shrubs hedges and grass remain healthy and growing. During the first year of establishment, grass, trees and shrubs should be watered twice per week during the first growing season (April-September) unless rainfall has exceeded 25mm in the last seven days. Trees: Spray crown when in leaf during warm weather. Carry out in the evening.
- Cleanliness: keep the works in a clean and tidy condition after any maintenance operations. Remove soil and arisings from hard surfaces and grass.

13) MAINTENANCE OF WILDFLOWER AREAS / OTHER NEUTRAL GRASSLAND to include the following: In the first year,

after seeding, cut to 5cm every 6-8 weeks and every 2 months through the summer. After establishment, mow twice per year in spring at the end of the summer to a height of 50-75mm. Allow cuttings to lie for 2 days, then collect and remove. Stagger mowing of different sections to encourage maximum diversity - at least 20% is less than 70mm, and at least 20% is more than 70mm at any one time. Protect from physical damage, littering, etc. Ensure bare ground is no more than 5% of the total area. Re-seed areas of bare ground using seed mix as specified for the area. At least 9 species per square metre are present and wildflowers cover at least 20% of the habitat area. Do not use fertiliser. Remove any scrub, bracken and non-native invasive plant species.

14) MAINTENANCE OF SCRUB MIXED SPECIES PLANTING:

- Objective: to create dense, healthy semi-natural vegetation;

- Inspection: March to September, annually;

- Removal/adjustment of stakes and ties: as necessary following inspection;

- Removal of debris, branches, litter, etc. as necessary;
- Maintain a weed-free surface 500mm radius below each plant using glyphosate (ie Round-up): April to August during windless weather, three times per annum until canopies close;

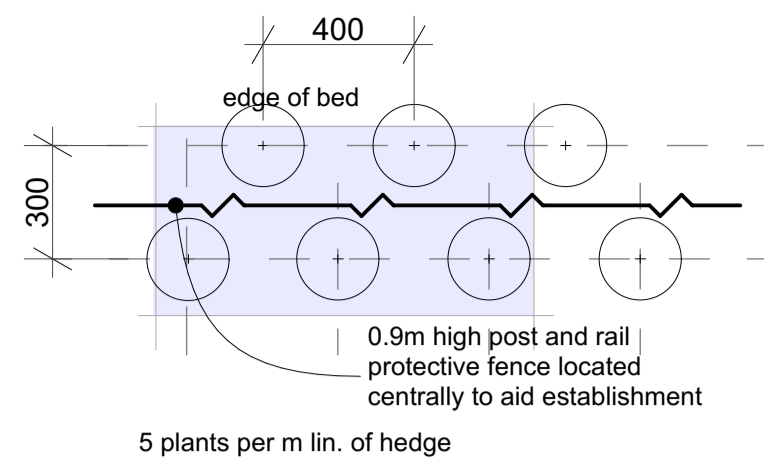
- Bark mulch shall be maintained at 75mm depth

- Strip off weed growth and remove arisings three times per annum. Avoid damage to tree and shrub stems from rotary trimmer.

Staking: Check condition of stakes, ties, guys and guards. Replace broken or missing items.

- Adjust if necessary to allow for growth and prevent rubbing of bark. Cut back any damaged bark. Tie loose climbers back to support.

- At year 5 or when no longer required, remove spiral guards and ties.



Hedge planting - plant in double staggered row 1:20

HEDGEHOGS, LOG PILES AND BIRD/BAT BOXES

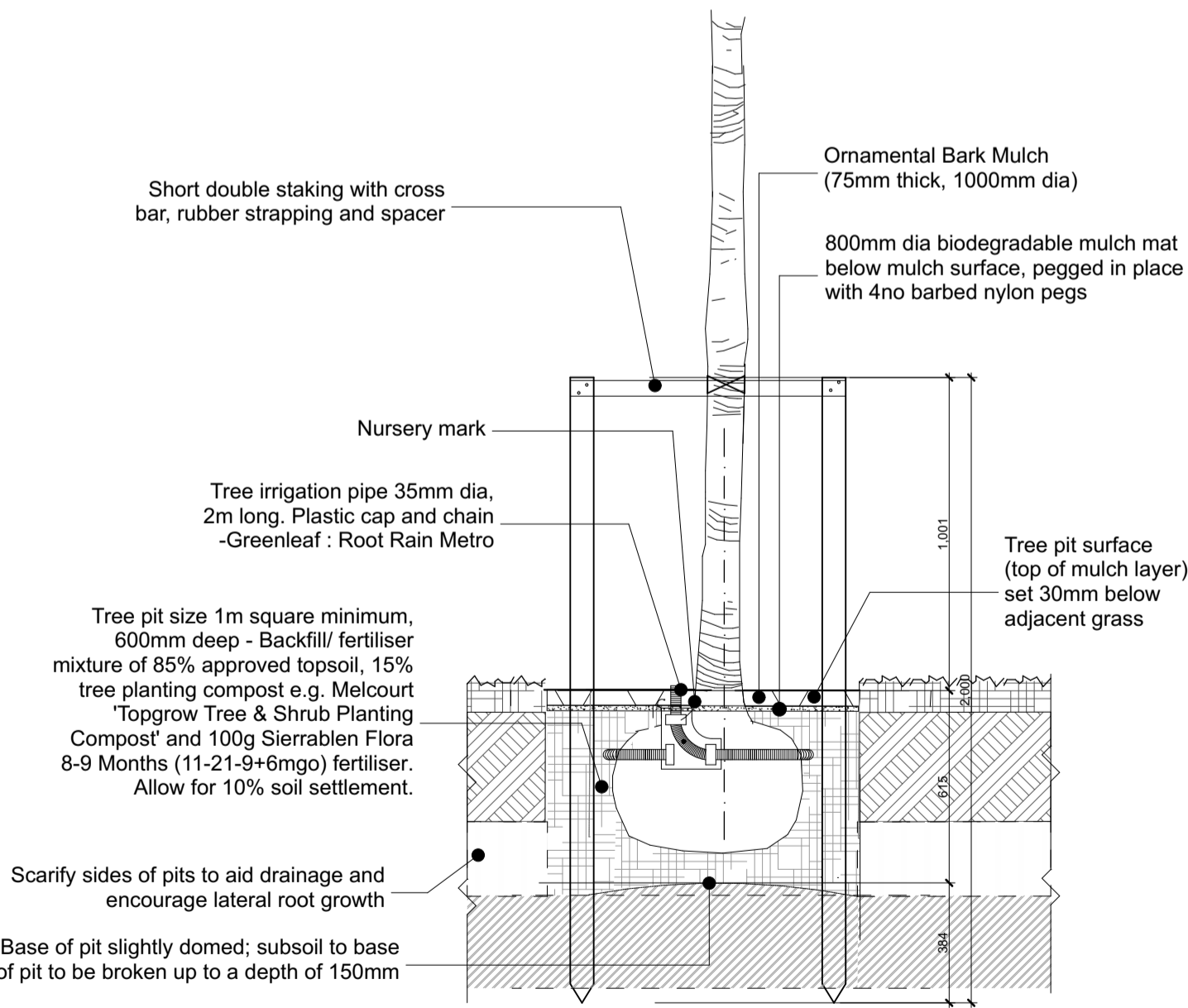
a) Purpose made or adapted gravel boards with 13cm/5inch square holes in fences at ground level for hedgehog movement. Minimum 1 per boundary. Attach weatherproof labelling fixed with weatherproof screws to advise the reason for the holes.

b) Log piles for wildlife habitat: retain sufficient felled branches and scrub from site clearance to form 2 log piles positioned in discreet locations in the scrub.

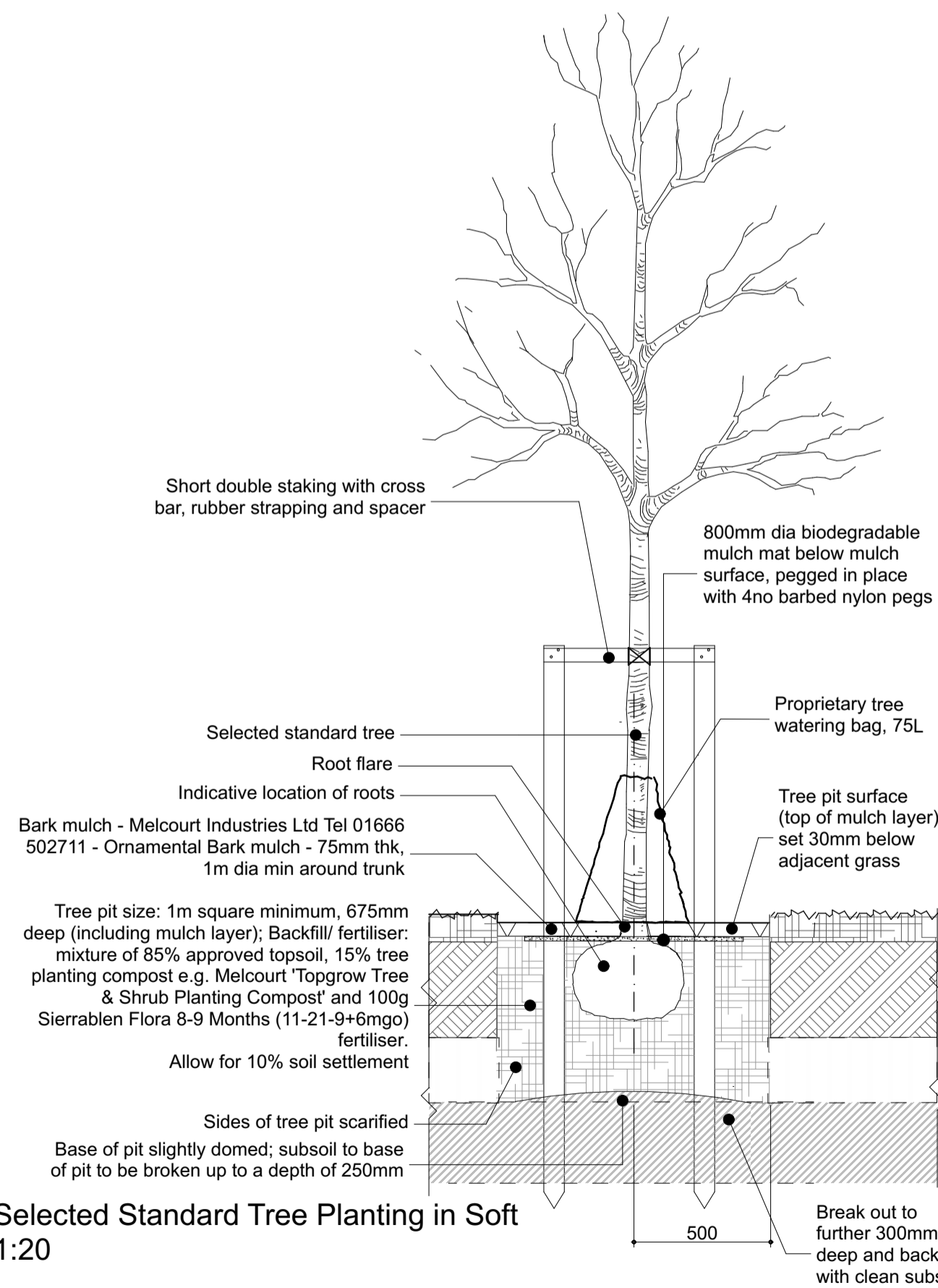
c) Bird and bat boxes: 100% of units to have integral bat roosting and bird nesting features:
Specification: Bird and bat boxes to be built within the walls of new buildings away from windows, doors and high footfall areas.

i. Bird boxes: Swift bricks in locations sheltered from prevailing wind, rain and strong sunlight, preferably between the orientation of north/east/south-east. Ensure uncluttered adjacent airspace to allow clear flight path: Schwegler Double Chamber Louvre box 1MF
dims: 460 x 430 x 225mm (h x w x d);
Positioned 5m min above ground level within gable end.

ii. Bat boxes: Integrated bat boxes: Habitat 001 Bat Box - Standard Smooth Red
Colour: Red Brick
Dimensions: 215 mm wide x 440 mm high x 102 mm deep
Material: Concrete plus brick facing
Position: East or South facing side of house with at least 6-8 hours of direct sunlight.



Heavy/Extra Heavy standard tree planting in soft Typical Tree Pit Details 1:20 BS 8545:2014 sections 10 & 11, annex F & G.2



Selected Standard Tree Planting in Soft 1:20

Scale

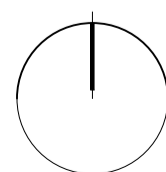
Note :

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