



Landscape  
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& Tree Works



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& Habitat Management



Land Adoption  
& Weed Eradication

James Blake Associates Ltd

# GENERAL LANDSCAPE SPECIFICATION FOR POS

## Area 1 - Land at North-West Haverhill Phase 2 - 6

FOR

**Persimmon Homes Suffolk**

**Dated 11.01.19**

Over 30 Years of Service, Value and Innovation

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Registration no. 08169866 VAT no. 512 4127 91

# GENERAL LANDSCAPE SPECIFICATION

## 1.0 PROJECT PARTICULARS

### 1.1 NAME, NATURE AND LOCATION OF PROJECT.

The proposed project is for hard and soft landscape works for the public open spaces including sports pitches at the development site for Area 1 - Land at North-West Haverhill, Phase 2 – 6, Suffolk.

### 1.2 CONTRACT DOCUMENTS AND DRAWINGS:

Accompanying this specification, refer to Detailed Hard and Soft Landscape Proposals for POS Areas: Drawing No. JBA 18/351-01 & Detailed Hard and Soft Landscape Proposals for Infrastructure Areas: Drawing No. JBA 17/364-03.

### 1.3 GENERAL INTRODUCTION

1.3.1 This specification document sets out the standards and quality of workmanship and materials required for the soft landscape provision for all external areas, excluding long term maintenance and management works, which are covered separately by the Management Plan. Short term management operations to keep completed works in good order prior to handover is covered. **N.B This specification takes precedent over the drawings: there are items specified in this document not shown on the drawings, including safety matters such as tactile paving and points of detail and construction assembly. The drawings are for general arrangement and layout purposes only.**

1.3.1 This specification should be referred to before pricing the works. Any matters that are unclear or require further definition or explanation shall be referred directly to Persimmon Homes Suffolk, whom shall be given reasonable notice of the information required (minimum of 5 working days). The tendering Landscape Subcontractor is deemed to have made all necessary enquiries before submitting his tender and no claims will be entertained from any Landscape Subcontractor for failure to acquaint himself with the standards of workmanship and materials required once the tender has been submitted.

1.3.2 No variation whatsoever shall be allowed from the specification without prior agreement in writing before the return date for the submission of tenders. Variations shall be agreed entirely at Persimmon Homes Suffolk's discretion and no claims will be entertained for variations made without agreement, and then are subsequently rejected and require removal and rectification by the Landscape Subcontractor, entirely at his own expense.

### 1.4 THE PARTIES

1.4.1 Employer: - Persimmon Homes Suffolk

1.4.2 The Landscape Architect: James Blake Associates Ltd

1.4.3 The Consultant Arboriculturist: James Blake Associates Ltd

1.4.4 The CDM Coordinator is to be a representative of Persimmon Homes Suffolk.

1.4.5 The Ecology Consultant: James Blake Associates Ltd

**PROJECT PARTICULARS Continued:-****1.5 Payments**

Payments will be made following verification that the invoiced works are complete and have met the required standards of workmanship and materials. Verification may be confirmed or withheld by Persimmon Homes Suffolk's Landscape Architect, following inspections, which will be carried out within 10 working days of notification to inspect by Persimmon Homes Suffolk. The Employer shall not be obliged to make payment in respect of any tax invoice where the work is not so verified by Persimmon Homes Suffolk's Landscape Architect.

**1.6 Defects Liability Period.**

The Landscape Subcontractor shall be liable for defective work for a period of 12 months. The opinion of Persimmon Homes Suffolk's Landscape Architect shall be final in determining which work is considered defective and which is not. Defective work shall be replaced within 14 days of receipt of written notification (unless seasonal issues prevent it – whereupon such works shall be carried out at the earliest possible juncture), and the landscape subcontractor shall ensure that the replacement work is to the standard required by this specification.

**1.7 Malicious damage or theft**

The Landscape Subcontractor shall record all loss or damage arising from any theft or malicious damage prior to inspections and furnish the Site Manager and the consultant Landscape Architect with this information at the same time as submitting his quotation/proforma invoice for verification. Failure to make proper records of damaged or stolen materials and works (through no fault of the Landscape Subcontractor) may result in such work being considered as defective, for the purposes of verification, and required to be made good at the landscape Subcontractor's own expense.

**1.8 GENERAL CONDITIONS**

1.8.1 The subcontractor shall carry out the works to the standard specified but in any case to a standard not less than that of the standard appropriate to the works, or any part thereof, laid down in the current requirements of the NHBC Standards, Building Regulations and relevant British Standards and Codes of Practice.

1.8.2 The subcontractor is to comply with Persimmon Homes Suffolk's Health and Safety Policy, HSE Rules booklet and all current Health and Safety legislation at all times.

1.8.3 All subcontractors and their employees are to be CSCS certified.

1.8.4 All plant operators are to be CPCS certified (or certified under an equal and approved scheme). The subcontractor is to provide COSHH assessments to the Site Manager for all substances used during the undertaking of the sub-contract.

1.8.5 Persimmon Homes Suffolk operate a strict Customer Care Policy; all subcontractors and their operatives must comply with this policy.

**PROJECT PARTICULARS Continued:-**

**Safety Lines**

In particular, we draw your attention to the need to prevent:

- Personal injury by ensuring all operatives wear safety helmets, safety footwear and high visibility clothing at all times
- Striking underground services by checking plans, the use of cable avoidance tools, safe digging practices, permits to dig etc.
- Health risks by providing COSHH assessments to all operatives particularly for any pesticides, herbicides etc.
- Hand injuries by providing suitable gloves to all operatives.
- Slips and trips by keeping the workplace clean and tidy.
- Back injury by avoiding unnecessary handling, - use of mechanical aids eg fork lift trucks, vacuum lifters, training operatives in safe lifting techniques etc.
- The inhalation of any fumes, vapours etc by providing suitable respiratory protection. Face fit testing will be required.
- Dermatitis or other skin conditions by providing suitable protective clothing.
- Hand arm vibration by changing the work method, checking manufactures information, the use of low vibration tools, carry out routine maintenance, reduce time exposure, monitor exposure, operatives to wear warm gloves even in summer, carry out health surveillance etc.
- Noise induced hearing loss by changing the work method, use of quieter equipment, quieten the noise at source e.g. fit mufflers on breakers, set up exclusion zones, PPE etc.

Please note that the above list is not exhaustive.

1.8.6 The subcontractor is responsible for rubbish removal and cleanliness during and on completion of their sub-contract. All rubbish should be taken to an appropriate skip. The subcontractor should at all times adhere to Persimmon Homes Suffolk's waste management policy and must allow for segregating his waste on site as so directed. The burning of waste material will not be allowed on site.

1.8.7 On each site where the work is in progress the subcontractor must maintain a competent foreman or chargehand who has complete control of all labour engaged on the work. Any instruction given to such foreman or chargehand shall be deemed to have been given to the subcontractor.

1.8.9 Where the subcontractor is to supply materials he is to ensure that the materials used conform the Local Authority's requirements.

1.8.10 The subcontractor is to supply all necessary labour, materials and plant to complete the landscaping works as detailed on, and in accordance with, the landscaping layout and specification.

1.8.11 The whole of the work is to be carried out by experienced landscapers in accordance with best horticultural practices, the Control of Pesticides Regulations and to the satisfaction of Persimmon Homes Suffolk's Site Manager.

1.8.12 Before work starts the subcontractor is to:

- Check the statutory service plans
- Carry out a cable/ pipe/ duct avoidance survey where work is within an area Persimmon Homes Suffolk have not been in control of
- Obtain a permit to dig from our Site Manager

**PROJECT PARTICULARS Continued:-**

1.8.13. The subcontractor is to liaise with the Site Manager, on a weekly basis, or as otherwise agreed by him, to agree the programme of works. If the desired programme cannot be achieved (e.g. if the weather conditions will cause soil compaction) – such remedial works as can be carried out to make the site tidy shall be agreed and carried out, until conditions improve.

1.8.14 Persimmon Homes Suffolk's Site Manager will undertake periodic checks on progress and workmanship with possible additional inspection by the landscape architect to ensure all planting has been carried out in accordance with the layout and specification. Any variance to the layout / specification highlighted by the site manager or Landscape Architect (or if any disagreement arises, then the sole opinion of Persimmon Homes Suffolk's consultant Landscape Architect will be binding), and any defective works will be put right at the subcontractor's expense, unless it can be demonstrated that the defect has been caused by others (other site personnel or by residents). Defective work shall be made good at the Landscape Subcontractor's own expense within 21 days of being identified (or other shorter time frame as agreed), or a suitable sum will be deducted from any sums owing. No additional works shall be verified for payment unless the Landscape Subcontractor has received a written instruction to proceed with such works, having first agreed a fee.

1.8.15 Allowance should be made to provide container grown trees/plants when planting out of season.

**1.9 MATERIALS**

1.9.1 Persimmon Homes Suffolk is committed to the responsible purchasing of forest product. The long-term intention is to ensure that all forest products specified, or purchased, by Persimmon Homes Suffolk are sourced from well-managed forests that have been certified to credible certification standards (FSC) and have **full** Chain of Custody certification. Certified (FSC) timber is required to be supplied and incorporated in all Persimmon Homes Suffolk properties, and is a condition of all sub-contract orders.

1.9.2 The subcontractor is to have a viable environmental policy in place to ensure that, wherever possible, sustainable and certified materials are purchased and incorporated into the sub-contract works. The subcontractor will continually assess the environmental effects of his materials, products, policies and operations with a view to reduce and control environmental impact.

## 2.0 SPECIFICATION FOR LANDSCAPE WORKS.

### 2. 1 GENERAL REQUIREMENTS AND STANDARDS

#### 2.1.1 QUANTITIES:

The quantities given are approximate, requiring tenderers to give fixed rates regardless of possible variations required on site. Tenderers shall not vary quantities specified without written letter of instruction, or other form of variation order from the Employer, or their agents (most notably Persimmon Homes Suffolk's consultant Landscape Architect), irrespective of verbal comments received from any party. The Employer will not be liable for the cost of any additional works carried out without a written instruction being issued.

#### 2.1.2 BRAND NAMES:

References to brand names shall mean any similar product that is suitable, equal and approved by the Employer, or their agents, prior to submission of this priced tender document. Viable alternatives shall be approved by Persimmon Homes Suffolk's Landscape Architect following representative samples being submitted, before pricing, ordering or taking delivery..

#### 2.1.3 PESTICIDES AND HERBICIDES:

Generally, pesticides shall not be used on this site in case of ecologically sensitive areas, unless and where agreed in writing by Persimmon Homes Suffolk's consultant Ecologist or Landscape Architect. Where reference to the use of pesticides is made in this document, the following procedures shall be followed and regulations complied with. The use of all pesticides should only be made following a risk assessment to consider potential effects on the environment and on human health. The purchase, transport and storage of herbicides are regulated by Part III of the Food and Environment Protection Act 1985, Control of Pesticides (Amendment) Regulations 1997; the Health and Safety at Work Act 1974; the latest COSHH Regulations (2008), the product COSHH sheet and EC Directive 91/414/EEC (the "Authorization Directive") and the Plant Protection Products Regulations 1995 as amended by the Plant Protection Products (Basic Conditions) Regulations 1997. All herbicides must have an appropriate full or "off-label" approval for use in a relevant situation. Refer to the Pesticide Safety Directive, for which the website is given here for your assistance: - [www.pesticides.gov.uk](http://www.pesticides.gov.uk). All pesticides shall be applied in suitable calm weather conditions, and allow for repeat spraying as required to achieve a complete kill. Herbicides and other pesticides shall be applied by skilled and qualified operatives with all required and current licences and certificates. All work involving chemicals including supply, transport, storage, handling, equipment application, cleaning of equipment and disposal of waste chemicals and containers, shall comply with current legislation and HSE recommendations. Chemical herbicides or pesticides used for any purpose within this contract shall on be supplied or handled by personnel holding an appropriate National Proficiency Tests Council certificate of competence for pesticide application. Records must be kept of all operations involving the application of herbicides and or pesticides. Full copies of these records must be sent to the Contract Administrator upon completion of each application. Chemicals supplied must be in accordance with the current BAA approved list, appropriate for the job in hand, and must be applied strictly in accordance with the manufacturer's directions, with particular attention to application rates and times of year of application. Waste pesticides or containers shall be disposed of safely off site, including any surplus spray. Where work is near water, drainage ditches or land drains, complies with the Ministry of Agriculture, Fisheries and Food 'Code of Practice for the use of use of herbicides on weeds in watercourses and lakes'.

**SPECIFICATION FOR LANDSCAPE WORKS Continued:-****2.1.4 MAKING GOOD:**

Include for making good any structures and surfaces disturbed for all items. Include for general tidying and for litter and debris clearance at each and every site visit to leave the site always in a tidy condition. All arisings should be removed to an approved and licensed tipping site for disposal, except for those required by Persimmon Homes Suffolk for retention on site. The arisings to be retained on site shall be agreed at the pre-contract meeting.

**2.2 DEMOLITIONS AND PREPARATORY WORK****2.2.1 REMOVAL OF SURPLUS MATERIALS AND DEBRIS**

Include within the rates for all items the removal from site of any surplus materials and debris to suitable store, tip or location agreed with the Employer. Furthermore, include within the rates for all items breaking up, grubbing out, and loading up materials, rubbish, extraneous materials and general debris.

**2.2.2 SAFETY AND AVOIDANCE OF NUISANCE**

Ensure the safety of both the works and members of the public, and further ensure the avoidance of nuisance and inconvenience to members of the public and adjoining owners or residents by suitable practices, methods and programming of works on site. Rates and prices tendered shall have included for all necessary measures to this end.

**2.2.3 LEVELS**

Levels shall be checked on site and shall be agreed with the Employer. Changes to proposed levels shall be discussed with the Employer (or their agents) and agreement shall have been obtained on such levels before any works are carried out. Any works carried out without such agreement and are subsequently rejected by the Employer or their agents shall be rectified by the Landscape Subcontractor at his own expense. No adjustment shall be made in respect of specified soil recesses in respect of the bed edges.

**2.2.4 REMOVAL OF SURPLUS MATERIALS AND DEBRIS**

All items include for the removal from site of all surplus materials and debris. All items include for breaking up, grubbing out, loading up materials, rubbish, extraneous materials, brick, stone, concrete and general debris.

**2.2.5 SAFETY AND AVOIDANCE OF NUISANCE**

All work shall be done in such a manner as to ensure the safety of the works and the public and so as to avoid nuisance and cause as little inconvenience as possible to the public and adjoining owners or tenants. Prices shall include for all necessary precautions to that end.

**2.2.6 PLANT, SHORING ETC.**

Taking out, taking down, cutting openings, etc., shall include for all necessary plant, shoring, temporary supports, scaffolding, etc.

**2.2.7 PAVINGS AND CARRIAGEWAYS**

Where directed, redundant carriageways, footpaths and paved areas of whatever construction, shall be broken out including hard-core, to a minimum depth of 300 mm, to include hand work etc. around all cables, ducts, manholes, stopcocks, underground services, gulleys and gratings etc.

**2.2.8 EXCAVATING AND FILLING**

To be read with Preliminaries/General Conditions

**SPECIFICATION FOR LANDSCAPE WORKS Continued:-****2.2.9 SETTING OUT**

The Subcontractor shall satisfy himself that the existing ground levels as indicated on the Drawings or schedules of cross section levels are correct. The line of levels shall be carefully set out frequently checked and maintained throughout the works. If directed, realignment of setting out to the Contract Administrator's requirements shall be carried out by the Subcontractor and should be allowed for in the rates for construction work, no additional payment will be made. Errors arising from inaccurate setting out shall be made good by the Subcontractor at his own expense.

**2.2.10 COMPACTION OF SOILS/HAUL ROUTES AND WORKING AREA**

Areas drawn as soft landscape (grass, trees, shrubs etc.) must not become compacted by the Subcontractor's operations. The contractor shall plan all haul routes and working areas, avoiding areas of soft landscape wherever possible. Where compaction occurs, the Subcontractor shall alleviate it in areas of soft landscape by machine digging to a depth of 600mm or the full depth of soil where ever is the lesser. Upon completion, it must be possible to insert a soil auger by hand to a depth of 600mm or the full depth into the soil.

**2.2.11 EXISTING SERVICES**

It shall be the responsibility of the Subcontractor to ascertain the location of any live water, gas, electricity or telecom services and to protect these at all times.

**2.2.12 SITE FEATURES**

Before starting work verify with the Contract Administrator, which existing fences, gates, walls, roads, paved areas and other site features are to be retained or removed. Any damage to existing structures, vegetation, watercourses or paving by the Subcontractor in the course of, or in consequence of his operations, shall be made good at his own expense. Care shall be taken to prevent any contamination of either topsoil or watercourses by clay, subsoil, fuel oil, chemicals and debris of any kind during the course of the works.

**2.2.13 EXISTING TREES**

**NO TREE OR SHRUB TO BE REMOVED** unless specifically agreed **ON SITE** with the Contract Administrator. All trees and shrubs to be retained shall be protected during the course of works from damage with fencing erection outside the line of branch spread to Q40. No work or trafficking shall take place within 3.0m of the branch spread of existing trees before protective fencing is erected. No materials, fill or topsoil shall be stored under or near to existing trees. The Subcontractor shall be liable for making good, compensation or replacement as appropriate for any damage to existing trees, as directed by the Contract Administrator. Before starting work verify with the Contract Administrator, which trees, shrubs and hedges are to be removed. Cut down, grub up stumps and main roots over 50mm diameter and fill voids with approved material. Dispose of all wood. Do not remove trees, hedges or shrubs to be retained: These may be protected legally.

**2.2.14 DEBRIS CLEARANCE**

Remove the following materials, from the surface or sticking out of the surface, of the site:

- All sheet material
- All pipes, rods, bars and bands
- All timber objects
- All canisters and containers



**SPECIFICATION FOR LANDSCAPE WORKS Continued:-****EXCAVATING****2.2.15 MATERIALS ARISING**

Materials of any kind obtained from the excavation shall remain the property of the property of the employer, such material shall be dealt with as provided in the contract but the Contract Administrator shall have power to direct its use in the works or disposal by other means.

**2.2.16 TOPSOIL**

Before beginning general excavation or filling excavated topsoil from required areas to an average depth of 300mm and keep separate from excavated subsoil. Contractor is required to assess the existing topsoil levels as recorded in the geotechnical report (obtainable from Persimmon Homes) and to import additional excess topsoil from the immediate site left over as surplus as a result of the development construction activities.

**2.2.17 TOPSOIL HANDLING**

Topsoil for re-use shall be handled in a manner consistent with the preservation of a good crumb structure of the soil. Soil being stripped or stacked shall not be handled when wet or during wet conditions, compaction shall be kept to a minimum.

**2.2.18 UNRECORDED FEATURES**

Where old foundations, beds, basements, filling, tanks, service pipes, drains etc. not shown on the drawings are encountered, obtain instructions before proceeding.

**DISPOSAL OF MATERIALS****2.2.19 TOPSOIL**

Stockpile all excavated preserved topsoil in temporary spoil heaps in locations on site as directed by Contract Administrator.

**2.2.20 SUBSOIL**

Stockpile all excavated subsoil required for making up levels in temporary spoil heaps separately from topsoil in locations on site as directed by Contract Administrator.

**2.2.21 SOIL STOCKPILES**

Soils to be stockpiles shall be stored in piles no greater than 1.5m high. No tracked or wheeled machinery shall be allowed on or over the stockpile. The stockpile shall be shaped so as to shed water. Stockpile positions must be agreed with the Contract Administrator and shall not be relocated without authorisation from the Contract Administrator. Stockpiles shall be kept weed free with appropriate herbicide used to D20/422.

**2.2.22 SURPLUS EXCAVATED SOIL**

Spread and level on site as directed by the CA in locations no more than 1000m from site of excavation.

**SPECIFICATION FOR LANDSCAPE WORKS Continued:-****FILLING****2.2.23 LANDSCAPE FILL/ "SOIL" GENERALLY**

Subsoil only may be used - to specification. Fill/soil shall be capable of sustaining good plant growth and be free draining. It shall exclude the following: Any potentially leachiate or landfill gas generating material such as: material from marshes or bogs, peat, timber, logs, stumps, plant waste, slurry, plaster, felt or other perishable or toxic materials. Material susceptible to spontaneous combustion. Materials with excessive moisture content. Material contaminated with oil, diesel, petrol or any other substance toxic to plant growth, animals or humans. Wire or steel reinforcement, brick, scalplings, tarmac, or other demolition waste. Sheet material. Asbestos or contaminated waste.

**2.2.24 SHALLOW FILL/SOIL**

Depth: 200mm-500mm below final levels. pH: 5.5-7.5. Maximum size of 'stone' in any direction: 100mm (e.g. half bricks). Maximum % of stones in 100-500mm range: 25%. Electrical conductivity: below 1500 micomhos per cm in 1:2.5 soil: water extract. Available Phosphorus (P): not less than 70ppm when extracted with 4.2% NaHCO<sub>3</sub> at pH 8.5. Available Potassium (K): not less than 300ppm when extracted with 8% ammonium nitrate. Free of weed seeds, roots of perennial weeds, sticks, wire, steel reinforcement, plastic, paper. Obtain approval from the Contract Administrator prior to use.

**2.2.25 MEDIUM DEPTH FILL/SOIL**

Depth: 500mm – 1.0m below final levels. PH: 5.5-7.5. Maximum size of 'stone' in any direction: 50mm (e.g. smaller than half bricks). Maximum % of stones in 250-300mm range: 25%. Free of roots of perennial weeds, sticks, wire, steel reinforcement, plastic, paper. Obtain approval from the Contract Administrator of a sample of material prior to use.

**2.2.26 DEEP FILL/SUBSOIL**

Depth: Deeper than 1.0m. PH: 5.0-7.5. Obtain approval from the Contract Administrator of a sample of material prior to use.

**2.3 EXCAVATION AND EARTHWORKS TO THE PITCH AND OUTFIELD****2.3.1 EXCAVATION GENERALLY**

Excavate pits and trenches to depths required or ground re-levelling to remove localised hollows and bumps and as shown on drawings and as described further in this document. Materials arising shall be re-used and any surplus should be removed from site to suitable and approved tip. Most of the excavated material is likely to be heavy clay and shall be used for the construction of the base table of the football pitch and earth bunds and not mixed into any rootzone material. The rates in this Schedule include for excavating and grading in any type of ground including clay, loose and compacted hard core, rubble debris and the like. The Contractor is prohibited from making excavations and cut and fill operations other than those approved by the Contract Administrator as necessary for the works. In the event of the Contractor making unauthorised excavations, he will be required to back-fill such excavations with material as directed, at his own expense.

**2.3.2 EXCAVATED MATERIAL USED AS FILLING**

Site-excavated material shall be used for levelling uneven areas. Allow for site-excavated material to be subsequently used for forming the football pitch table and bunds (which will include clay). Include for forming temporary spoil heaps and multiple handling of such material on site. All surplus excavated material is to be removed from site to an approved tip.

**SPECIFICATION FOR LANDSCAPE WORKS Continued:-****2.3.3 CONSOLIDATION OF EXCAVATED LEVELS**

Any material excavated and subsequently used for fill shall be spread as directed in layers in no more than 150mm in depth in trenches and 250mm for open surfaces. After completion of excavations and fillings the whole of the formations for the football pitch shall be locally consolidated to the required level – using a laser level to ensure flatness. Take care to ensure no damage to adjoining works. Make good any structures or surfaces damaged or disturbed to match existing. Ensure inspection and approval of formations before any surfacing materials are laid. The Contract Administrator must approve the formation before any surfacing materials are laid.

**2.3.4 EXCAVATION BELOW REQUIRED LEVELS**

Excavation below stated depths shall be filled with suitable and agreed fill material and suitably consolidated at the Contractors' own expense. Excavation may be required below stated depths as necessary to obtain suitable firm, excavated bottoms. The Contractor shall include within his rates for such additional excavation and fill as required to achieve suitable firm formations.

**2.3.5 DECOMPACTION OF SUBGRADE**

Relieve compacted ground by ripping with a tractor mounted ripper at 500mm centres to a depth of 500mm. Do not rip within 10 metres of existing trees and 3 metres from hedges. For smaller areas where ripping is not possible, rotovate to sufficient depth to ensure there is no compaction but taking great care to avoid any damage to existing tree or hedge roots. Ensure all such operations are carried out in suitable weather conditions – not wet or waterlogged.

**2.3.6 FILLING: TOPSOIL AND ROOT ZONE MATERIALS**

See topsoil in section 2.2.16 and 2.2.17.

**2.3.7 ALL MAKING UP OF LEVELS AND SOIL IMPORTATION GENERALLY**

Allow for initially braking up compacted ground by machine, tractor mounted ripper tool or by hand (according to scale and cause), including hard pans. If there is any doubt about the drainage qualities of the base, refer to the landscape architect and meet to conduct soakage tests and agree measures to improve drainage if required. Any making up levels for areas to be cultivated shall be executed only after ensuring that the imported subsoil is free draining. The opinion of the Contract Administrator shall be final in this respect. Allow for natural settlement to take place. Any settlement below the required levels shall be made up with sandy loam root zone material. Any areas compacted by subsequent traffic shall be loosened. All imported materials shall be spread in layers (of 250mm for subsoil; 150mm for topsoil and 50-100mm for rootzone) and lightly mixed with the 50mm of material below the layer being filled. Each layer shall be completed sufficiently in advance of subsequent treatment to allow for natural settlement to take place. Any settlement below the required levels shall be made up with suitable soil. Any areas over-compacted by subsequent traffic shall be loosened. Any areas surrounding the pitch which become compacted or rutted shall be loosened and filled with suitable soil to match the adjoining surfaces.

**2.3.8 FILLING MATERIAL (OTHER THAN BASE COURSE MATERIALS).**

Filling to make up levels shall be clean, uncontaminated sub-soil, but may contain an admixture of coarse sand, gravel and other small hard materials up to approximately 25% of the total bulk. Sub-soil shall be free from sewage sludge and excessive proportions of lime and lumps of clay, rubbish, ash, clinker, concrete, chemical pollutants, weeds, couch grass and the like.

**SPECIFICATION FOR LANDSCAPE WORKS Continued:-****2.3.9 FILL MATERIAL:**

The contractor shall use the soil, which has been tested by Bailey's of Norfolk Ltd. Tel 01603 754607.

**2.4 LAND DRAINAGE SPORTS PITCHES****2.4.1 FALLS GENERALLY**

All pitches shall be laid to suitable pitch playing direction falls (not less than 1:100) and suitable cross pitch falls (not less than 1:50) to provide suitable and sufficient drainage fall and that falls allow water to run evenly and progressively towards drainage swales and outlet.

**2.4.2 LAND DRAINAGE REQUIREMENT**

The site investigation report (Reference Number: 995,SI/SG,PD/09.12.14/V1) indicates the site soil type in the area is Brown clay with varying amounts of silt, sand and gravel of flint, brick, charcoal, clinker and chalk. Trial Pit soil testing and analysis indicates the nature of the soil for this area is Dark grey brown clay with frequent fine to medium gravel of flint, chalk and occasional coarse gravel of brick fragments, typically the topsoil may be 250-400mm depth with firm to very stiff clay beneath. There are very few pitches where the construction without drainage will provide a sustainable, quality playing surface. The infiltration rate of the underlying soils here was proven to be very poor and therefore an alternative drainage solution should be adopted. In the event of waterlogging problems occurring after initial construction of the 'pitch,' are more permanent than can be resolved through annual normal spiking and sanding, then drainage can and should be retro fitted, (Sport England Type 4 Drainage System), when the soil has firmed to ensure the trenches can be dug cleanly without any caving in of the sides. The assessment as to the need for land drainage shall be after the first season of play, to test the pitches resilience and playability. Once the assessment has been made and verified, the contractor will be asked to return to site and install the drainage scheme as follows, as a separate and provisional contract item.

**2.4.3 LAND DRAINAGE INSTALLATION**

The sequence of works shall be as follows;

- Topsoil excavation
- Sub-soil preparation
- Drainage installation
- Setting out and grading of sub-base
- Rootzone construction
- Final Grading and seeding

Supply and install Sport England Type 4 Drainage System, comprising 110mm diameter perforated pipe catch drain approximately 600mm deep backfilled with 6 - 10mm drainage shingle and blinded with 50mm approved sand to within 150mm of the surface: Laterals at 5m centres 80mm diameter perforated lateral drain approximately 450mm deep backfilled with 6 - 10mm drainage shingle and blinded with 50mm approved sand. Supply and install pre-cast silt traps at lower end of the main carrier drain with a pre-cast rodding eye at the higher end of the main carrier drain. The contractor shall allow for a standard drainage connection or discharge to a convenient approved location of the main carrier drain including managing the application for the 'permission to connect' process. The main carrier drain shall be connected into the nearest surface water drainage or equivalent approved, or into a soakaway constructed adjacent to the pitch, of an approved size (to be included as a Provisional Item if permission to connect is not granted).

**SPECIFICATION FOR LANDSCAPE WORKS Continued:-****2.5 PITCH****2.5.1 SETTING OUT THE PITCH**

Set out pitch one, dimensions L 54m x W 35m and pitch two, dimensions L 45m x W 25m (including 3.0m run off strip to all sides of both pitches). All quantities are provisional and are to be confirmed: Area of pitch one approximately equal to 1125m<sup>2</sup> and pitch two approximately equal to 1890m<sup>2</sup>.

**2.5.2 GRADING OF THE BASE**

Grade the subsoil table base for the pitches and run off strips to ensure it is even and falls longitudinally and laterally do not exceed 1:100, marrying into the existing levels in outfield areas beyond, where no slope should be greater than 1:5, and any pedestrian or vehicular maintenance access routes should not exceed 1:20. All made ground should be ripped to a depth of 600mm, using a tractor mounted ripping blade, to prevent compaction and waterlogging before topsoil fill is applied. Do not rip within 10 metres of existing trees and 3 metres from hedges. Ensure the subsoil base is friable and free from compaction before spreading topsoil. The base should be free draining.

**2.6 HARD LANDSCAPE MATERIALS AND WORKS****2.6.1 GENERALLY**

Clarify with the Employer the requirement to carry out hard landscape works before allowing for the following clauses. In the case of unusual or specialist circumstances, requiring the Landscape Subcontractor to undertake limited hard landscape operations as part of a whole task in hand (such as loose fill gravel infill or an informal gravel area or gravel or bark path across a green space or through a woodland), then take full account of the following clauses under Schedule 3.0 of this document, ensuring allowance is made for the requirements and instructions given.

**2.6.2 SAND FOR MORTAR OR CONCRETE**

Sand for mortar or concrete shall comply with BS 1200. To be clean sharp sand containing not more than 3% by weight passing through a 63-Micron BS Sieve and not more than 10% be weight retained on a 5 mm BS Sieve.

**2.6.3 SAND FOR LAYING**

Sand for laying shall be clean sharp sand containing not more than 3% by weight passing through a 63 micron BS sieve and not more than 10% of weight retained on a 5 mm BS sieve.

**2.6.4 CEMENT**

Cement to be Portland cement to BS 12

**2.4.5 WATER**

Water shall be from the mains and kept free of any impurities.

**2.4.6 STORAGE OF MATERIAL**

A) Cements and limes shall be stored separately, kept dry and used in rotation of deliveries.

B) Sands shall be stored separately according to type, on clean, hard, dry standings and protected from contamination.

**SPECIFICATION FOR LANDSCAPE WORKS Continued:-****2.4.7 BLOCKS**

Concrete Blocks shall conform to BS 6073:

**2.4.8 SAMPLES**

Submit samples of each type of paving unit at random from the initial loads to the Contract Administrator for approval. Ensure that subsequent deliveries match approved samples.

**2.4.9 HANDLING**

Unload and handle paving units with care and reject those soiled, chipped or otherwise damaged. Unload and handle packaged bricks with proper mechanical plant.

**2.4.10 KERBS, EDGINGS AND CHANNELS**

Kerbs, edgings and channels shall be bedded and jointed in cement mortar (1:3) to true lines and levels on a C:20:P mix concrete foundation unless otherwise shown and shall be haunched with similar concrete. The front face of the concrete foundations shall be truly vertical. Lines of kerbs and channels shall have expansion joints at intervals as directed.

**2.4.11 LAYING OF SUB-BASE OR BASE COURSE**

Prior to laying sub-base or base courses the surface shall be treated where directed with approved herbicide applied in accordance with manufacturer's instructions.

**2.4.12 LAYING OF PAVINGS**

All paving shall be laid to levels and falls as directed by the relevant drawings, to ensure even running levels and falls sufficient for drainage of surface water run-off.

**2.4.13 EDGE RESTRAINT**

Lay foundation C:20:P concrete strip foundation (to extend 100mm beyond block unit each side), and to depths shown on drawing (minimum 150mm). Supply and lay Marshall's 900 x 150 x 50mm flat topped edging units, laid in accordance with the manufacturer's instructions over a C:20:P mix concrete bed and haunch both sides, with minimum depth 250mm and minimum width 350mm. Edgings shall be flush with the paving surface and finished soil levels for planted areas shall be finished 65mm below edgings, but flush in the case of grass areas adjacent to these edgings.

**2.4.14 PROTECTION AGAINST PREMATURE USE**

Do not allow traffic on paving until 4 days after completion.

**2.4.15 TIMBER**

All timber to be sourced from well-managed forests that have been certified to credible certification standards (FSC) and have full Chain of Custody certification. All sawn soft wood timber to be supplied pre-treated and suitable for ground contact applications i.e. kiln dried and pressure treated with Tanalith TE/FGb and Tanalith Creol. All treated softwood timber to be in accordance with BS EN 335:2013, BS EN 599-1:2009+A1:2013 and BS 8417:2011+A1:2014. Where specified all timber to be further stained on site with 2No. coats of Sadolin Classic Wood Protection, colour 'Jacobean Walnut'.

**SPECIFICATION FOR LANDSCAPE WORKS Continued:-****2.4.16 TIMBER FORMWORK FOR FOOTINGS AND FOUNDATIONS**

Concrete footings and foundations spread into soft areas and close off access to soil for shrubs and trees specified for narrow beds in paved areas: To prevent concrete spread, foundations shall be controlled using timber formwork, where they are adjacent to a soft landscaped area. Timber for formwork shall be of properly cleated softwood, wrought where required to be in contact with all faces of concrete which are to be exposed or of approved metal forms or hardwood, so as to give a smooth finished appearance to the concrete.

**2.4.17 HARDCORE, CRUSHED STONE BASE COURSES****A) LAYING AND COMPACTING**

Spread hard-core, crushed stone or other suitable and approved granular fill evenly over existing compacted sub-base avoiding damage thereto, and thoroughly blind top surface with sharp sand. Compact in 150mm maximum layers to specified thickness using a 105 kg vibrating roller with a minimum number of 6 passes and until movement under roller ceases.

**B) FITTINGS AND COVERS**

Ensure proper compaction around drains, edge restraints, manholes and service covers.

**C) PERMISSIBLE DEVIATIONS**

From required levels to be: -

- i) For footpath base + 10 mm to - 15 mm
- ii) Any point under a 3000mm straight edge not to exceed 15 mm.

**D) LAY TO FALLS**

As indicated for finished surface falls to levels and drainage points or lines.

**2.4.18 BITUMEN MACADAM FOOTPATHS:**

Excavate and cart away area required for areas of unit paving, all to a depth of approximately 230mm – exact depth to be determined by the Contract Administrator or Engineer according to CBR values. Allow for any additional excavation and carting away of spoil to achieve finished levels. All footpaths shall comprise well prepared subgrade to falls of 1:200 and cross-falls of 1:50 with a layer of ICI “Terram” 1000 geotextile membrane over and 150mm (according to CBR values) of consolidated thickness of DTp type 1 granular fill sub base– or other suitable granular fill, all to specification for highways works clause 803 (Exact thickness dependent upon CBR values); with each layer (max 150mm) rolled with a minimum 1.3 ton roller. Include for making good structures and surfaces disturbed to match. The surface of the driveway will comprise dense bitumen macadam road base 100mm thick of 40mm gauge aggregate with base course bitmac of 75mm depth (20mm agg). and wearing course of 30mm depth (10mm agg.). Roll each layer with a 10000kg roller, and to falls of 1:200 and cross-falls of 1:50. Include for making good structures and surfaces disturbed to match. All to BS EN 594987:2007 and BS EN 13108-1:2006.

**2.4.19 UPSTAND KERB TO PARKING BAYS**

Excavate and cart away trench for kerbs to a depth of approximately. Level, grade and consolidate the existing sub grade to proposed profile and to falls of 1:100. Supply and lay standard kerb, to engineers specification, with average upstand of 125mm, using 125 x 255 x 914mm, available from Marshalls Tel: 03339207950, set upright or other similar and approved, colour “Grey.” Lay kerb units into prepared 450 x 250mm C:20:P mix insitu concrete strip foundations in accordance with manufacturers recommendations, over well prepared sub grade – as specified above. Kerbs to be laid 125mm proud of surfacing (max tolerance +-25mm). Include for making good structures and surfaces disturbed. Upstanding kerbs shall be used for all other areas of the car parks, heights above car park surface to vary according to drainage falls of paving, but to average 125mm.

**SPECIFICATION FOR LANDSCAPE WORKS Continued:-****2.4.20 DROPPER AND DROPPED KERB TO PARKING BAYS**

Excavate and cart away existing soil to form trench for insitu C:20:P concrete strip foundation, excavating pits of 450 x 250mm. Standard concrete kerb using: 125 x 914 x 255/150mm(high), colour "Grey." (left handed and right handed). Lay kerb units into prepared 450 x 250mm C:20:P mix insitu concrete strip foundations in accordance with manufacturers recommendations, with average upstand 125mm all over over firmed subgrade, all to falls and cross falls, minimum 1:60 to engineers specification. Available from Marshalls or similar and approved (Tel: 0370 241 2463). Kerbs to be laid 125mm proud of surfacing (max tolerance +-25mm). Include for laying dropped kerbs using 125 x 255 x 914mm, available from Marshalls Tel: 03339207950, colour "Grey." where shown, ensuring a 15mm bull-nosed up-stand. Include for making good structures and surfaces disturbed. Upstanding kerbs shall be used for all other areas of the car parks, heights above car park surface to vary according to drainage falls of paving, but to average 125mm. Include for making good structures and surfaces disturbed.

**2.4.21 DEPARTMENT OF TRANSPORT TYPE 1**

Type1 unbound mixture to Highways Agency 'Specification for highway works', clauses 801 and 803.

**2.4.22 GEOTEXTILE MEMBRANE**

To be installed below sub-bases. To be protected from exposure to light, except during laying (maximum five hours), contaminants, materials listed as potentially deleterious by geotextile manufacturer, damage, until fully covered by fill and wind uplift, by laying not more than 15 m before covering with fill. All humps and sharp projections should be removed and all hollows to be filled before laying.

**2.4.23 TURF REINFORCEMENT MESH FOR MAINTENANCE ACCESS**

Turf reinforcement mesh 'Turfmesh – Turfguard 3', available from Geosynthetics Limited, Tel. 01455 617 139. Mesh to be laid over a level, well-cultivated and firmed seedbed ameliorated with 50mm depth of 80:20 sand:soil mix and pegged with steel u-pins at 1m centres. Brushing the sand:soil mix over the entire area to cover the mesh ribs and fill the apertures. Rolls should be overlapped by 150mm. Allow for making up levels where settlement occurs, finished surface shall be seeded with amenity grass.

**2.4.24 PITCH GOAL POSTS**

Goal posts to be "NEW Samba match goal" 12' x 6', compliant with the British Standards. Suitable for league use, FA recommended Ground anchors, net and net clips as well as PVC Corners complete with proprietary locking system included. Install football goals as per the manufacturer's fitting instructions.

**2.5 ENCLOSING ELEMENTS****2.5.1 KNEE RAIL: TIMBER POSTS AND STEEL TUBULAR RAILS**

A timber post and metal rail kneerail shall be constructed around the public open space as indicated on plan. Hot-dipped galvanised steel tubular rail 50mm in diameter Steel and 2000mm long. Rails to be bent to suit any radii and curves. Sawn softwood timber posts to be 125 x 125 x 1000mm at 1800mm centres. Timber shall be planed finish, pressure treated with Tanalith TE/FGb and stained on site with 2No. coats of Sadolin Classic colour 'Jacobean Walnut' to BS4075.



**SPECIFICATION FOR LANDSCAPE WORKS Continued:-****2.5.1 KNEE RAIL: TIMBER POSTS AND STEEL TUBULAR RAILS Continued:-**

Hole to be drilled through centre of post, 125mm from the top, 50mm diameter to receive tubular rail. Include for excavation and removal of existing soil for in situ concrete footings. Posts to be set in concrete foundations 550 x 400 x 400mm to be C:20:P mix. Removable rail in knee rail fence to allow for maintenance access, for position refer to drawings. Maintenance access shall comprise a removable 3365mm long rail with a padlock. Centre of posts to be set out 3000mm apart and set behind end posts of knee rail above. Hot dipped galvanized drop bolt 15mm diameter to be drilled to receive a padlock. Galvanized metal end plate to be welded to one end of rail and any sharp edges to be filed off for smooth finish. Supply a suitable exterior grade heavy-duty padlock and issue keys to Employer.

**2.6 SOFT LANDSCAPE – GENERAL STANDARDS****2.6.1 BRITISH STANDARDS**

Nursery stock in accordance with latest Horticultural Trade Association nursery stock specification:- entitled “National Plant Specification”. Nursery Stock in accordance with latest horticultural trade association nursery stock specification entitled “National Plant Specification 2001.” Plants shall conform to:

- Nursery stock in accordance with latest Horticultural Trade Association nursery stock specification:- entitled “National Plant Specification”. Plants shall conform to BS 3936:pt1 1992; pt4:2007; pt9:1998;
- General Landscape Operations shall be to BS 4428:1989; Glossary for Landscape Works BS 3975 Pt 4: 1966: Turf – to comply with BS 3969:1998 + A1: 2013 - recommendations for turf for general purposes: Seeding – shall comply with the EEC Regulations 1974. Use blue labelled certified varieties to EC purity and germination regulations. When requested, submit an official seed Testing Station Certificate of Germination, Purity and Composition.
- Topsoil shall all comply with BS 3882:2015. Pesticides:

**2.6.2 GENERAL STANDARDS**

All works shall ensure compliance with the Control Of Pesticides Regulations 1986; COSHH Regulation 2008: Water Supply (water quality) Regulations amended 1991; Control of Pollution Act: 1974. Tree surgery works shall comply with BS 3998:2010 (Recommendations for Tree Work) unless otherwise specified. Trees in Relation to Construction shall comply with BS 5837: 2012 and BS 6549:1990, BS 3998: 2010 (recommended for tree works) and the Arboricultural Association – Standard Conditions of Contract and Specifications of Tree Works 1996, the Hedgerow Act 1997; and the Wildlife and Countryside Act 1981.

**2.6.3 WORKMANSHIP AND LABOUR**

All operatives carrying out soft landscape works shall have had some basic training and qualification in horticulture, to be approved by the Landscape Architect. All operatives shall be supervised by a qualified foreman – with a minimum of HND level or equivalent number of years’ experience.

**2.6.4 PLANTING SEASON AND WEATHER CONDITIONS**

All stock (other than container grown) shall be planted between November 30th and 28th February. Planting operations shall be carried out in suitable open weather and all plants re-firmed if lifted by frost during the contract. No planting shall take place in dry, hot and sunny weather or indeed if frost and snow are present, or in cold east winds, regardless of the stock type specified.

**SPECIFICATION FOR LANDSCAPE WORKS Continued:-****2.6.5 NURSERY MARK**

Plant all stock to the correct depth, no deeper than the nursery mark on the plant stem in accordance with BS 4428: 1989

**2.6.6 PLANTING OPERATIONS**

Pit plant all container-grown stock, only lightly loosening the root ball so not to damage any roots. Firm in – but not excessively – causing damage to the root ball. For all open ground stock, notch plant transplants and whips and pit plant feathers or larger stock, unless otherwise stated and agreed with the Landscape Architect. Plant in mixes and positions in accordance with the drawings. For notch planting, cut an open ‘T’ shape with a mattock blade or a spade to 200mm in depth planting the whip within the notch. Firm in the surrounding soil taking care not to damage the roots of the plant. For pit planting, excavate a pit approximately 20% larger than the root ball of the plant, and ensure the nursery mark is level with the soil surface. Fill any gaps around the root ball with soil and compost or other ameliorants firm in well but not excessively. Water in all stock within 2 hours of planting and prune back leggy growths, especially winter planted native whips, & remove up to a third the length of the whip with secateurs within 2 hours of planting.

**2.7 TREE PROTECTION**

2.7.1 Ascertain from the Site Manager if tree protection works are required within this contract – or being carried out by other specialist firms. In the event that tree protection works are required – refer to clauses 2.6.2 – 2.6.4 below. If not refer to clauses 2.8 onwards.

2.7.2 Existing trees to be retained shall be protected in accordance with the requirements and specifications set out in BS 5837:2012 and BS1722: Part 4, (unless agreed in writing by the Local Planning Authority as being an acceptable equivalent) and shall be positioned at a distance in accordance with BS 5837: 2012 which in all intents and purposes can be 5 metres from the drip line of the tree canopies). The location and type of tree protection are set out on a tree protection plan.

2.7.3 Trees shall be protected by welded mesh panel fencing 2m tall (in accordance with BS 5837:2012), fixed securely to scaffolding pole frame, erected according to the tree protection plan.

2.7.4 There shall be no access permitted by site workers within the protected (fenced) areas, and no excavation, ground scraping, storage of spoil or building materials of any kind permitted in order to avoid compaction, spillage of phytotoxic agents, mechanical damage etc. There shall be no access whatsoever under tree canopies by plant or machinery which might cause mechanical damage to the stems and branches of trees or compaction to the rootzone, with tree protective fencing being transported by Forwarder machine only.

**SPECIFICATION FOR LANDSCAPE WORKS Continued:-****2.8 TOPSOIL****2.8.1 QUALITY OF EXISTING OR IMPORTED TOPSOIL**

No imported soil shall be used without first working with the existing topsoil and ascertaining if this is sufficient, both in terms of quantity and quality to fulfil the requirements of the specification and plans as designed. Existing topsoil shall generally be of a standard to comply broadly with the classification and descriptions within BS 3882:2015, with a pH range of 6.5 – 7.9. A soil analysis must be undertaken by an approved soil scientist/analyst to demonstrate compliance. The Landscape Subcontractor must allow for all fees and costs incurred in sampling and testing. Reports on the quality and suitability of any proposed topsoil must contain the scientist/analyst's 'plain English' statement as to whether or not the topsoil is compliant with the specification and suitable for the purpose intended and if not what ameliorants are required to be added to make it suitable. If and when the existing topsoil is not, or cannot be improved to, a sufficient standard or indeed if the quantity is insufficient, then this fact shall at first be verified and agreed in writing by Persimmon Homes Suffolk's consultant Landscape Architect. Once verified and agreed, the Subcontractor shall ascertain the quantity of imported topsoil required, and this shall then be agreed by Persimmon Homes Suffolk's Consultant Landscape Architect. Once agreed, the Subcontractor shall source locally imported topsoil which shall comply with BS 3882:2015 and be free from weeds, roots and debris. A sample of the imported topsoil shall be submitted to Persimmon Homes Suffolk's consultant Landscape Architect and approved before use or additional soil is brought on site. All subsequent importations of topsoil shall be to the same quality and any topsoil brought onto the site without the approval of Persimmon Homes Suffolk's consultant Landscape Architect will be rejected, and is to be carted off site at the Landscape Subcontractor's expense.

**2.8.2 DEPTH OF TOPSOIL**

Topsoil is to be evenly and thoroughly cultivated to depths as follows incorporating any specified ameliorates to full depths of cultivation:-

- Extra Heavy Standard Trees - Pits generally 1.2 x 1.2 metres square and 0.95 metres deep.
- Standard Trees - Pits generally 1.0 x 1.0 metres square and 0.80 metres deep.
- Feathered trees and conifers - Pits generally 0.65 x 0.65 metres square and 0.65 metres deep.
- Shrubs 0.35 metres.
- Seeded or Turfed Areas 0.15 metres.

**2.8.3 STORAGE OF TOPSOIL ON SITE**

Store imported or existing topsoil on site, in an area to be agreed with the Employer, storing in heaps no greater than 2 metres high. Cover with sacking, or geotextile sheeting until used, to prevent excessive weed growth and drying. Any weed growth shall be removed by hand ensuring all weed growth has been removed before utilising the top-soil for fill.

**2.8.4 SPREADING TOPSOIL**

Where spreading topsoil falls within the remit of the Landscape Subcontractor, cart topsoil from on-site spoil heaps to the areas to be planted and spread topsoil to the depths required, (see clause 2.8.2 above), spread topsoil either for initial provision, where there is none, or else for amelioration of existing topsoil to reach proposed levels. Take special care to ensure that the finished soil levels are as specified along bed edges – in relation to adjacent surfaces. For planted areas (generally this means that sheet mulch is to be used), then finished soil levels at the bed edges shall be 70mm below adjacent paved or grass surfaces, this level then married into seamlessly with the ambient level of the bed.

**SPECIFICATION FOR LANDSCAPE WORKS Continued:-****2.8.4 SPREADING TOPSOIL Continued:-**

The recessed edge ensures the that sheet mulch and 50mm depth of course graded wood chip mulch can be spread over the beds and still leave a 20mm retaining edge to hold the mulch in place and prevent messy spillage on paved or grass surfaces. For any planted areas which will receive no sheet mulch, soil levels shall be left 90mm below adjacent paved or grass surfaces (to receive and retain 75mm depth of the same wood chip mulch). Soil levels are required to be recessed 70mm below adjacent finished paving levels for the first 400mm of the bed edge only, but can slope gently upwards for internal areas of the bed, inside this perimeter band, if and when there is advantage to do so, (to avoid carting surplus soil off site), so long as the bed does not slope more than 1:4 overall. Beds sloping at more than 1:4 will need gravel boards (75 x 25mm) placed as a continuous line, horizontally along the contours, each line of boards set at 1.5m intervals from the next, down the slope, set above soil level but with no gaps under, in order to retain bark mulch on the beds, and shall be fixed in position with 450 x 50 x 50mm wooden stakes at 1.5m centres, hammered into the ground to 25mm below the top of the boards and twice nailed to boards with two galvanised, flat headed nails of 75mm length.

**2.8.5 CHECKING SUITABILITY OF EXCAVATED BOTTOMS**

Before cultivation and planting operations, the Landscape Subcontractor shall check all excavated bottoms of excavations not carried out by him to ensure that; (a) there is or will be a suitable depth of topsoil, taking into account the recessed finished levels required, at bed edges, (as stated in clause 2.8.4 above) and (b) that the excavated bottoms are well broken up and free draining (not compacted or smeared). Where there is insufficient depth of topsoil or bases are smeared and impermeable, notify the site manager for action by the ground workers. Do not cultivate or plant until rectified. Where bed formation falls within the landscape subcontractors remit, allow for breaking up excavated bottoms to ensure they are free draining and for topsoiling to a suitable depth (cl. 2.8.2 above), or agree extra-over sums for so doing, according to the extent and nature of the subcontractor agreement you have. Failure to comply with the above and subsequent water-logging of beds later, shall require excavation of completed and waterlogged beds, in their entirety, rectifying the braking up of excavated bottoms, replacing topsoil and plants, (which may require new topsoil and new, healthy plants) including any sheet mulch and bark mulch specified – all at the landscape subcontractor's own expense (at the sole discretion of Persimmon Homes's Landscape Architect).

**2.8.6 CULTIVATION OF TOPSOIL GENERALLY**

Cultivation of topsoil shall be carried out in suitable weather conditions. No machine having a greater ground pressure than 0.2kg/cm<sup>2</sup> shall be used and any consolidated wheel tracks shall be forked over to relieve compaction. Larger areas shall be ploughed and harrowed and stone raked using tractor mounted agricultural equipment. Smaller areas shall employ mechanical rippers, rotovators and stone raking or burying machines. Very small areas shall be dug over and raked to a tilth free from stone by hand.

**2.8.7 DEEP CULTIVATION AND RELIEVING OF COMPACTION AND HARD PANS**

Ensure that all areas to be cultivated are free from compaction and hard pans. Relieve compacted ground or hard pans by ripping with a tractor mounted ripper at 500mm centres to a depth of 600mm. Do not rip within 10 metres of existing trees and 3 metres from hedges. For smaller areas where ripping is not possible, rotovate to sufficient depth to ensure there is no compaction but taking great care to avoid any damage to existing tree or hedge roots. Ensure all such operations are carried out in suitable weather conditions – not wet or waterlogged. Where tree roots are found – cease operations. Relieve any compaction using an air spade.

**SPECIFICATION FOR LANDSCAPE WORKS Continued:-**

**2.8.7 DEEP CULTIVATION AND RELIEVING OF COMPACTION AND HARD PANS**  
Continued:- Where excavated bottoms cannot be broken up sufficiently and ground water seepage or adjacent gradients and obstructions are likely to result in waterlogging, seek advice from your Employer and Persimmon Homes Suffolk's Landscape Architect. Such areas may require shattering with an air spade or 'Terravent' system, or additional drainage provision as appropriate.

**2.8.8 FINAL GRADING**

Final grading is to be carried out to ensure the true specified level and grade, avoiding hollows where water may collect. The use of a heavy roller will not be permitted to remove lumps and any area that becomes unduly compacted shall be loosened by forking.

**2.8.9 FERTILISER**

For all areas of planting apply 100g per m<sup>2</sup> of a suitable and approved granular, slow release fertiliser to soil in late March, ratios of 16:10:10 of N:P:K or similar and approved, strictly in accordance with the manufacturer's instructions and lightly worked into the surface of the soil - or as otherwise instructed by the manufacturer. Tree pits shall have 150g for standards and feathers; 250g for heavy standard tree pits and 350g for advanced nursery stock tree pits.

**2.8.10 SURFACE CULTIVATION (EXISTING OR IMPORTED TOPSOIL)**

Cultivate existing or imported topsoil taking care to adjust soil levels at bed edges to ensure that the finished soil levels within 400mm of the bed edges are recessed 65-80mm (90mm for non-sheet mulched beds) below the finished adjacent paving surface. For the remainder of the bed, the soil can slope upwards so long as the gradient of the bed does not exceed 1:4, to ensure the sheet and wood chip mulch does not slip. Ensure that the topsoil is sufficiently well cultivated and ameliorated to conform, to the requirements of BS 3882:2007, and that it is friable, aerated, mixed with compost and for clay soils also mixed with sand and that the soil is otherwise suitable for the healthy growth of plants.

**2.9 TOPSOIL FOR PITCHES****2.9.1 ROOTZONE: IMPORTED**

Imported rootzone shall only be required where insufficient existing topsoil is available suitable for site mixing. Soil shall be comprised of mixed and sieved topsoil that shall conform to BS 3882:2015 and be mixed with sand to the following mix ratios. The total rootzone will be 200mm depth and be formed in three layers. The 1<sup>st</sup> or bottom layer will be 100mm depth and be composed to a well-mixed ratio of approximately 50% sand, 15% clay, 35% silt/ organics. The second layer will be 50mm depth and be composed to a mix ratio of 70% sand, 20% silt/ organics and 10% clay; and the final top layer will be 50mm depth and be composed to a mix ratio of 80% sand, 10% silt and 10% clay. A sample of imported root zone shall be submitted to the Contract Administrator and approval before imported topsoil is used. All subsequent importations of soil shall be to the same quality as that hitherto approved. Any topsoil imported that does not have the approval of the Contract Administrator will be rejected, and shall be carted off site at the Contractor's own expense, unless instructed otherwise in writing. Root zone material where specified shall be obtained from Bailey's of Norfolk Ltd. Tel. 01603 754607 or other equal and approved.

**SPECIFICATION FOR LANDSCAPE WORKS Continued:-****2.9.2 ROOTZONE: EXISTING AND AMELIORATED**

Existing retained topsoil shall first be assessed as suitable and shall conform to BS 3882:2015. Soil suitable for retention, in the sole opinion of the Contract Administrator, shall only be used for outfield areas or for pitch surfaces only once improved by site mixing with sand to the following mix ratios. The total rootzone depth shall be 200mm depth and be formed in three layers: The 1<sup>st</sup> or bottom layer will be 100mm depth and be composed to a mix ratio of 50% sand and 50% existing topsoil. The middle layer will be 50mm depth and comprise a mix ratio of 70% sand and 30% existing top soil; and the final top layer will be 50mm depth and be composed to a mix ratio of 80% sand and 20% existing top soil. A sample of improved soil from site shall be submitted to the Contract Administrator and approved before imported topsoil or any retained and ameliorated soil is used. All subsequent ameliorations of existing soil shall be to the same quality as that hitherto approved. Any topsoil imported or soil ameliorated and reused that does not have the approval of the Contract Administrator will be rejected, and shall be carted off site at the Contractor's own expense, unless instructed otherwise in writing.

**2.9.3 ROOTZONE: EXISTING AND AMELIORATED FOR OUTFIELD AREAS**

Existing soil outside the outfield areas and football pitch where making good is required or seeding and planting have been specified shall be ameliorated to a depth of 100mm by the incorporation of sand and peat free horticultural compost at rates: sand 40kg/m<sup>2</sup> and compost 10Litres/m<sup>2</sup>. The existing topsoil shall be rotovated to an initial depth of 50mm, sand added and then rotovated to a total depth of 100mm to achieve permeable, clump free material ready for sowing grass seed. If the existing topsoil cannot be ameliorated and re-used because is too poor or contaminated, 100mm of topsoil to BS 3882:2015 shall be imported over the prepared, de-compacted and cultivated ground. Bunds, banks and adjacent outfield areas should be covered with topsoil (existing and ameliorated or imported – complying to BS3882:2007 and allowance made for natural settlement to take place, before seeding.

**2.9.4 CULTIVATION OF TOPSOIL**

Topsoil rootzone within the football pitch and all outfield areas, ditches, banks and bunds shall be evenly and thoroughly cultivated to 100mm depth. Cultivation shall be carried out in suitable weather conditions. No machine having a greater ground pressure than 0.2kg/cm<sup>2</sup> shall be used and any consolidated wheel tracks shall be forked over to relieve compaction. Larger areas shall be ploughed and harrowed and stone raked using tractor mounted agricultural equipment. Very small areas or intensely stony patches shall be dug over and raked to a tilth free from stone by hand. Ensure that all areas that are to be cultivated are free from any compaction.

**2.9.5 FINAL GRADING**

Final grading is to be carried out to ensure the true specified level and grade, and finally checked with a lazer level to ensure the true specified level and grade thereby avoiding hollows where water may collect. The use of a heavy roller will not be permitted to remove lumps and forking shall be carried out to loosen any area that becomes unduly compacted.

**SPECIFICATION FOR LANDSCAPE WORKS Continued:-****2.9.6 FERTILISER FOR SHRUB AND SEEDED AREAS**

For all areas to be planted apply 100g per m<sup>2</sup> of Hortibase CRF slow release fertiliser to soil in late March, (or September depending upon the date of seeding) strictly in accordance with the manufacturer's instructions, and work into soil. For all areas to receive grass seed (except for areas to receive wild flower or meadow grass seed mixes – which shall not under any circumstances be fertilized – unless specifically agreed with the Contract Administrator), apply a pre-seed fertilizer such as that marketed by British Seed Houses, or other similar and approved, – applied at a rate of 70g per m<sup>2</sup> and worked in to the top layer.

**2.9.7 FINAL TREATMENT FOR ALL AREAS TO BE SEEDED**

Following final grading operations, stone rake thoroughly using a suitable tractor mounted stone raker, small areas by hand, repeating as necessary after settlement to ensure that all stones greater than 30mm in any one direction are removed to leave a substantially stone free tilth. Following a further settlement period of 7-10 days repeat stone raking operations until no further stone is evident on the surface. Repeat again following establishment of the grass, if excessive stone re-emerges from further settlement and weathering.

**2.9.8 EXISTING SOIL INCLUDING OUTFIELD AREAS**

Cultivate existing soil insitu or following spreading operations as described in clauses 2.9. Ensure that soil is spread and graded to the levels stated in clauses above. Ensure that existing soil is sufficiently well cultivated and ameliorated to conform to the requirements of BS 3882: 2015, and in a fine tilth ready for seeding. Spray off any weed growth between cultivation and seeding. Delay seeding until such weed growth has died. Do not improve or ameliorate soil or spray for wildflower areas.

**2.10 WATERING****2.10.1 WATERING VISITS**

The Landscape Subcontractor shall provide means of watering shrubs and trees from an approved source for the duration of the contract, as agreed with the Employer. Watering shall be carried out during any continuous period of dry weather lasting more than 21 consecutive days and shall be defined as having been less than 30mm rainfall within this period, where upon watering shall be carried out at 3-5 day intervals as agreed with or instructed by the Employer or his agents, according to the temperature and conditions experienced – and sufficient to ensure the survival of shrubs, trees and turf. The Landscape Subcontractor shall be responsible for determining such dry periods and for notifying the Employer and Persimmon Homes Suffolk's Landscape Architect, and the Employer shall authorise the frequency of the required watering visits by the Landscape Subcontractor. Any plant failures due to drought, following failure to provide notification of dry periods (in the sole opinion of the Employer) shall be replaced at the Landscape Subcontractor's own expense.

**2.10.2 AMOUNT OF WATER PER VISIT**

Watering shall be to field capacity or 50 litres per tree and 25 litres per Metre Square for shrub areas, whichever is the greater. Water shall be supplied by fine spray hose attachment, or hand container with rose, to the base of plants. Watering shall not take place during the heat of the day or in full sunlight.

**2.10.3 EQUIPMENT**

The Landscape Subcontractor shall supply all necessary equipment including a bowser, and all such equipment shall be included in the Landscape Subcontractors' rates.

**SPECIFICATION FOR LANDSCAPE WORKS Continued:-****2.10.4 WATER RESTRICTIONS**

If the water supply is, or is likely to be, restricted by emergency legislation, inform the inspecting Landscape Architect and ascertain the availability and additional cost of second class water from a sewerage works or other approved source, having first prepared a risk assessment following liaison and advice from the Water Authority in connection with the avoidance of potential health risks from such water to persons working or living near to the area where the water is to be applied.

**2.11 SUPPLY OF PLANT MATERIAL****2.11.1 QUALITY OF PLANT MATERIAL**

All trees and shrubs are to be supplied from nurseries in the United Kingdom or other member countries of the EEC. The Landscape Architect is to approve the nursery selected by the Landscape Subcontractor for the supply of plants. All plant material shall conform to BS 3936 part 1-11. All plant material shall be transplanted nursery stock on healthy vigorous and sound roots with well-formed heads and to have been grown at or grown on at the supply nursery. Trees and shrubs shall be true to name. Plants will be of the sizes specified in the Horticultural Trades Association document – National Plant Specification. Any plants that fail to meet these criteria will be rejected and replaced by the Landscape Subcontractor at his own cost.

**2.11.2 CONDITION OF PLANTS**

All plants shall be free from pest and disease and shall be materially undamaged. No roots should be in torn or lacerated condition, or subject to adverse conditions such as prolonged exposure to drying winds or frost or subject to waterlogging between lifting and delivery. The root-ball shall be free from pernicious annual and perennial weeds, and from tree seedlings especially those of the goat willow, which are common in some nursery stock.

**2.11.3 CARE OF PLANTS**

The Landscape Subcontractor is responsible for the protection of plant material being hardened off or grown on at his nursery and shall make good defects – in respect of any frost damage to plants planted which have not been sufficiently hardened off, or fail to meet the HTA guidelines for the size of shrub specified. All plant material shall be packed at the supply nursery to ensure that there is no drying-out in transit. In the case of root-balled or open ground trees and shrubs the root-ball should be packed in damp hessian or other suitable material. Plants shall be well handles on site with minimal damage and breakage of stems or leaves. Damaged shrubs and trees will be rejected by the Site Manager or Persimmon Homes Suffolk's consultant Landscape Architect.

**2.11.4 SUBSTITUTION**

No substitutions to the plant selections shall be made without the written approval of Persimmon Homes Suffolk's consultant Landscape Architect. This is to protect the integrity of the design, comply with planning obligations, prevent contraventions of the NHBC Standards cl. 4.2 in terms of the proximity of trees, shrubs and climbers to buildings, and further ensure sales impact. In the rare event of a shortage in one variety of plants, the landscape Subcontractor shall agree a suitable substitution with Persimmon Homes Suffolk's consultant Landscape Architect over the telephone immediately: Contact details to be found on the drawings issued.



**SPECIFICATION FOR LANDSCAPE WORKS Continued:-****2.11.5 DELIVERY OF MATERIALS**

Plants should only be delivered on site when the weather and soil are in a suitable condition to be planted immediately. Persimmon Homes Suffolk's Site Manager or consultant Landscape Architect reserves the right to reject plant material, which he deems is deficient in variety, quality, health or size. Any rejected stock shall be returned to the nursery supplier and replaced with suitable stock at the Landscape Subcontractor's own expense.

**2.12 PLANTING OPERATIONS FOR TREES, SHRUBS AND HEDGES GENERALLY.****2.12.1 PREPARING FOR PLANTING**

For all native and native style planting for buffers, shrub beds and hedges; in the event of any delay between formation of the proposed ground modelling and soil profile, spray any weeds with a suitable translocated, systemic herbicide, in accordance with the manufacturer's instructions, the Control of Pesticide regulations 1986 and CoSHH regulations 2008 and product CoSHH sheet. Use a skilled and qualified operative in suitable non-windy weather conditions. There will be few days still enough for his procedure and timing will be crucial to avoid spray drift, which should be mentioned within the health and safety plan. Repeat spraying until a complete kill is achieved and remove any dead material. Pit plant the native or native style plants, shrubs and hedge plants into the existing soil, adding 5 litres of non-peat based compost and 10 grams of "Neutricote" 16,10,10 slow release fertilizer from Yara Ltd Tel:(01469) 554600 to each pit. Water in plants immediately on planting – see below. Supply and spread 50mm depth of 6-10mm gauge washed marine shingle or similar and approved, to a radius of 500mm around each plant.

**2.12.2 WATERING IN ON PLANTING**

All planting will require watering in with a minimum of 15 litres of water per pit, and for general shrub planting – 30 litres per metre square, applied with a fine spray hose in cloudy weather conditions to prevent sun scorch.

**2.13 TREE PLANTING****2.13.1 LOCATION OF TREES**

Access for excavation machinery to tree pits shall be agreed, before being carried out, with Persimmon Homes Suffolk's Site Manager and, as appropriate, Persimmon Homes Suffolk's Arboricultural and/or Ecological consultants, where such access traverses under tree canopies or through ecologically sensitive areas, fenced off zones, or ground left in its former wild state. Tree pits shall be located in the exact positions shown on the drawings. Any tree pits incorrectly positioned will be rejected and the Landscape Subcontractor shall be required to dig fresh pits at his own expense. This is because distances to foundations can be crucial to comply with NHBC Standards clause 4.2.

**2.13.2 EXCAVATION OF PITS**

Tree pits shall generally be dug as follows unless otherwise specified and/or indicated on the drawings:-

- 1200 x 1200 x 950 mm for extra heavy standard trees
- 1000 x 1000 x 800 mm for standard trees
- 650 x 650 x 650mm for feathered stock and conifers.

Prepare pits within two days of the actual tree planting taking place. Remove all excavated material from site. Any topsoil that may previously have been spread shall be carefully set aside for re-use. At the time of actual planting the pit shall be enlarged if necessary to allow 75mm clear around the edges of the spread of the root system of the plant. The base of the pit shall be broken up by forking to a minimum depth of 150mm. The sides of the pit shall be loosened to leave an open-textured face.

**SPECIFICATION FOR LANDSCAPE WORKS Continued:-****2.13.3 STAKE AND TIES**

Stakes shall be peeled larch pole with a clear height of 600mm above ground and 1.0m below ground with exception of extra heavy standards which shall have 2No. larch poles per tree 600mm apart and shall be to a height a third of the total height of the tree and below ground to a depth of 1000mm. Stakes shall be connected with a half round horizontal cross brace, nailed to the stakes with 2 No. galvanised nails at each end. All stakes shall have a minimum diameter at the top end of 70mm but shall average 100mm, and shall be free from any projections, and shall have been pointed at base to allow the stake to be driven into the sub-base. Stakes and cross brace to be pressure treated with Tanalith TE/FGb with ACQ by "PermaWood" or other similar and approved. Supply 1 no. rubber tie and spacer per tree, or 75mm width sack cloth wrapped in figure of eight formation around tree stem or stake (or brace) and with several turns between stem and stake (or brace) in order to provide a suitable or sufficient spacer to prevent chafing of the stem against the stake (or brace). In the case of tree stakes, the tie shall be positioned no lower than 25mm from the top of the stake to minimise the risk of chafing damage.

**2.13.4 TREE FERTILISER**

Incorporate 100g/m<sup>2</sup> of Hortibase CRF 16-8-12 slow release fertilizer from Hortifeeds, contact tel. (01522) 704404, for shrub planting – adding 150g for standard and feathered tree pits.

**2.13.5 SURPLUS EXCAVATED MATERIAL**

All surplus excavated material, weeds, stones, or rubbish encountered are to be carted away to a suitable and approved tip and all associated licences and tipping charges shall be included within the Landscape Subcontractors rates.

**3.13.6 BACKFILLING**

Topsoil and additives, (and including a 100mm depth pea gravel or sharp sand drainage layer, with geotextile blinding at the base of the tree pit), shall fill the pit to allow the top of the pit to run flush with surrounding ground levels after settlement, unless the tree is located within paving or grass areas where the soil level shall be 75-100mm below the paved or grass surface level in order to receive sheet mulch and one of the surfacing treatments listed below. For trees located within grass areas, a 50mm depth of coarse, graded, largely free of fines bark or wood chip mulch available from an approved source (e.g. 'Rustic Mulch' from CPA Horticulture (Tel. 01994 231121) or similar graded product from Melcourt Industries, which shall have first been approved in writing by Persimmon Homes Suffolk's consultant Landscape Architect (requiring the pit recess to be 75mm deep). As backfilling proceeds, the soil must be lightly firmed layer by layer, care being taken to avoid damage to the roots.

**2.13.7 MINOR DAMAGE AND LABELS**

Upon completion of the planted works the Landscape Subcontractor shall prune all damaged stems back to a shoot or node and shall remove all labels from the tree.

**2.13.8 WATERING TUBES**

All tree pits shall incorporate a 50mm diameter perforated watering tube laid horizontally around the top of the root ball with one end protruding to no more than 50mm above the surface, fitted with a tube cover. To be laid right around the top of the root ball so that water will be evenly distributed to the root ball itself by gravity and not beyond it or beneath it.

**SPECIFICATION FOR LANDSCAPE WORKS Continued:-****2.14 SHRUB PLANTING****2.14.1 LOCATION OF BEDS AND ACCESS.**

Shrubs are to be planted at the spacing, numbers and at distances from buildings shown on the plans. Persimmon Homes Suffolk's Landscape Architect may, at his discretion, vary the grouping, arrangement or density of the planting shown on the drawings to achieve the best immediate effect from the planting.

**2.14.2 PRUNING**

The Landscape Subcontractor shall allow for pruning back native plants by 30% on planting and prune new hedges to a crisp line, unless otherwise specified by Persimmon Homes Suffolk's Landscape Architect.

**2.14.3 PLANTING**

Plant shrubs exactly in accordance with the landscape drawings: see clause 1.2 for a list of drawing numbers. Excavate planting holes 75mm wider than the root spread, after cutting and folding sheet mulch (see sheet mulch instructions on the drawing). All non-perishable containers shall be removed and any damaged roots carefully pruned. Each plant shall be planted at its correct depth, to the original soil or nursery mark, to BS 4428:1989. Compost and sand additives shall be worked well into backfill whilst backfilling is in progress, taking care not to raise general levels of the soil so that the bed edges are less than 65-80mm below the adjacent pavement edges.

**2.14.4 BACKFILLING**

Gaps around the root ball shall be filled to half its depth and firmed by hand, but avoiding damage to the roots. Further soil can then be used to fill the voids to the surface and firmed by treading, taking care not to over firm and damage roots. Sheet mulch flaps (where applicable) can then be replaced around the stem of the plant, pegging as necessary (with increased centres for pegging at the edges of the bed, where the bed is exposed to wind or vulnerable to trampling).

**2.14.5 WATERING IN NEWLY PLANTED SHRUBS.**

Water in all plants within 2 hours of planting with 25 litres minimum per Metre Square.

**2.14.6 SURPLUS MATERIAL**

All surplus excavated soil material, along with weeds, stones, litter, debris encountered during planting operations shall be carted away to a suitable, licensed tip.

**2.14.7 SHEET MULCH**

Supply and lay sheet mulch, such as "Weedfabric Direct" available from [WWW.weedfabricdirect.co.uk](http://WWW.weedfabricdirect.co.uk), Tel: (01382) 738471, or similar and approved. Ensure that the area to be planted is evenly graded. Ensure that the soil is recessed along all bed edges, so that the sheet mulch will be 70mm (plus or minus 10mm tolerance), below the adjacent surfaces for a width of 400mm from the bed edge and this recessed soil level shall be married in to the original level, (It is advisable to bury the material from the back and then to stretch the material back over the bed. Achieve this by excavating a trench 75-100mm deeper than the finished soil level, to a width of one spit, all along the edge of the bed. Unroll the material along the outer edge of the planted area, upside-down, the material lying mostly over the adjacent surface, leaving just 150-200mm or so overhanging the bed itself. Bury this overhang in soil to a depth of 75-100mm all along the edge of the bed and then stretch the material back over the bed itself to its full width. Peg the material down at 300mm centres along both edges, and at 500mm centres elsewhere. Use plastic pegs available from Weedfabricdirect as above (or other similar and approved).

**SPECIFICATION FOR LANDSCAPE WORKS Continued:-****2.14.7 SHEET MULCH Continued:-**

Where there is a concrete haunch on the outer edge, the material can sometimes be fixed to it using masonry nails, in addition to the burying technique set out above. Unroll further lengths, overlapping 100mm to cover the entire area to be planted. Following pegging, place the plants on the material as shown on the planting plan. Cut a cross in the material at least 350mm wide for each plant position. Peel the 4 flaps back and weigh them down with small stones or clods. Pit plant each of the plants proposed, dispose of any surplus soil either into the pots of the shrubs just planted or by spreading under the sheet, (taking care not to make the ground uneven or impact on soil levels near to bed edges or where necessary, cart away to skip. Once the plants are planted, replace the material flaps around the stem tightly and peg to hold in place. Following completion of all planting operations, supply and spread suitable and approved graded, 'no-fines,' wood chip mulch as specified below.

**2.14.8 SOIL LEVELS WHERE SHEET MULCH IS USED.**

It is essential that the soil levels, following cultivation and incorporation of compost are finished 70mm below adjacent pavement or grass surfaces - in order to receive 50mm of approved wood chip mulch (as specified) over, or else the wood chip will spill onto paved surfaces or in the case of grass areas, cause problems with mowing. Compliance with this specification of soil levels will ensure that there is a 20mm retaining edge to all planting beds to prevent the mulch from spilling out over paved and grass surfaces that so commonly result in maintenance problems and mess.

**2.14.9 MULCHES GENERALLY**

All bark or wood chip mulches shall have a nominal particle size of 15-75mm with 0% dust and fines and a representative sample shall be submitted to and approved by Persimmon Homes Suffolk's Landscape Architect prior to use, whose decision as to its acceptability shall be final. No costs for sweeping up, carting away or replacing mulches shall be accepted by the Employer if rejected by Persimmon Homes Suffolk's Landscape Architect. All mulch products shall be pest, disease and weed free and not have been treated with Methyl Bromide or any additives. It shall have been tested in accordance with the requirements of BS 4790:1987, for fire resistance and have a pH of between 4.5 and 5.5.

**2.14.10 COARSE GRADED WOOD CHIP MULCH, FREE OF FINES**

Supply and spread a course, graded wood chip mulch (containing no fines). This wood chip mulch shall have a large average particle sized, no-fines mulches available: No more than 10% by weight shall pass through a 20mm mesh. The fines-free graded mulch is essential to prevent the mulch braking down rapidly into soil. No substitution will be accepted whatsoever, unless first approved in writing by Persimmon Homes Suffolk's Landscape Architect, following submission of a representative sample. Spread the mulch evenly over the bed ensuring that finished levels adjacent to pathways are at least 15mm below pavement levels, and not covering manholes or airbricks. No sheet mulch (where applicable) should be visible after spreading mulch. Supply wood chip mulch to a depth of 50mm for planting incorporating sheet mulch and 75mm for all other planting (unless otherwise stated). Water thoroughly as specified. Mulch that is supplied and spread but not approved by Persimmon Homes Suffolk's Landscape Architect shall be removed from the beds and replaced with the specified material entirely at the Landscape Subcontractors own cost.

**SPECIFICATION FOR LANDSCAPE WORKS Continued:-****2.14.11 SAMPLE**

Sample loads of not less than 1 cubic metre should be submitted for comment and approval by the Landscape Architect whose opinion shall be final in determining if the mulch is suitable or not. Keep samples separate and intact for future comparison. Any unauthorised mulch supplied and spread on the site and subsequently rejected by the Landscape Architect shall be removed and replaced entirely at the Landscape Subcontractors' own expense.

**2.15 NATIVE WHIP PLANTING IN MIXES (TO BE PIT OR NOTCH PLANTED)****2.15.1 PLANTING NATIVE AND SEMI-NATIVE WHIPS AND SHRUBS**

Check soil levels at bed edges are adjusted to a minimum of 65mm below pavement surfaces. Supply and notch plant whips and shrubs in groups of 3-5 of each species exactly in accordance with the arrangements and juxtapositions shown on the planting plans, to be inspected by the Contract Administrator. Pit plant container grown stock, ensuring that the pit is large enough in width and depth to fit whole pot and compost. Ensure the base and sides are broken up, and the plant firmed, and watered in. Open ground stock shall be notch planted and adequately firmed in. Do not pit plant under canopies of existing trees.

**2.15.2 PRUNING BACK NATIVE AND SEMI-NATIVE WHIPS AND SHRUBS**

Allowing for pruning back leggy stems by a third on planting assisting establishment.

**2.15.3 MULCHING AND WATERING NATIVE AND SEMI-NATIVE WHIPS AND SHRUBS**

Include 75mm of Melcourt industries "Rustic mulch" and include for watering in shrubs with 25L water per m<sup>2</sup>, applied with a fine spray hose, within 30 minutes of planting. Ensure that the top of the mulch level shall be finished below 20mm below adjacent grass or paved surfaces.

**2.16 PLANTING HEDGES.****2.16.1 SUPPLY AND PLANTING GENERALLY**

Check soil levels are adjusted as specified. Supply native hedge plants as per the plans listed in clause 1.2, and allow for pruning back leggy growth after planting. Supply and lay sheet mulch, such as "Weedfabric Direct" available from [WWW.weedfabricdirect.co.uk](http://WWW.weedfabricdirect.co.uk), Tel: (01382) 738471, or similar and approved as per clause 2.13.7. This may be laid either after or before planting as preferred.

**2.16.2 PLANTING HEDGES**

Notch plant in double rows, each row offset to the other so that there are no gaps when viewed face on and each row straight and tidy. Supply and spread 50mm depth of Melcourt Industries "Rustic Biomulch" or other similar and approved graded mulch. Spread mulch evenly over and watering with 20 Litres /m<sup>2</sup>.

**2.17. REPLACEMENT OF TREES AND SHRUBS.**

2.17.1 Any trees which, within 12 months of planting, and any shrubs or herbaceous plants within 6 months of planting, fail to show growth or develop full foliage during the growing season after planting, will be rejected and shall be replaced by the Landscape Subcontractor, at his own expense, including any works necessary to enable planting to be properly carried out, i.e. the removal and disposal of dead plant material, unless others are responsible for maintenance, and this is clearly inadequate or deficient. The opinion of the Landscape Architect shall be final in judging damaged and unhealthy plants to be replaced at the Landscape Subcontractors' own expense.

**SPECIFICATION FOR LANDSCAPE WORKS Continued:-**

2.17.2 Any plants which are destroyed by vandalism, theft or similar cause through no fault of the Landscape Subcontractor, shall be replaced by the landscaper, having first furnished the Employer with a written quotation for the supply and planting of the replacement plants and an instruction for the same.

2.17.3 All plants damaged by residents or personnel engaged in Landscape Management, or otherwise vandalised or stolen, shall be recorded and replaced only with the written agreement of the Employer, having first been furnished with a written quotation for the supply and planting of the replacement plants. Shrubs and trees so replaced shall be the same as those specified, previously supplied and approved.

**2.18 SEEDING GENERAL AMENITY AREAS.****2.18.1 PREPARATION FOR SEEDING**

Deep rip any compacted areas of ground (especially areas that have been used as a compound, materials store or temporary road, ripping at 500mm centres to a depth of 600mm Rotovate topsoil to a depth of 150mm, and then surface cultivate by harrow – including any grading to ensure an even level, cultivating into a fine tilth. Include for stone raking to remove any stones greater than 30mm in any one direction until an even tilth is achieved. Seed with a low maintenance, drought tolerant grass seed mix as follows:-

**2.18.2 MINIMISING WEED IN THE SOIL BASE**

No sooner than six weeks following ground preparation works, spray off all weed growth. All in accordance with the guidelines and requirements set out in the specification, using a translocated, systemic, folia acting herbicide. Repeat operation until a complete kill is achieved. Three weeks following final spray, rake off and remove all dead material from site. All spraying operations shall be in accordance with the manufacturer's instructions, the Control of Pesticide regulations 1986 and CoSHH regulations 2008 and product CoSHH sheet. Use a skilled and qualified operative in suitable non-windy weather conditions. There will be few days still enough for his procedure and timing will be crucial to avoid spray drift, which should be mentioned within the health and safety plan. Repeat spraying until a complete kill is achieved and remove any dead material.

**2.18.3 SEEDING**

For pitches and overrun area sow sports grass seed mix - Bar 9, obtainable from Barenbrug uk ltd (01359) 270766), and for amenity areas sow A21 Saline Coastal by Germinal (01522 868714) at a rate of 50g/m<sup>2</sup>, evenly over specified areas, all to B.S. 4428: 1969. Carefully rake in thoroughly to ensure that the seed is a few millimetres below surface levels. Roll using a light roller or a cylinder mower. Ensure surface is even and level. Water thoroughly to field capacity immediately after seeding using a fine spray hose and continue to water to maintain a moist soil incorporating a little liquid feed, make to be agreed until complete establishment. Include for temporary protection until grass is established. For large grass areas, greater than 1500m<sup>2</sup>, take care to carry out seeding operations in suitable damp weather conditions. Water in sustained dry periods (over two weeks without rain), irrigating with bowser if necessary, to prevent failure of newly established seed.

**2.18.4 ESTABLISHMENT OF SEEDING AMENITY AREAS**

Mow when the grass reaches 50mm tall cutting to a height of 35mm. Mow again within 10 days to a height of 30mm. Mow again after 10 days to a height of 25mm. Include for all subsequent mowing and stone raking until grass fully established, and for hand weeding out persistent residual weeds and moreover for spraying with a suitable selective herbicide to remove weeds after the grass has properly established.

**SPECIFICATION FOR LANDSCAPE WORKS Continued:-****2.18.5 ESTABLISHMENT OF SEEDING SPORTS PITCHES**

Mow to a height of 75mm for the first time 1 month after germination. Cut to a height of 50mm 2 weeks after the first cut and then cut to a height of 35mm 2 weeks after the second cut. Mow to a height of 20mm, at 10-day intervals throughout the growing season, and allow 20 cuts in total. Remove grass cuttings from site after each visit, to an approved composting facility. Trim edges and mowing margins. Roll grass in April, June and August.

**2.19 SEEDING WILD FLOWER MEADOW MIX****2.19.1 PREPARATION FOR WILDFLOWER MEADOW MIX SEEDING**

Deep rip any compacted areas of ground (especially areas that have been used as a compound, materials store or temporary road, ripping at 500mm centres to a depth of 600mm Rotovate topsoil to a depth of 150mm, and then surface cultivate by harrow – including any grading to ensure an even level, cultivating into a fine tilth. Include for stone raking to remove any stones greater than 30mm in any one direction until an even tilth is achieved. Seed with a low maintenance, drought tolerant grass seed mix as follows:-

**2.19.2 MINIMISING WEED IN THE SOIL BASE – FALLOW PERIOD**

No sooner than six weeks following ground preparation works (the fallow period), spray off all weed growth. All in accordance with the guidelines and requirements set out in the specification, using a translocated, systemic, folia acting herbicide. Repeat operation until a complete kill is achieved. Three weeks following final spray, rake off and remove all dead material from site. All spraying operations shall be in accordance with the manufacturer's instructions, the Control of Pesticide regulations 1986 and CoSHH regulations 2008 and product CoSHH sheet. Use a skilled and qualified operative in suitable non-windy weather conditions. There will be few days still enough for his procedure and timing will be crucial to avoid spray drift, which should be mentioned within the health and safety plan. Repeat fallow period and spraying until an inert sterile soil medium is achieved.

**2.19.3 SUITABLE WEATHER FOR SOWING**

Sow meadow mixtures shown below in suitable weather conditions (damp and warm). Do not seed during warm, dry weather or in cold / dry conditions (the window for seeding is weather dependant at the end of the normal seeding season. Agree dates for seeding with Contract Administrator).

**2.19.4 WILDFLOWER MEADOW GRASS SEED MIXES**

- EM3 Special General Meadow Mix. Wildflower Meadow Seed Mix (20% Wild Flowers: 80% Grasses) obtainable from Emorsgate Seed Tel: (01553) 829028. Sow at a rate of 4g/m<sup>2</sup>, evenly over specified areas.
- Wet Wildflower Meadow EL1 – Flowering Lawn Mixture (available from Emorsgate Seeds Tel: 01553 829028) at rate of 4 g/m<sup>2</sup>.

Seeding shall only take place in suitable calm weather conditions when the ground is warm and moist (preferably August – September). Spread seed evenly at the specified rate applied in two equal sowings in transverse directions; an inert carrier such as sand or sawdust may be used.

**SPECIFICATION FOR LANDSCAPE WORKS Continued:-****2.19.6 ESTABLISHED MANAGEMENT OF WILDFLOWER MEADOW MIX**

In the second and subsequent years wild flower and meadow grass can be managed in a number of ways which, in association with soil fertility, will determine the character of the grassland. Generally, the sowing can be managed as a meadow allowing the grasses to grow tall, flower and seed from May through to July/August. The grass meadow should be cut back and mowing resumed in late summer; usually late September to Late October to a height of 125mm and once in mid-March (if established) to a height of 150mm. Strim again from the end of August to Mid-September to a height of 75mm. Then annually at this time, but add an additional October and March cuts in sustained mild, damp years where growth is lush. Collect arisings immediately from strimming by raking or mechanical collector. Hand weed out persistent residual weeds or spot spray (only in windless conditions to avoid spray drift).



### **3.0 MAINTENANCE OF NEWLY CONSTRUCTED ELEMENTS PRIOR TO HANDOVER**

#### **3.1 MAINTENANCE GENERALLY**

The following management clauses relate to the annual management of the site, for the contractual period. The Subcontractor is responsible for the maintenance of the landscape works following construction, without necessarily having been in receipt of a certificate of Practical Completion for the works or part of the works. The Subcontractor shall be responsible for the timing and number of visits to ensure the site has a well-maintained appearance, unless there is specific reference to a quantity of visits required or a date or period when a particular item is necessary. The Subcontractor's management rate shall be complete with overheads, profit, plant, supplies and equipment.

#### **3.2 HEALTH AND SFATEY**

The Main Contractor owes members of the public a duty of care that the landscape elements, both hard and soft, are safe, clean, and that all risks of injury and damage to persons and property are minimised. This is particularly important with the more high risk areas of the resort, such as play areas and the water feature. However, this extends to all parts of the site and the works, including the paving, planting, and street furniture; avoiding trip hazards, emptying litter bins and removing debris, glass and litter.

#### **3.3 GENERAL STANDARDS**

It is essential that the site is well maintained with all hard and soft landscape elements in good condition, state of repair and clean – and free from snags and hazards. The objective will be to regularly inspect the Works and attend to the cleanliness of structures and surfaces to include sweeping; wiping; washing; staining; painting; tidying and other such ancillary works in respect of hard landscape. Furthermore, maintenance will include weeding, watering, pruning, fertilising and other such ancillary works in respect of soft landscape elements. Dilapidated, damaged and vandalised items shall be repaired or replaced like for like, as necessary. Any such damage occurring to any element of the Works, such as sculptures, railings or street furniture that might cause injury to persons or property shall be decommissioned exactly as for items of play equipment – see below.

#### **3.4 REPLACEMENT OF FAILED PLANTS**

Any tree or shrub that dies or is necessarily felled as a result of storm damage, mechanical damage, vandalism, or fungal decay, shall be replaced by a tree or shrub of the same species or similar species, as required and instructed following consultation with the Landscape Architect, whose opinion shall be final. Cut back any shrubs and herbaceous plants where they have become misshapen, or are failing, missing or dead as a result of storm damage, mechanical damage, vandalism, theft, fungal or other pathogenic attack or any other adverse cause beyond the fault and control of the Subcontractor. Replace such shrubs with the same or similar species following consultation with the Landscape Architect, whose opinion shall be final. Nursery stock shall be container grown and shall match the stock that has failed, and conform to horticultural trade association classifications of stock size, quality, and number of breaks. Include for grubbing out any existing shrubs to be replaced, including chipping all arisings and bagging up accumulations and carting off site. Trees, shrubs and herbaceous plants that fail for any other reason than those given above, shall be replaced by the Main Contractor at his own expense.

**SPECIFICATION FOR LANDSCAPE WORKS Continued:-****3.5 GRASS CUTTING.**

Mow seeded areas as set out in the seeding clauses above, and continue to mow as follows:  
- Mow to height of 20 - 25mm, at 14-day intervals throughout the growing season, and allow 14 cuts in total. Remove grass cuttings from site from May to August. Strim edges and mowing margins. Roll grass in April, June and August. Apply an approved turf fertilizer, selective weed killer and moss retardant in May and September. Vary the mowing frequency to ensure that there is no excessive cutting during dry periods and that mowing is continued until the grass stops growing. The contractor shall take responsibility for the timing of these cuts to ensure that the grass always looks well maintained. Increase mowing height to 40mm in dry weather and for the first cut of the year.

**3.6 HARD LANDSCAPE STRUCTURES AND STREET FURNITURE**

During the contract period, review all paved areas and enclosing elements, structures and facilities, which shall be inspected for signs of wear and tear, movement and need for replacement. Relay paving where there occurs differential settlement or any unit's wobble, or are not firmly bedded, jointed, pointed or have become uneven and could constitute a trip hazard. Repaint any metalwork where abrasion, chipping or flaking occurs, using paint type and colour to match that existing. Repair any fences where rails, braces, panels, etc have become loose or weak. Tighten self-closing springs and repair or replace any broken panels, bars, items or units, as appropriate, carting away failed materials to skip. Inspect street furniture monthly taking great care to inspect posts, footings, and fixings and paint work. Check that posts are upright and firm and that footings are intact. Ensure that paint work is complete and that there is no sign of rust. Ensure that all fixings are secure and in good repair. Any defect shall be carefully recorded and arrangements for repair made within seven days with the Street Furniture Company or other suitable and approved contractor.

**3.7 PAVED AREAS**

All paving shall be inspected monthly checking for mechanical damage, vandalism, settlement, frost heave, staining, litter, dog's mess, leaves, chewing gum or any other defect. Any such defects shall be documented on attendance sheets and a corrective methodology recommended and put into practice, to be agreed with the Landscape Architect and Contract Administrator to ensure the rectification of the defect. All paved surfaces shall be swept monthly to ensure that they are clean, tidy and free from dust and debris (carting away all arisings to tip). Edgings shall be similarly inspected with any paved edgings adjacent to grass surfaces to receive edging of the grass using a 'half-moon' edging tool to ensure a neat, clean-cut finish.

**3.8 SPOT HERBICIDING PLANTED AREAS**

Persistent perennial weeds shall be controlled using a suitable folia-acting systemic translocated herbicide applied strictly in accordance with the manufacturer's instructions, as required and at intervals to ensure no regeneration of weed. Extreme care must be taken to avoid damage to surrounding plants and grass, and to avoid spray drift. Any herbicide treatment shall comply with the 1986 Control of Pesticide Regulations and 2008 COSHH regulations and product COSHH sheet, and the type of herbicide shall first be agreed with the landscape architect. Spraying shall be carried out by a qualified and skilled operative, and shall not be undertaken in windy conditions. All damage resulting from incorrect usage, spillage, and spray drift, to be rectified at the Contractors expense. Four visits per growing season are required per growing season, late March, late June, mid-August and mid-October. The timing of visits may vary according to weather conditions, but should occur at approximately 6-week intervals. NB: Spray drift is a major CDM hazard. No spraying shall take place unless wind speeds are less than force 2 on the Beaufort scale.

**SPECIFICATION FOR LANDSCAPE WORKS Continued:-****3.9 WATERING.****(i) Shrubs and Trees.**

Water both shrubs and trees during dry periods (being any period without substantial rainfall for 14 days or more. Water at the rates given as follows. Water all shrubs to field capacity (minimum 20 litres per m<sup>2</sup>) and water all trees at 25 litres per tree position. Apply water at a frequency of once per week from April to the end of September, (to a maximum of 26 visits). Increase watering frequency for both shrubs and trees during any continuous hot weather lasting more than 7 days. The contractor shall be entirely responsible for varying the frequency of these visits according to climatic conditions. The Contractor shall be responsible for any plant failures during the management contract: -

**(ii) Turf/ Seeded Areas.**

Water turf to field capacity (minimum 20 litres per m<sup>2</sup>) on 10 separate and agreed occasions during the management period or at any time that the grass appears to be going brown and suffering from drought stress. Water from June to August during dry weather conditions, as required to keep the grass healthy.

**(iii) Watering Generally.**

Watering shall be increased also during long dry periods (less than 30mm rainfall at end of any 4-week period) and the contractor shall be responsible determining such dry periods and for contacting the Leisure Services of the LPA and agreeing the timing of each additional watering visit. The Contractor shall replace at his own expense any planting or turf which fails due to lack of water. During periods of drought, when restrictions are placed on the use of water, the Contractor shall be responsible for notifying the Leisure Services Dept. of the LPA of sources of second class water and the costs of obtaining such water.

**3.10 SHRUBS, TREES & TIDYING BEDS.**

Remove all litter and debris at each visit, leaving the site clean and tidy. Firm in and straighten any loosened plants and prune out dead, leggy and broken branches, without damage to natural habit of plant. In the case of trees, a suitably skilled and qualified arboriculturist shall carry out such pruning. Tree stakes and ties shall be checked, adjusted and replaced as necessary. Prune hedges back to even hedge line to encourage thickening twice within the first growing season after planting. All trees and shrubs shall be fertilised using an approved slow release granular feed (N10:P15:P10) at a rate of 60g/ m<sup>2</sup> IN early May and September. Prune back shrubs in the period October to March in accordance with sound horticultural practices, pruning back to a node, shoot or bud. Do not box clip (except for hedges) or round off shrubs. Prune individual stems in such a way that the shrub does not lose its natural habit and appearance. Prune out crossover branches, invasive suckers, dead wood, damaged stems, any spindly growths and any epicormic growths in the case of trees that will weaken the plant. Prune back Rosaceous and quick growing plants much harder than other species, but prune back by no more than 30% in any one year. Prune vigorous and leggy species back to 200mm above ground every 3<sup>rd</sup> year, but retaining any young growths. Reduce Ivy growth only where it has started to constrict growth and cause dye-back to host tree/ hedge by cutting twice through main stems. Prune back any diseased or rotten wood (including the removal of main stems and limbs) back to sound wood. Remove all stems and limbs that are unsafe or are in danger of falling or breaking up during gales. Prune hedges twice annually, pruning to an even hedge line. Prune back planting once annually for the first two growing seasons to thicken and cart away arisings to tip. Do not site burn.

**SPECIFICATION FOR LANDSCAPE WORKS Continued:-****3.11 WEEDING PLANTED AREAS**

Remove all weed growth by hand as necessary to ensure weed free and tidy planting beds. Take great care not to disturb bark mulch. All weeds shall be removed from the site. Seven visits are required per growing season. Visits should occur approximately monthly in the growing season, subject to weather conditions, from April to October.

**3.12 WILDFLOWER MEADOW MIX**

Strim once in early September to a height of 125mm and once in mid-March to a height of 100mm. Include for hand weeding out persistent residual weeds – taking care to avoid weeding out plug planted species. Include for the immediate removal from site of all cut material except for the summer cut, which should be only carried out in dry, open weather - when the cut material should be removed 7 days after strimming to allow to dry and the seed to set.