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Series 3000 Specification

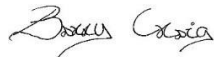
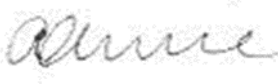
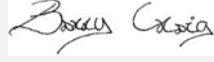
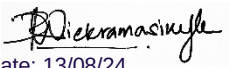
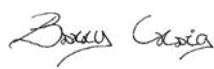
Quakers Yard

CODWBD15EMER / -AMEY-ELS-XX-SP-001 / P03

12/08/2024

Document Control Sheet

PROJECT NAME:	Quakers Yard
PROJECT NUMBER:	CODWBD15EMER
REPORT TITLE:	Series 3000 Specification
REPORT NUMBER:	-AMEY-ELS-XX-SP-001

ISSUE STATUS/AMENDMENT	PREPARED	REVIEWED	APPROVED
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Executive Summary

This specification includes general site information and requirements for soft landscape works including, but not limited to; tree planting, grass & wildflower seeding and other associated requirements for Quakers Yard. This specification will also address other requirements under the Manual of Contract Documents for Highways Works (DMRB) Series 3000 Landscape and Ecology requirements for Quakers Yard.

It should be read in conjunction with the Manual of Contract Documentation for Highways Works, Volume 1 Specification for Highways Works, Series 3000 Landscape and Ecology.

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Appendix 30/1 Landscape General

Action Number	Sub-Clause Reference	Specification Amendment
1	3001.2	The Company shall give the Overseeing Organisation at least 48 hours' notice of the following items in sub-clause 3001.2. a) Spreading and checking depths of topsoil; b) Grass/Wildflower seeding c) Planting d) Mulching e) Tree felling f) Arboricultural works g) Applications of any pesticides
2	3001.3	Peat or peat-based products shall not be used, except where peat is excavated on site. Should peat be found on site, store in separate stockpiles and mix back into backfill material for planting pits.
3	3001.4-13	Hand weeding shall be carried out at the locations and frequency stated in Appendix 30/2. Hand weeding shall consist of the removal of the entire weed, including roots, by digging, forking, hoeing or pulling. Weeds shall be removed prior to flowering and the arisings removed.
4	3001.14	Damaging or destroying the nest of a wild bird (whilst being built or in use) is an offence under the Wildlife and Countryside Act 1981. Therefore, any clearance or felling of vegetation, in which birds are nesting, should be undertaken outside the breeding season. The bird nesting period for this Agreement shall be from March 1st to August 31st inclusive, unless otherwise agreed in writing with overseeing organisation. The Contractor shall not apply any netting or other means to prevent nesting out with the bird nesting period. Should the Contractor require to undertake any works during the breeding season, the Contractor shall be responsible for undertaking all necessary ecological surveys or watching briefs to determine the presence or otherwise of nesting birds within associated scrub and trees and these shall be carried out by appropriately qualified persons. Only when the required surveys demonstrate the absence of nesting birds, and approval from the Overseeing Organisation has been confirmed, can the works proceed and in doing so shall take full cognisance of any special measures identified within the ecological surveys.

Action Number	Sub-Clause Reference	Specification Amendment
5	3001.15	Landscape inspection reports on a form as detailed in this Appendix 30/1 shall be submitted to the Overseeing Organisation for the activities carried out under Clauses 3007 Grass and Wildflower Maintenance, 3009 Establishment Maintenance for Planting and 3010 Maintenance of Established Trees and Shrubs at the following intervals: a) In the case of activities carried out under Clauses 3007 two times per year; and b) In the case of activities carried out under Clause 3010 once per year. In the case of activities carried out under Clause 3009 a) Six times per year in the first year of the Establishment Period; b) Four times per year in the second year of the Establishment Period; and c) Three times per year for the remainder of the Establishment Period.
6	Inserted Clause	The contractor shall give the Overseeing Organisation advance notice that they will be undertaking the following operations: a) Setting out; b) Pruning; and c) Otherwise.
7	Inserted Clause	Chemical intervention must only be used for the control of Invasive Non-Native Species as included in Schedule 9 of the Wildlife and Countryside Act 1981 and only at such times when no other method of control can be employed.

LANDSCAPE WORKS - INSPECTION REPORT	
Date of visit: ../ ../ .. (minimum one record / day)	
Name of Company/Contractor:	Company/Contractor's telephone no:
Operations carried out	Locations of Operations
Names of operatives on site:	
..... Company observations on damage by others, additional work required or general condition of the works:	
..... This maintenance visit has been satisfactorily completed. SIGNED (for Company) NAME: DATE: ../ ../ .. SIGNED (for client) NAME:..... DATE: ../ ../ ..	

LANDSCAPE WORKS - PESTICIDES RECORD

Chemical intervention must only be used for the control of Invasive Non-Native Species as included in Schedule 9 of the Wildlife and Countryside Act 1981 and only at such times when no other method of control can be employed.

Contract Reference no: **Date of visit:**/...../..... (minimum one record/ day)

Name of Subcontractor:
Subcontractor's telephone no:

Operations carried out	Pesticide used	Locations of Operations
Invasive species:		
Invasive species:		
Invasive species:		
Other (state purpose)		

Names of operatives on site:	-	Qualifications of operatives named:
.....	-	
.....	-	
.....	-	
.....	-	
.....	-	
.....	-	

Supervisor: **Storeman:**
Application by:

Subcontractor's observations on damage by others, additional work required and/ or general condition of the works:

.....

Observations of Overseeing Organisation on standard of workmanship, additional work required and/ or general condition of the works:

.....

This maintenance visit has been satisfactorily completed.

SIGNED (for Subcontractor)

SIGNED (for client)

.....

NAME:

NAME:

DATE:/...../.....

DATE:/...../.....

Appendix 30/2 Weed Control

Action Number	Sub-Clause Reference	Specification Amendment
1	3002.1	Weed control for all injurious weed species and/or other nuisance/invasive plant species, including those listed in sub-Clause 3002.1 with the addition of Oil Seed Rape, Rosebay Willowherb, Mares tail, Gorse and Broom shall be carried out throughout the New Works until the end of the Establishment Period at sufficient frequency to restrict their growth and prevent their spread. Chemical intervention must only be used for the control of Invasive Non-Native Species as included in Schedule 9 of the Wildlife and Countryside Act 1981 and only at such times when no other method of control can be employed. If required, chemical weed control should be kept to a minimum and wherever possible avoid the use of Glyphosate based products or other chemicals known to have a negative effect on bees and other pollinating insects. There is no requirement to control areas of Clover.
2	3002.3	Total weed control through hand digging shall apply to the following locations: a) Around structures, columns, posts and signs; and b) All paved areas, kerbs, hardstanding, filter drains. Chemical intervention should be used as a last resource only. If required, the Contractor shall apply herbicides at sufficient frequency (at least two applications each year) to eliminate weed growth throughout the New Works Period until the end of the Establishment Period. Contact, translocated and residual herbicides approved for total weed control shall be applied in accordance with the manufacturer's instructions, at the locations and frequency stated in Appendix 30/2.
3	3002.4	Total weed control by non-residual herbicide shall only apply to the following locations: a) Areas of invasive species
4	3002.5	If required a translocated herbicide approved by NRW (Natural Resources Wales) and the overseeing organisation or their successors for use in or near water shall be used for invasive weed control in all open ditches, lagoons, watercourses and filter drains. Control shall be at sufficient frequency to eliminate invasive weed growth throughout the New Works until the end of the Establishment Period. Observe all precautions recommended by the manufacturer and remove containers from site immediately they have been emptied or are no longer required, to appropriate hazardous waste disposal site. DO NOT allow any spills or leaks from herbicides.

Action Number	Sub-Clause Reference	Specification Amendment
5	3002.8	Weed control by hand weeding shall be carried out as necessary, and in any case no less than four times a year throughout the New Works until the end of the Establishment Period at the following locations: a) All planting areas where spot application may cause damage; b) Areas densely populated with desirable broadleaf species where spot application may cause damage; and c) Where necessary throughout the Site for the elimination of all injurious weed species and/or other nuisance/invasive plant species.
6	3002.9	Weed control by cutting shall be carried out as necessary in areas where the extent of growth or type of weed is not effectively controlled by hand weeding.
7	3002.10	The Contractor shall remove all arisings in accordance with sub-clause 3002.10 from weed control operations that involve hand weeding and cutting and take to suitable licensed tip or composting centre.
8	Inserted Clause	Ragwort is the main larval food plant of the cinnabar moth, a living organism of principal importance for the purpose of maintaining and enhancing biodiversity in relation to Wales (Environmental (Wales) Act 2017, section 7.) Therefore it although listed as a common native weed it should not be prevented from spreading on site.

Appendix 30/3 Control of Rabbits

Action Number	Sub-Clause Reference	Specification Amendment
1	3003.1	The Contractor shall carry out rabbit control in all planting and seeding areas as necessary to ensure successful establishment for the duration of the New Works until the end of the Establishment Period. The Contractor will also be responsible for contacting adjacent landowners regarding their obligation to control infestations on their own land. The arisings shall be used to form habitat piles in locations where they are not likely to become visually intrusive or interfere with access or maintenance. No clearance of brambles or herbage shall be undertaken during the bird nesting season. Any existing warrens or rabbit burrows within any planting areas shall be cleared of rabbits and the entry/exit holes effectively blocked prior to any planting taking place on the Site.
2	3003.8	The Contractor is responsible for ensuring that all new plants are protected from damage by rabbits for the duration of the Establishment Maintenance period.
3	3003.9	The Overseeing Organisation shall request an inspection of the site with a representative of the Contractor at monthly intervals to ensure effective control has been achieved.
4	3003.12	The Contractor shall keep planting enclosures free of rabbits, rabbit burrows including exit/entry holes until such time that planting has become fully established and is of sufficient size and maturity so as to be no longer vulnerable to significant damage but no earlier than the end of the Establishment Period.
5	3003.13	The Contractor shall replace any plant material damaged by rabbits due to the failure of the Contractor to effectively block entry points, burrows and nests or failure of the Contractor to maintain the fences, shelters or guards as described in the Contract.
6	3003.14	The Contractor is responsible for replacing all plants damaged by rabbits for the duration of the contract. Such replacement plants shall be replaced annually (before December 31 of that planting season) and maintain them for the duration of the Establishment Maintenance period. All replacements (species, size and quantity) to be agreed with the Overseeing Organisation.
7	Inserted Clause	Any rabbits, or other animals, that become trapped within any fenced off areas are to be humanely released with minimal distress in line with the Animal Welfare Act 2006, Section 4.

Appendix 30/4 Ground Preparation

Action Number	Sub-Clause Reference	Specification Amendment
1	Inserted clause	Contractor required to carry out full PAS 128 Survey prior to breaking ground.
2	3004.1	Within areas of proposed planting or seeding, all existing grass and herbaceous vegetation shall be cut to ground level with the intention to expose as much bare soil as possible.
3	Inserted clause	All imported topsoil shall be of good quality, with a light texture, and conform to Class 5B of the Highways Specification and BS 3882 'General Purpose Category'. Unless the topsoil is from a reliable source that previously supported good plant growth the following tests are required: a) pH - the soil pH should be between 5.5 – 7.8 b) Organic matter - which should be greater than 5% c) Nitrogen (N) - which should be greater 0.2% d) Phosphorous - which should be greater than 45 mg/kg e) Potassium - which should be greater than 240 mg/kg f) Magnesium - which should be greater than 80 mg/kg More involved tests for phytotoxic elements (e.g. copper, nickel, zinc) and zootoxic elements (e.g. arsenic, lead, mercury) need only be undertaken if there is any doubt regarding the origin of the topsoil. The tests must be undertaken by a recognised testing laboratory and presented to the client prior to importing.
4	3004.5	All areas of proposed wildflower & grass mixes to be deep ploughed to achieve soil inversion to a minimum depth of 300mm to invert topsoil beneath sub soil and to reduce fertility in top layer of soil.
5	Inserted clause	Compost shall be PAS100:2011 and screened at 20mm and the pH, conductivity and nutrient composition shall be decided in compliance with the Company's Quality Plan and associated method statements based on the results of the manufacturers topsoil tests.
6	3004.7	The requirements of sub-clauses 3004.8 – 3004.11 shall apply to all subsoil to be seeded or topsoil spread under the Agreement except where otherwise stated in Appendix 30/4.
7	3004.8	All undesirable material brought to the surface including but not limited to stones, roots, tufts of grass and foreign matter larger than the sizes specified below shall be removed off Site unless otherwise agreed with the Overseeing Organisation. The size of the stones / debris which shall be removed relates to the proposed vegetation cover, the maximum stone / debris size permitted for each, is as follows: (i) Grass verges and visibility splays (N14 Flowering Lawn): 25 millimetre protruding stone after topsoil has been firmed / rolled.

Action Number	Sub-Clause Reference	Specification Amendment
		(ii) Proposed Meadows (N5 Long Season Meadow): 75 millimetre. The above stone removal shall apply to the full depth of topsoil required for the proposed vegetation cover. The overall stone content by percentage volume shall not be greater than that of the adjacent soils. Stones brought to the surface during final preparation of soils shall be retained on site and used to form habitat piles in locations that are not visually intrusive and shall not interfere with access or the maintenance of the New Works Site. All non-organic foreign matter shall be removed off site.
8	3004.10	The Contractor shall undertake final preparation of soils in accordance with Clauses 3004.8 to 3004.11. Areas to receive final preparations of soils shall be as follows: All areas where topsoil is required to be spread under the Contract for all planting; All other existing soiled areas that are required to be planted; Any areas that have been damaged by the works; and Any areas that require to be reinstated. Wildflower & Grass mix areas are to be prepared in line with clause 3004.5. If this is not achieved or the soil is not appropriate (high nutrient) there shall be a minimum depth of low nutrient topsoil of 150mm for all seeded areas. Finished settled levels shall be 25-30mm higher than adjoining hard finishes and at the same level as adjoining grass areas.
9	3004.11	Once material has been spread and/or graded, the area shall not be traversed by machinery or used for storage purposes.
10	Inserted Clause	All Works in the vicinity of existing trees to be in accordance with BS5837:2012 – Trees in relation to design, demolition and construction – Recommendations. Trees and woodland to be retained and protected for the duration of the construction period.

Appendix 30/5 Grass Seeding and Wildflower Seeding.

Action Number	Sub-Clause Reference	Specification Amendment
1	3005.1	Seed shall be sown during the period 1 March to 31 May or 1 September to 31 October, unless otherwise stated in Appendix 30/5.
2	3005.2	All areas to be seeded shall be cultivated as per sub-clause 3005.2 and 3005.3. Final cultivation is to ensure smooth flowing contours with rounding in at top and base of slopes and tie neatly into existing retained levels, with no sudden 'steps' in levels.
3	3005.3	If required in Appendix 30/5, fertiliser or other soil ameliorants shall be evenly incorporated into the upper 50 mm of soil during final cultivations at the rate stated in Appendix 30/5.
3	3005.4	Grass & Wildflower seed mixes shall be as follows; a) N5 Long Season Meadow Mixture Mix (Naturescape or similar approved) b) N14 Flowering Lawn Mixture (Naturescape or similar approved)
4	3005.6	Seed shall comprise the mixture(s) stated in Appendix 30/5. a) Grass seed shall comply with BS 4428. b) Grass seed shall be a tested mixture and certificates of germination and purity obtained from an Official Seed Testing Station not more than six months prior to sowing shall be provided to the Overseeing Organisation before sowing, together with the names of the varieties used in the mixture. The information on seed certificates and seed bag labels shall correspond. The Contractor shall provide written evidence that seeds comply with any provenance requirements described in Appendix 30/5.

Action Number	Sub-Clause Reference	Specification Amendment
5	3005.7	All seed mixes shall be of UK native origin and local provenance to the proposed site. The Contractor shall complete and submit to the Overseeing Organisation a wildflower seed Provenance Certificate in accordance with the Certification Procedure. Seed mixes shall contain only species occurring in the National Vegetation Classification category appropriate to the location. Local provenance seed shall be supplied by either harvesting from the approved sites or from nursery propagation to the approval of overseeing organisation. If nursery propagated seed shall be used the Contractor shall allow sufficient time in their programme to ensure that the seed is available when required for sowing. The proposed Grass & Wildflower seed mixes shall contain a minimum percentage of: a) 95% pure seed, not inert material (% by weight); and b) Seeds within all seed mixes shall have a minimum germination rate of 80%.
6	3005.8	Unless otherwise stated in Appendix 30/5, sowing shall be carried out by evenly distributing the seed at a rate as specified below: • N5 Long Season Meadow Mix to be sown at rate 5g/m² • N14 Flowering Lawn Mix to be sown at rate 5g/m² Seed mixtures specified are from Naturescape or equivalent approved. Suitable Alternative mixtures may be used subject to the written approval of test mixtures by the Overseeing Organisation.
7	3005.9	Sowing shall be immediately followed by lightly raking the surface of the soil to cover the seeds, by use of a chain harrow or other suitable plant.
9	Inserted Clause	A fine friable seedbed should be created down to 150mm in depth. Two equal sowings at right angles to each other and diagonally to main axis. Broadcast manually or use seed drill, rake level and roll. Ensure good seed to soil contact.
8	3005.11	Seed Mix Germination The seeding shall be repeated as necessary until an evenly distributed dense sward is established over the seeded area. The Contractor shall allow for maintenance of all grass areas in accordance with Clause 3007 until this has been achieved. Establishment shall be regarded as achieved when at least 80% of quadrant sub-divisions are recorded as 'filled' when tested in accordance with Annex A3 of BS 3969.

Action Number	Sub-Clause Reference	Specification Amendment
9	Inserted Clause	Following initial germination, the contractor to revisit site e.g. 2-4 weeks and recheck on establishment and germination if any areas larger than 0.25m ² are still bare then to over seed with 'fresh' seed mix and rake this in to the surface topsoil.
10	3005.29	Establishment / initial cuts of the grassed areas are to be in accordance with the requirements below: Visibility splay and verges– initial cut when grass reaches 75mm. Cut to around 25-50mm. All other areas of N14 Flowering lawn – Cut down to 30mm early in the growing season. Remove arisings. N5 Long Season Meadow Mixture – Cut down to 70-100mm in early March and allow flowering until mid/late October. If grass is overtaking meadow an additional cut may be required.
11	3005.30	Unless permitted otherwise in Appendix 30/5, all areas shall be left clear of grass cuttings following each mowing by raking or other suitable method, and arisings disposed of off Site.

1.1.1 N5 Long Season Meadow Mix as shown on Drawings – CODWBD15EMER-AMEY-ELS-XX-DR-LL-001, CODWBD15EMER-AMEY-ELS-XX-DR-LL-002 & CODWBD15EMER-AMEY-ELS-XX-DR-LL-004.

Supplied by Naturescape or similar approved and to be sown at rate 5g/m² or similar approved.

Tel: 01949 860592

Email: sales@naturescape.co.uk

Latin Name	English Name	Mix Composition
Wildflower Species		
Achillea millefolium	Yarrow	3%
Centaurea nigra	Common Knapweed	5%
Centaurea scabiosa	Greater Knapweed	3%
Daucus carota	Wild Carrot	5%
Echium vulgare	Viper's Bugloss	2%
Galium verum	Lady's Bedstraw	6%
Geranium pratense	Meadow Cranesbill	2%
Hypochaeris radicata	Common Catsear	2%
Knautia arvensis	Field Scabious	3.5%
Lathyrus pratensis	Meadow Vetchling	2%
Leontodon hispidus	Rough Hawkbit	2%
Leucanthemum vulgare	Oxeye Daisy	5%

Linaria vulgaris	Common Toadflax	1%
Lotus corniculatus	Birdsfoot Trefoil	4%
Malva moschata	Musk Mallow	3%
Plantago media	Hoary Plantain	2.5%
Primula veris	Cowslip	3%
Prunella vulgaris	Self Heal	7%
Ranunculus acris	Meadow Buttercup	5%
Ranunculus bulbosus	Bulbous Buttercup	5%
Rhinanthus minor	Yellow Rattle	6%
Rumex acetosa	Common Sorrel	5%
Scabiosa columbaria	Small Scabious	3%
Silene dioica	Red Campion	4%
Stachys officinalis	Betony	3%
Succisa pratensis	Devilsbit Scabious	2%
Trifolium pratense	Wild Red Clover	2.5%
Verbascum nigrum	Dark Mullein	1.5%
Vicia cracca	Tufted Vetch	2%
Grass species		
Agrostis capillaris	Common Bent	3%
Anthoxanthum odoratum (N)	Sweet Vernal Grass	3%
Briza media (N)	Quaking Grass	2%
Cynosurus cristatus	Crested Dogstail	22%
Festuca Trachyphylla	Hard Fescue	22%
Festuca rubra ssp. commutata	Chewing's Fescue	22%
Festuca rubra ssp. litoralis	Slender Creeping Red Fescue	13%
Hordeum secalinum (N)	Meadow Barley	1%
Poa pratensis	Smooth Stalked Meadow Grass	10%
Trisetum flavescens	Yellow Oatgrass	2%

1.1.2 N14 Flowering Lawn Mix as shown on Drawings – CODWBD15EMER-AMEY-ELS-XX-DR-LL-001, CODWBD15EMER-AMEY-ELS-XX-DR-LL-002 & CODWBD15EMER-AMEY-ELS-XX-DR-LL-004.

Supplied by Naturescape or similar approved and to be sown at rate 5g/m² or similar approved.

Tel: 01949 860592

Email: sales@naturescape.co.uk

Latin Name	English Name	Mix Composition
Wildflower Species		
Achillea millefolium	Yarrow	4%
Anthyllis vulneraria	Kidney Vetch	4%
Galium verum	Lady's Bedstraw	12%
Hypochaeris radicata	Common Catsear	3%

Leontodon hispidus	Rough Hawkbit	4%
Leucanthemum vulgare	Oxeye Daisy	8%
Lotus corniculatus	Birdsfoot Trefoil	10%
Plantago lanceolata	Ribwort Plantain	8%
Primula veris	Cowslip	7%
Prunella vulgaris	Self Heal	16%
Ranunculus acris	Meadow Buttercup	12%
Rumex acetosa	Common Sorrel	12%
Grass species		
Agrostis capillaris	Common Bent	5%
Cynosurus cristatus	Crested Dogstail	15%
Festuca Trachyphylla	Hard Fescue	20%
Festuca rubra ssp. litoralis	Slender Creeping Red Fescue	20%
Festuca rubra ssp. rubra	Strong Creeping Red Fescue	20%
Poa pratensis	Smooth Stalked Meadow Grass	20%

Appendix 30/6 Planting

Action Number	Sub-Clause Reference	Specification Amendment
1	3006.1	All Planting Works shall be carried out in accordance with BS 8545, BS 4043, BS 4428 and BS 5837 and as shown on the related Planting drawing's - CODWBD15EMER-AMEY-ELS-XX-DR-LL-001, CODWBD15EMER-AMEY-ELS-XX-DR-LL-002 & CODWBD15EMER-AMEY-ELS-XX-DR-LL-003 & CODWBD15EMER-AMEY-ELS-XX-DR-LL-005
2	3006.3	Plant stock and sizes shall be as Tables 30/6. 1 and 2. Species, varieties and plant spacing shall be in accordance with the New Works Requirements.
3	3006.3	All plants to be supplied shall be as scheduled in Appendix 30/6 and shall comply with: a) BS 3936 : Parts 1 to 10 as relevant, b) BS 4043, c) BS 8545, d) The National Plant Specification, published by the Horticultural Trades Association, e) and/or as otherwise required in Appendix 30/6.
4	3006.4	No grafted stock shall be supplied.
5	3006.5	Plants shall be supplied in a planting medium containing specified <i>mycorrhiza spp.</i>
6	3006.6	All native species plants shall be of British Origin and from the Local Welsh stock where possible. All plants shall be obtained from a Horticultural Trades Association (HTA) accredited nursery in the Nursery Certification Scheme. The Provenance Certificate pro-forma supplied in Part 3 of the Employer's Requirements. The Contractor/Overseeing Organisation shall provide written confirmation that United Kingdom native plant species have been sourced from the highest available preference for selecting plant material prior to commencement of planting Works. The Contractor shall submit Provenance Certificates in accordance with the Certification Procedure accompanied by certification from the supplying nurseries in respect of the provenance of plant material in accordance with the Certification Procedure. Where there is a choice of form or size of plant material, the most local provenance shall be selected.
7	3006.8	Plants shall be lifted, packed and handled in accordance with BS 3936, BS 4043, BS8545, Horticultural Trades Association National Plant Specification and the Joint Council for Landscape Industries' publication: <i>Handling and Establishing Landscape Plants</i> .

Action Number	Sub-Clause Reference	Specification Amendment
8	3006.9	During the period subsequent to the receipt of the plants and prior to planting, the Contractor shall comply with the treatment of nursery stock specified below: (i) Container grown plants. Containers shall be maintained upright, watered as required, sheltered and protected from frost, and shall not be packaged or stored more than one layer deep. Degradable pots, cells or root-trainers that may disintegrate in transit shall be enclosed in polythene film (250 gauge) and firmly secured. (ii) Root-balled plants. Permeable wrappings shall be kept moist by watering and plants in polythene wrappings protected from direct sunlight. For longer periods of storage, root-balls with permeable wrappings shall be placed on a well-drained surface and covered with a deep layer of sand, pulverised bark, wood shavings or other suitable material. (iii) Protection from frost: when necessary, additional measures shall be undertaken to protect plants from frost. (iv) The location for temporary storage shall be sheltered from winds and well drained. (v) Any plants damaged by frost, desiccation, or in any other way prior to planting, shall be removed from site and replaced by the Contractor with new plants. The new plants shall comply with the quality standards mentioned above.
9	3006.10	All nursery / delivery labels, canes and ties are to be removed at the time of planting and these items disposed of off Site.
10	3006.11	All other arisings from the planting including containers, wrappings, paddings, fastenings and bags shall be collected immediately by the Contractor and removed off site.
11	3006.12	Unless otherwise stated in Appendix 30/6, topsoil for tree pits shall be General Purpose Grade conforming to BS 3882.
12	3006.13	Where trees are to be pit planted compost shall be incorporated into the soil during pit preparation and backfilling at a rate of 4:1 Topsoil to Compost including slow-release fertilizer at recommended rate(s) refer to 3006.15. Incorporate Rootgrow mycorrhizal fungi to all tree pits, at recommended rate(s), before planting. No compost or fertiliser is required for seed areas.

Action Number	Sub-Clause Reference	Specification Amendment
13	3006.14	Compost shall be PAS100 and screened at 20mm and pH, conductivity and nutrient composition shall be decided in compliance with the Company's Quality Plan and associated method statements based on the results of topsoil tests.
14	3006.15	Slow-release fertiliser shall be incorporated into backfill of planting bed soil, inline with manufacturer's instructions and in accordance with sub-clause 3006.15 at a rate based on the results of soil tests. Slow-release fertilizer with a Nitrogen: Potassium: Phosphorus: Magnesium ratio of 14:8:13:2 shall be incorporated into the backfill of tree pits/planting areas as per manufacturer's instructions.
15	3006.17	Planting shall take place during favourable weather and soil conditions whilst the plants are dormant between the beginning of November and the end of March. The planting season may be extended beyond March, with written agreement with the Overseeing Organisation, if weather conditions remain favourable i.e. cool and damp.
16	3006.18	Container grown plants may be planted at any time during favourable weather and soil conditions with an approved watering regime in place.
17	3006.21	No planting or preparatory operations shall take place when the ground is frost bound, covered by snow, excessively wet or waterlogged as defined in Clause 618, or in excessively dry or windy conditions.
18	3006.22	Planting depth for all plants shall be to the original nursery soil mark on the plant, unless otherwise stated in Appendix 30/6.
19	3006.24	Planting pits for all trees shall be excavated to the dimensions given in Table 30/06.3 The subsoil in the pit base shall be broken up to a further depth of 150mm. Arisings from planting pits and trenches shall be disposed of as directed in Appendix 30/6.
20	3006.25	On sloping ground, pits shall be dug with vertical sides and horizontal base and shall maintain the specified minimum depth throughout. When backfilled, planting pits shall be finished to existing contours.
21	3006.26	For pits for specimen trees any excavated topsoil shall be set aside to be used as backfill. The Contractor shall import topsoil in accordance with sub-Clause 3006.12, to make up for any deficiencies caused by the removal of subsoil or fill material.

Action Number	Sub-Clause Reference	Specification Amendment
22	3006.29	Where required in Appendix 30/6, the ground shall be cultivated to a minimum depth of 300 mm removing all live injurious weed roots and growth to a tip off Site. Any stones or other rubbish over 75 mm in any direction shall be removed from the surface and disposed of in accordance with sub-Clause 3004.8. Root disturbance of adjacent plants shall be avoided and the surface left with a medium tilth. Any ameliorants specified in Appendix 30/6 shall be incorporated in a second pass following initial cultivation.
23	3006.31	In planting beds, the extent of the area to be planted shall first be defined by plants spaced around the perimeter. The remaining plants shall then be used to fill in the centre of the area in an informal manner, avoiding straight lines and regular geometric patterns.
24	3006.32	At each planting position sufficient soil shall be excavated from the bed to allow 75 mm clearance between either the rootball, or the root-ends when fully spread, and the sides and bottom of the planting hole. The plant shall be set in the centre of the plant position, showing its best side to the front. Irrigation/aeration tube to be positioned at the back of the best side.
25	3006.33	Finely broken back-fill material shall be packed around the roots. The plants shall be gently shaken to allow fine soil to surround the roots. As soil is returned it shall be lightly consolidated and firmly heeled around the root-collar. Immediately after planting the soil surface shall be evenly graded. Where required in Appendix 30/6, the soil shall then be watered at the rate stated in Appendix 30/6.
26	3006.34	Each plant shall be placed upright in the centre of the pit or, where required in Appendix 30/6, with the roots spread evenly outwards and downwards without restriction. Where necessary, any badly damaged roots shall be carefully pruned before being planted.
27	3006.35	The pit or trench shall be backfilled with pre-mixed 80% topsoil / 20% compost mixture or other mixture stated in Appendix 30/6 and the backfill lightly firmed.
28	3006.36	Unless otherwise stated in Appendix 30/6, staked shall be round timber, peeled of bark, straight in length and free of snags, pests and diseases. Staked shall have a top diameter of 50-75mm.
29	3007.37	Unless otherwise stated in Appendix 30/6, adjustable tree ties, strapping or spacers shall be made of black PVC or reinforced rubber. The width of the belt shall be 25mm.
30	3007.38	Where required in Appendix 30/6, root barriers shall be provided at the time of planting, in order to constrain the growth of tree roots. Root barriers shall be supplied and installed in accordance with Appendix 30/6 and the manufacturer's instructions.

Action Number	Sub-Clause Reference	Specification Amendment
31	3006.39	All wrappings, insulation and padding shall be removed from rootballs immediately before backfilling. No wire or plastic mesh containers may be left in position. Any damaged or torn roots shall be cut back cleanly to sound wood prior to planting.
32	3006.46	Unless otherwise stated in Appendix 30/6, backfill to tree pits shall comprise any excavated topsoil and imported topsoil as necessary with compost in accordance with sub-Clause 3006.14, in a 80% topsoil/20% compost mixture thoroughly mixed.
33	3006.48	During backfilling, the tree shall be gently shaken at regular intervals to settle the mixture closely around the roots. The backfill mixture shall be firmed in layers not exceeding 150 mm to a finished level equivalent to the nursery soil mark on the tree.
34	3006.49	Where required in Appendix 30/6, each tree shall be watered in on the same day as planting, at the rate stated in Appendix 30/6. The water shall be delivered by means of a low-pressure hose to avoid any washing out of the soil, into a depression made in the planting medium around the base of the stem to ensure that the water goes to the root system. The planting medium shall then be returned to its previous level.
35	3006.51	Where trees are to be situated within mown grass areas two additional posts of a diameter similar to that of the stake shall be driven firmly into the ground to leave a finished height or approximately 400mm above soil level. These posts shall be sited clear of the tree roots in a triangular relationship to the stake, such that the combined effect with the weed-free circle will prevent accidental damage by mowing machinery.
36	3006.53	Before application of any mulch the planting areas and/or tree positions which are to be mulched shall be free of grass and weed growth. Where required in Appendix 30/6, the planting areas and/or tree positions shall be watered at the rate stated in Appendix 30/6.
37	3006.55	Where it is stated in Appendix 30/6 that timber mulch is to be used, it should be a product certified under the Forest Stewardship Council (FSC), as an appropriate grade for the site. Mulch to be made up from onsite arisings in the first instance and following this organic wood chips. An organic mulch comprising composted wood chips or bark, free of fungi and diseases, methyl bromide contamination or foreign material. It shall be matured for a minimum of 16 weeks, naturally heated by the process of decomposition to temperatures exceeding 50°C for a minimum period of 14 days, followed by a period of stabilisation.

Action Number	Sub-Clause Reference	Specification Amendment
38	3006.56	Where organic mulch (collected on site from arisings) is to be used as a mulch, it shall be spread evenly over the planting bed, to a depth of 75 mm after settlement as shown on planting details. Where and when organic mulch runs out, organic wood chips to be used as substitute as required. See drawing CODWBD15EMER-AMEY-ELS-XX-DR-LL-003 & CODWBD15EMER-AMEY-ELS-XX-DR-LL-005.
39	3006.86	The Contractor shall maintain all planting undertaken under the Contract in accordance with Clauses 3007, 3008 and 3009 until all planting works are certified as completed.
40	3006.87	For the duration of the period stated in Appendix 30/6, the Contractor shall replace all plants which are missing, have died, or which in the opinion of the Overseeing Organisation are failing to make satisfactory extension growth.
41	3006.88	In early September of each year following completion of the initial planting of woody plants, the Contractor shall arrange an inspection of each area of new planting works with a representative of the Overseeing Organisation. The Contractor shall also arrange an inspection of each area of new planting works with a representative of the Overseeing Organisation in the April following completion of the initial planting.
42	3006.89	All plants which are missing, are damaged, have died, or, in the opinion of the Overseeing Organisation, are failing to make satisfactory extension growth, shall be replaced in the next planting season as stated in sub-Clauses 3006.17 to 3006.20 immediately following the inspection. Replacement plants shall, in all aspects, be the same as the original stock at the time of planting, except that it shall be an additional year older for each year that has elapsed since the original stock was first planted, unless otherwise stated in Appendix 30/6. All replacement planting work shall be carried out in accordance with Clause 3006. The Contractor shall bear the cost of all plant replacements, unless otherwise stated in Appendix 30/6.
43	3006.90	When replacement planting is undertaken, ground and pit preparation and planting shall be undertaken in accordance with this Clause. All plants removed shall be taken to a tip off site. Diseased plants shall be disposed of in accordance with sub-Clause 3010.3.
44	3006.91	Following replacement planting, any stakes, ties, tubes or guards shall be refixed/ replaced and any mulch shall be reinstated to the original specification. Where required in Appendix 30/6, plants shall be watered at the rate stated in Appendix 30/6. Watering shall be carried out prior to any mulch reinstatement.
45	3006.92	The Contractor shall carry out maintenance of new planting in accordance with clauses 3007, and 3009 for the duration of the works until the end of the Establishment Period.

1.1.3 Table 30/6.1: Specimen Tree planting as shown on Drawings - CODWBD15EMER-AMEY-ELS-XX-DR-LL-001, CODWBD15EMER-AMEY-ELS-XX-DR-LL-002 & CODWBD15EMER-AMEY-ELS-XX-DR-LL-003

1.1.4 Stock to be containerised if planting is to take place outside of growing season. Specimen trees to be supplied in 60L pots as shown on drawings CODWBD15EMER-AMEY-ELS-XX-DR-LL-005

Latin Name	Specification	Height	Number	Mix
Betula pubescens	12-14cmg, 3xWRB, Clear Stem min 1.75m	300-400cm	8	25%
Betula pendula	12-14cmg, 3xWRB, Clear Stem min 1.75m	300-400cm	8	25%
Acer campestre	12-14cmg, 3xWRB, Clear Stem min 1.75m	300-400cm	8	25%
Sorbus torminalis	12-14cmg, 3xWRB, Clear Stem min 1.75m	300-400cm	8	25%

1.1.5 Table 30/6.2: Woodland North Mix as shown on Drawings - CODWBD15EMER-AMEY-ELS-XX-DR-LL-001, CODWBD15EMER-AMEY-ELS-XX-DR-LL-002 & CODWBD15EMER-AMEY-ELS-XX-DR-LL-003

1.1.6 Stock to be containerised if planting is to take place outside of growing season. Woodland North mix to be supplied in 5L pots as shown on drawings CODWBD15EMER-AMEY-ELS-XX-DR-LL-005

Latin Name	Specification	Height	Number	Mix
Betula pubescens	+1 Transplant: BR	80-100cm	9	25%
Betula pendula	+1 Transplant: BR	80-100cm	9	25%
Acer campestre	+1 Transplant: BR	80-100cm	9	25%
Sorbus torminalis	+1 Transplant: BR	80-100cm	9	25%

1.1.7 Table 30/6.3: Woodland South Mix as shown on Drawings - CODWBD15EMER-AMEY-ELS-XX-DR-LL-001, CODWBD15EMER-AMEY-ELS-XX-DR-LL-002 & CODWBD15EMER-AMEY-ELS-XX-DR-LL-003

1.1.8 Stock to be containerised if planting is to take place outside of growing season. Woodland South Mix to be supplied in 5L pots as shown on drawings CODWBD15EMER-AMEY-ELS-XX-DR-LL-005

Latin Name	Specification	Height	Number	Mix
Betula pubescens	+1 Transplant: BR	80-100cm	89	20%
Betula pendula	+1 Transplant: BR	80-100cm	89	20%
Acer campestre	+1 Transplant: BR	80-100cm	67	20%
Sorbus torminalis	+1 Transplant: BR	80-100cm	89	15%
Quercus robur	+1 Transplant: BR	80-100cm	45	10%
Malus sylvestris	+1 Transplant: BR	80-100cm	67	15%

1.1.9 Table 30/6.4: Woodland Edge North Mix as shown on Drawings - CODWBD15EMER-AMEY-ELS-XX-DR-LL-001, CODWBD15EMER-AMEY-ELS-XX-DR-LL-002 & CODWBD15EMER-AMEY-ELS-XX-DR-LL-003

1.1.10 Stock to be containerised if planting is to take place outside of growing season. Woodland Edge North mix to come be supplied in 2L pots as shown on drawings CODWBD15EMER-AMEY-ELS-XX-DR-LL-005

Latin Name	Specification	Height	Number	Mix
Viburnum opulus	+1 Transplant: BR	40-60cm	24	15%
Cornus sanguinea	+1 Transplant: BR	40-60cm	24	15%
Crataegus monogyna	+1 Transplant: BR	40-60cm	47	30%
Corylus avellana	+1 Transplant: BR	40-60cm	39	25%
Prunus avium	+1 Transplant: BR	40-60cm	24	15%

1.1.11 Table 30/6.5: Woodland Edge South Mix as shown on Drawings - CODWBD15EMER-AMEY-ELS-XX-DR-LL-001, CODWBD15EMER-AMEY-ELS-XX-DR-LL-002 & CODWBD15EMER-AMEY-ELS-XX-DR-LL-003

1.1.12 Stock to be containerised if planting is to take place outside of growing season. Woodland Edge South mix to be supplied in 2L pots as shown on drawings CODWBD15EMER-AMEY-ELS-XX-DR-LL-005

Latin Name	Specification	Height	Number	Mix
Viburnum opulus	+1 Transplant: BR	40-60cm	25	10%
Cornus sanguinea	+1 Transplant: BR	40-60cm	25	10%
Crataegus monogyna	+1 Transplant: BR	40-60cm	49	20%
Corylus avellana	+1 Transplant: BR	40-60cm	49	20%
Prunus avium	+1 Transplant: BR	40-60cm	37	15%
Salix caprea	+1 Transplant: BR	40-60cm	37	15%
Rosa Canina	+1 Transplant: BR	40-60cm	25	10%

1.1.1 Table 30/6.6: Dimensions for Planting Pits

Type	Dimensions of excavation W x W x D (mm)	Depth of cultivation at the base of pits or trenches (mm)
Select Standard Trees	Measurement of rootball plus 400 in each direction	200
Whips	450 x 450 x 450	150

Appendix 30/7 Grass and Wildflower

Action Number	Sub-Clause Reference	Specification Amendment
1	3007.1	The grass & wildflower areas to be maintained are scheduled in Appendix 30/7. Prior to any cutting operation all stones or other harmful material from whatever source which may damage grass cutting plant or create a possible hazard to persons or property shall be removed off site. All litter from grass cutting areas shall be removed off site prior to grass cutting. Any movable obstructions such as seats and litterbins shall be removed to facilitate cutting and replaced prior to leaving the site.
2	3007.3	Grassed & Wildflower areas shall be cut to the following heights: For Proposed Meadows (N5 Long Season Meadow) – Establishment Period Years 0-1 (0-12 months) Cut down to 70-100mm. Early cuts during establishment period with final cut taking place late October to allow for suitable flowering and self seeding period to take place. If grass is overtaking meadow an additional cut may be required. Arisings shall be shaken and removed off site. Maintenance Period Years 1-10 (12-120 months) Allow flowering and self seeding period to take place before cutting down to 70-100mm in early March and allow flowering until mid October. If grass is overtaking meadow an additional cut may be required. If possible lightly mow the sward down to 70-100mm as required throughout the winter months until March.
3	3007.5	The grass cutting operation shall include cutting around all obstacles such as trees, posts and signs. Strimmers may be used where appropriate. Areas around obstacles shall be cut to the same height as specified for the surrounding grassed areas, but no cutting shall be carried out within the distance from individual plants
4	3007.6	Mowing operations shall avoid spillage of debris such as stones onto carriageways or footways. Grass clippings and arisings lying on roads, footpaths, car parks, drains and other hard surfaces shall be immediately swept up and removed off Site. Grass clippings and arisings on all other areas shall be dispersed evenly over the sward, unless specified otherwise in this Clause
5	3007.7	During periods when ground conditions are so wet as to prevent grass cutting without causing damage to the surface or producing divots, operations shall cease and shall recommence only when ground and weather conditions are suitable.

Action Number	Sub-Clause Reference	Specification Amendment
6	3007.17	Grass verges cutting (N14 Flowering Lawn) requirements shall be as follows or as otherwise stated in Appendix 30/7: Establishment Period Years 0-1 (0-12 months) First cut early in the growing season to 30mm. Remove arisings. Visibility splays and verges to 25-50mm when grass reaches 75mm. Maintenance Period Years 1-10 (12-120 months) Cut down to 50-70mm at least three times per year. Remove arisings. If possible lightly mow the sward down to 70-100mm as required throughout the winter months until March.
7	3007.20	Additional selective cuts shall be undertaken if required to maintain visibility of road signs. The areas subject to additional selective cuts shall be extended beyond the minimum area required to maintain visibility in order that they appear naturalistic with smoothly curving edges, avoiding straight lines and abrupt angles.
8	Inserted clause	Invasive species, in the first instance, should be removed following correct procedures and all necessary protections, without using herbicides if possible. Physical removal methods, such as manual pulling, cutting, or mowing, should be employed to minimize environmental impact. Additionally, it is important to monitor the area regularly to ensure that the invasive species do not reestablish. In cases where physical removal is not feasible or effective, the use of targeted, environmentally friendly herbicides may be considered as a last resort, ensuring compliance with local regulations and guidelines. Restoration of native vegetation should follow removal efforts to promote ecological balance and prevent re-invasion.
9	3007.29	Spot herbicide treatment in accordance with sub-Clause 3007.29 may be carried out at an appropriate frequency in all seeded areas to eliminate undesirable broadleaf weed species, including: • Japanese knotweed • Himalayan balsam • Giant hogweed • And any other invasive or notifiable weed or harmful plant species

Appendix 30/8 Watering

Action Number	Sub-Clause Reference	Specification Amendment
1	3008.5	The Company shall water all planting including seeded areas for the Establishment Period at a frequency necessary to ensure establishment and survival.
2	3008.6	Additional watering in accordance with sub-Clause 3008.7 may be required for all planted trees in periods of abnormally dry conditions.
3	Inserted Clause	To ensure successful establishment each planted tree will require watering. A three year watering regime will be instigated. This will be: a) Year 1 the irrigation/aeration pipe will be filled once per fortnight from the start of May through to the end of September. During extended periods of dry and hot weather this frequency may need to be increased to once a week. b) Year 2 the tree will receive a minimum of one watering visit per week from the start of May through to the end of September. 25 litres of clean water will be carefully tipped into the inlet of the irrigation/aeration pipe per visit, per tree. c) Year 3 for each tree monitor soil moisture on a monthly basis and during periods of extended dry weather and irrigate as required.

Appendix 30/9 Establishment Maintenance for Planting

Action Number	Sub-Clause Reference	Specification Amendment
1	3009.1	All planting and planting areas shall be maintained for the Establishment Period in accordance with sub-clauses 3009.2 to 3009.25.
2	3009.2	Plants shall be inspected during each visit to undertake maintenance operations and any which may have been subjected to frost heave or wind rock shall be straightened to an upright position and the ground re-firmed. Inspection of tree stakes, guards and ties and any damage to be repaired or replaced.
3	3009.3	Stakes, tubes, guards and their ties shall be inspected twice per year in October and March and adjusted to allow for the growth of each plant. Any damaged items shall be removed off Site and replaced with new items in accordance with Clause 3006.
4	3009.4	Stakes and ties that are no longer required shall be offered to the Overseeing Organisation for re-use. Where the Overseeing Organisation declines the offer the Company shall dispose of them to a licensed disposal facility.
5	3009.9	Plant circles shall be defined as a 1m free strip around an individual tree, within which weed control operations (hand-digging) shall be carried out.
7	3009.21	Where organic mulch was applied after planting, the Contractor shall inspect the depth of mulch once per year in March. If the mulch is less than an even depth of 75mm, new mulch to sub-Clause 3006.55 shall be laid to restore the depth to 75mm.
8	3009.25	All trees shall be inspected and maintained annually

Appendix 30/10 Maintenance of Established Trees and Shrubs

Action No.	Sub-Clause Reference	Specification Amendment
1	3010.1	All established trees and shrubs shall be maintained for the duration of the period of the New Works in accordance with sub-clauses 3010.2 - 3010.71.
2	3010.4	Healthy arisings shall be dealt with in accordance with one or more of items (iv) to (ix) of sub-Clause 3010.4 in compliance with the Company's Quality Plan and associated method statements.
3	3010.45	Tree size categories shall be in compliance with the Company's Quality Plan and associated method statements.
4	3010.56	Crown reduction or reshaping shall be in compliance with the Contractor's Quality Plan and associated method statements.
5	3010.57	Straight felling shall be in compliance with the Contractor's Quality Plan and associated method statements.
6	3010.58	Sectional felling shall be in compliance with the Contractor's Quality Plan and associated method statements.
7	3010.60	Stump treatment shall be in compliance with the Company's Quality Plan and associated method statements.
8	3010.62	Stump removal shall be in compliance with the Company's Quality Plan and associated method statements.
9	3010.63	All arisings shall be disposed of off the New Works Site shall be in compliance Company's Quality Plan and associated method statements.
10	3010.68	Undesirable scrub species shall be controlled in accordance with sub-Clause 3010.1 and where identified as being required by the Company's regular inspections.
11	3010.71	Operations in accordance with sub-clause 3010.71 shall be carried out in compliance with sub-Clause 3010.1 and the Company's Quality Plan and associated method statements.
12	Inserted Clause	Existing trees in woodland to be retained and protected according to BS5837:2012. Existing woodland to be managed to include, but not limited to: clearance of brambles, removal of dead, dying or diseased trees according to correct arboricultural standards, removal / adjustment of tree ties / stakes / guards.

References

BS 3936-1: 1992 - Nursery Stock Specification for Trees and Shrubs, BSI Standards Publications

BS 4043:1989 Recommendations for Transplanting Root Balled Trees, BSI Standards Publication

BS 4428: 1989 Code of practice for general landscape operations (excluding hard surfaces), BSI Standards Publications

BS 5837: 2012 – Trees in relation to design, demolition and construction – Recommendations, BSI Standards Publication

BS 8545: 2014 - Trees: from nursery to independence in the landscape – Recommendations, BSI Standards Publication

Joint Council of Landscape Industries specification

Manual of Contract Documentation for Highways Works, Volume 1 Specification for Highways Works, Series 3000 Landscape and Ecology

Horticultural Trades Association National Plant Specification