

Ganton Close - Specification

06 June 2017

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C20 Demolition

To be read with Preliminaries/ General conditions

GENERAL REQUIREMENTS

- 120 EXTENT OF DECONSTRUCTION/ DEMOLITION
- General: Subject to retention requirements specified elsewhere, deconstruct/ demolish structures down to foundation level: Break up and dig out foundations.
- 130 GROUNDWORKS
- Old foundations, slabs and the like: Break out in locations and to the extents stated.
 - Contaminated material: Remove, and carry out remediation required by the Enforcing Authority.
- 140 BENCH MARKS
- Unrecorded bench marks and other survey information: Give notice when found. Do not remove marks or destroy the fabric on which they are found.

SERVICES AFFECTED BY DECONSTRUCTION/ DEMOLITION

- 210 SERVICES REGULATIONS
- Work carried out to or affecting new and/ or existing services: Carry out in accordance with the byelaws and/ or regulations of the relevant Statutory Authority.
- 220 LOCATION OF SERVICES
- Services affected by deconstruction/ demolition work: Locate and mark positions.
 - Mains services marking: Arrange with the appropriate authorities for services to be located and marked.
 - Marking standard: In accordance with National Joint Utilities Group 'Guidelines on the positioning and colour coding of underground utilities' apparatus'.
- 250 LIVE FOUL AND SURFACE WATER DRAINS
- Drains and associated manholes, inspection chambers, gullies, vent pipes and fittings:
 - Protect; maintain normal flow during deconstruction/ demolition.
 - Make good any damage arising from deconstruction/ demolition work.
 - Leave clean and in working order at completion of deconstruction/ demolition work.
 - Other requirements: n/a.
- 270 SERVICES TO BE RETAINED
- Damage to services: Give notice, and notify relevant service authorities and/ or owner/ occupier regarding damage arising from deconstruction/ demolition.
 - Repairs to services: Complete as directed, and to the satisfaction of the service authority or owner.

DECONSTRUCTION/ DEMOLITION WORK

- 310 WORKMANSHIP
- Standard: Demolish structures in accordance with BS 6187.
 - Operatives:
 - Appropriately skilled and experienced for the type of work.
 - Holding, or in training to obtain, relevant CITB Certificates of Competence.
 - Site staff responsible for supervision and control of work: Experienced in the assessment of risks involved and methods of deconstruction/ demolition to be used.
- 320 GAS OR VAPOUR RISKS
- Precautions: Prevent fire and/ or explosion caused by gas and/ or vapour from tanks, pipes, etc.
- 330 DUST CONTROL
- General: Reduce airborne dust by periodically spraying deconstruction/ demolition works with an appropriate wetting agent. Keep public roadways and footpaths clear of mud and debris.
 - Lead dust: Submit method statement for control, containment and clean-up regimes.
- 340 HEALTH HAZARDS
- Precautions: Protect site operatives and general public from hazards associated with vibration, dangerous fumes and dust arising during the course of the Works.
- 350 ADJOINING PROPERTY
- Temporary support and protection: Provide. Maintain and alter, as necessary, as work proceeds. Do not leave unnecessary or unstable projections.
 - Defects: Report immediately on discovery.
 - Damage: Minimize. Repair promptly to ensure safety, stability, weather protection and security.
 - Support to foundations: Do not disturb.
- 360 STRUCTURES TO BE RETAINED
- Extent: See dwgs.
 - Parts which are to be kept in place: Protect.
 - Interface between retained structures and deconstruction/ demolition: Cut away and strip out with care to minimize making good.
- 370 PARTLY DEMOLISHED STRUCTURES
- General: Leave in a stable condition, with adequate temporary support at each stage to prevent risk of uncontrolled collapse. Make secure outside working hours.
 - Temporary works: Prevent overloading due to debris.
 - Access: Prevent access by unauthorized persons.
- 380 DANGEROUS OPENINGS
- General: Provide guarding at all times, including outside of working hours. Illuminate during hours of darkness.
 - Access: Prevent access by unauthorized persons.
- 410 UNFORESEEN HAZARDS
- Discovery: Give notice immediately when hazards such as unrecorded voids, tanks, chemicals, are discovered during deconstruction/ demolition.
 - Removal: Submit details of proposed methods for filling, removal, etc.

450 SITE CONDITION AT COMPLETION

- Debris: Clear away and leave the site in a tidy condition.
- Other requirements: n/a.

MATERIALS ARISING

510 CONTRACTOR'S PROPERTY

- Components and materials arising from the deconstruction/ demolition work: Property of the Contractor except where otherwise provided.
- Action: Remove from site as work proceeds where not to be reused or recycled for site use.

520 RECYCLED MATERIALS

- Materials arising from deconstruction/ demolition work: Can be recycled or reused elsewhere in the project, subject to compliance with the appropriate specification and in accordance with any site waste management plan.
- Evidence of compliance: Submit full details and supporting documentation.
 - Verification: Allow adequate time in programme for verification of compliance.

D20 Excavating and filling

To be read with Preliminaries/General conditions

GENERALLY/THE SITE

150 EXISTING SERVICES, FEATURES AND STRUCTURES

- Services: See section A12 for locations.
- Site features to be retained: See section A12 for details.
- Structures: See section A34 for details of protection.

CLEARANCE/EXCAVATING

168 SITE CLEARANCE

- Timing: Before topsoil stripping, if any.
- General: Clear site of rubbish, debris and vegetation. Do not compact topsoil.
- Treatment: Apply a suitable non-residual herbicide to areas to receive planting. .

170 REMOVING SMALL TREES, SHRUBS, HEDGES AND ROOTS

- Identification: Clearly mark trees to be removed.
- Small trees, shrubs and hedges: Cut down
- Roots: Grub up and dispose of without undue disturbance of soil and adjacent areas
- Safety: Comply with HSE/ Arboriculture and Forestry Advisory Group safety leaflets.

220 STRIPPING TOPSOIL

- General: Before beginning general excavation or filling, strip topsoil from areas where there will be regrading, buildings, pavings/ roads and other areas shown on drawings.
- Depth:
 - Remove to an average depth of 200mm.
 - Give notice where the depth of topsoil is difficult to determine.
- Handling: Handle topsoil for reuse or sale in accordance with clause 225.
- Around trees: Do not remove topsoil from below the spread of trees to be retained.
- Site storage: Keep separate from excavated sub-soil.

221 TREATING TOPSOIL

- Treatment: Apply a suitable translocated nonresidual herbicide.
- Timing: Not less than two weeks before excavating topsoil.

225 HANDLING TOPSOIL

- Standard: To BS 3882.
- Aggressive weeds:
 - Species: Included in the Weeds Act, section 2 or the Wildlife and Countryside Act, Schedule 9, part II.
 - Give notice: Obtain instructions before moving topsoil.
- Contamination: Do not mix topsoil with:
 - Subsoil, stone, hardcore, rubbish or material from demolition work.
 - Other soil or material containing aggressive weeds, sharps, plastics and non soil forming materials and notifiable animal or plant diseases.
 - Oil, fuel, cement or other substances harmful to plant growth.
 - Other classifications of topsoil.
- Multiple handling: Keep to a minimum. Use topsoil immediately after stripping.

240 ADJACENT EXCAVATIONS

- Requirement: Where an excavation encroaches below a line drawn at an angle from the nearest formation level of another higher excavation, the lower excavation, all work within it and backfilling thereto, must be completed before the higher excavation is made.
- Angle of line below horizontal: 45°.
- Backfill material: Hardcore filling.

244 EXCAVATIONS ADJACENT TO EXISTING FOUNDATIONS

- Prior to commencing excavation:
 - Excavate trial pits adjacent to existing foundations to determine extent and formation levels.
 - Allow for inspection of trial pits.
 - Allow time for amendment of details if required.
Time period: 5 working days .
- Backfill material to new excavation: as per bill item .

250 PERMISSIBLE DEVIATIONS FROM FORMATION LEVELS

- Beneath mass concrete foundations: ± 25 mm.
- Beneath ground bearing slabs and r.c. foundations: ± 15 mm.
- Embankments and cuttings: ± 50 mm.
- Ground abutting external walls: ± 50 mm, but such as to ensure that finished level is not less than 150 mm below dpc.

260 INSPECTING FORMATIONS

- Give notice: Make advance arrangements for inspection of formations for foundations and filling foundations and pavings.
 - Notice (minimum): 3 days.
- Preparation: Just before inspection remove the last 150 mm of excavation.
- Trim to required profiles and levels.
 - Loose material: Remove.
- Seal: Within 4 hours of inspection, seal formations with concrete.

270 FOUNDATIONS GENERALLY

- Give notice if:
 - A natural bearing formation of undisturbed subsoil is not obtained at the depth shown on the drawings.
 - The formation contains soft or hard spots or highly variable material.

280 TRENCH FILL FOUNDATIONS

- Excavation: Form trench down to formation in one operation.
- Safety: Prepare formation from ground level.
- Inspection of formations: Give notice before commencing excavation.
 - Period of notice: three working days.
- Shoring: Where inspection of formation is required, provide localised shoring to suit ground conditions.
- Concrete fill: Place concrete immediately after inspection and no more than four hours after exposing the formation.

290 FOUNDATIONS IN MADE UP GROUND

- Depth: Excavate down to a natural formation of undisturbed subsoil.
- Discrepancy: Give notice if this is greater or less than depth given.

310 UNSTABLE GROUND

- Generally: Ensure that the excavation remains stable at all times.
- Give notice: Without delay if any newly excavated faces are too unstable to allow earthwork support to be inserted.
- Take action: If instability is likely to affect adjacent structures or roadways, take appropriate emergency action.

330 UNRECORDED FEATURES

- Give notice: If unrecorded foundations, beds, voids, basements, filling, tanks, pipes, cables, drains, manholes, watercourses, ditches, etc. not shown on the drawings are encountered.

370 UNDERGROUND STRUCTURES IN LANDSCAPE AREAS

- Generally: Remove walls, roads, foundations, disused services, drains, manholes and the like to minimum depth.
- Minimum depth below finished levels:
 - Grass, ground cover and perennial planting: 500 mm.
 - Shrub planting: 750 mm.
 - Within 2 m of tree planting: 1000 mm.
- Walls and slabs remaining: In every 10 m² of wall or slab, make a drainage hole at least 600 mm diameter.

DISPOSAL OF MATERIALS

410 EXCAVATED TOPSOIL STORAGE

- Storage: Stockpile in temporary storage heaps reuse in proposed planting beds .

420 TOPSOIL STORAGE HEAPS

- Location: to be confirmed.
- Standard: To BS 3882.
- Height (maximum): not more than 1 metre high.
- Protection:
 - Do not place any other material on top of storage heaps.
 - Do not allow construction plant to pass over storage heaps.
 - Prevent compaction and contamination.

421 TOPSOIL STORAGE HEAP TREATMENT

- Treatment: Apply a suitable herbicide at appropriate times to prevent seeding of weeds .

441 SURPLUS SUBSOIL

- Excavated material: Stockpile in temporary storage heaps.
- Retained material: Spread and level surplus subsoil on site.
 - Locations: as per dwgs .
 - Protected areas: Do not raise soil level within root spread of trees that are to be retained.
- Remaining material: Remove from site.

450 WATER

- Generally: Keep all excavations free from water until:
 - Formations are covered.
 - Below ground constructions are completed.
 - Basement structures and retaining walls are able to resist leakage, water pressure and flotation.
- Drainage: Form surfaces of excavations and fill to provide adequate falls.
- Removal of water: Provide temporary drains, sumps and pumping as necessary. Do not pollute watercourses with silt laden water.

- 454 GROUND WATER LEVEL, SPRING OR RUNNING WATER
- Give notice: If it is considered that the excavations are below the water table.
 - Springs/ Running water: Give notice immediately if encountered.

FILLING

- 500 PROPOSED FILL MATERIALS
- Details: Submit full details of proposed fill materials to demonstrate compliance with specification, including:
 - Type and source of imported fill.
 - Proposals for processing and reuse of material excavated on site.
 - Test reports as required elsewhere.
 - Timing: At least 21 days before starting filling.
- 510 HAZARDOUS, AGGRESSIVE OR UNSTABLE MATERIALS
- General: Do not use fill materials which would, either in themselves or in combination with other materials or ground water, give rise to a health hazard, damage to building structures or instability in the filling, including material that is:
 - Frozen or containing ice.
 - Organic.
 - Contaminated or noxious.
 - Susceptible to spontaneous combustion.
 - Likely to erode or decay and cause voids.
 - With excessive moisture content, slurry, mud or from marshes or bogs.
 - Clay of liquid limit exceeding 80 and/or plasticity index exceeding 55.
 - Unacceptable, class U2 as defined in the Highways Agency 'Specification for highway works', clause 601.
- 520 FROST SUSCEPTIBILITY
- General: Except as allowed below, fill must be non frost-susceptible as defined in Highways Agency 'Specification for Highway Works', clause 801.8.
 - Test reports: If the following fill materials are proposed, submit a laboratory report confirming they are non frost- susceptible:
 - Fine grained soil with a plasticity index less than 20%.
 - Coarse grained soil or crushed granite with more than 10% retained on a 0.063 mm sieve.
 - Crushed chalk.
 - Crushed limestone fill with average saturation moisture content in excess of 3%.
 - Burnt colliery shale.
 - Frost-susceptible fill: May only be used:
 - At depths below the finished ground surface greater than: 500 mm.
 - Within the external walls of buildings below spaces that will be heated. Protect from frost during construction.
 - Where frost heave will not affect structural elements.
- 530 PLACING FILL
- Surfaces of excavations and areas to be filled: Free from loose soil, topsoil, organic material, rubbish and standing water.
 - Freezing conditions: Do not place fill on frozen surfaces. Remove material affected by frost. Replace and recompact if not damaged after thawing.
 - Adjacent structures, membranes and buried services:
 - Do not overload, destabilise or damage.
 - Submit proposals for temporary support necessary to ensure stability during filling.
 - Allow 14 days (minimum) before backfilling against in situ concrete structures.
 - Layers: Place so that only one type of material occurs in each layer.
 - Earthmoving equipment: Vary route to avoid rutting.

535 **COMPACTION GENERALLY**

- General: Compact fill not specified to be left loose as soon as possible after placing.
- After compaction: Surface of each layer must be well closed, showing no movement under compaction plant, and without cracks, holes, ridges, loose material and the like.
- Defective areas: Remove and recompact to full thickness of layer using new material.

540 **BENCHING IN FILL**

- Adjacent areas: If, during filling the difference in level between adjacent areas of filling exceeds 600 mm, cut into edge of higher filling to form benches 600 mm minimum width and height equivalent to depth of a layer of compacted filling.
- New filling: Spread and compact to ensure maximum continuity with previous filling.

610 **COMPACTED FILLING FOR LANDSCAPE AREAS**

- Fill: Material capable of compaction by light earthmoving plant.
- Filling: Layers not more than 200 mm thick. Lightly compact each layer to produce a stable soil structure.

615 **LOOSE TIP FILLING FOR LANDSCAPE AREAS**

- Filling: Do not firm, consolidate or compact when laying. Tip and grade to approximate levels in one operation with minimum of trafficking by plant.

617 **HIGHWAYS AGENCY TYPE 1 UNBOUND MIXTURE**

- Fill: To Highways Agency 'Specification for highway works', clauses 801 and 803:
 - Crushed rock (other than argillaceous rock).
 - Crushed concrete.
 - Recycled aggregates.
 - Crushed non-expansive slag.
 - Well-burned non-plastic colliery shale.
- Amendments to requirements in Highways Agency 'Specification for highway works': None.
- Filling: To Highways Agency 'Specification for highway works', clause 802.

650 **PROTECTION OF COMPACTED FILLING**

- Temporary protective filling: Before allowing construction traffic, raise level of compacted cohesive soil filling at least 150 mm above formation level using properly compacted temporary filling.
- Removal: Remove temporary protective filling from site before permanent construction.

700 **BACKFILLING AROUND FOUNDATIONS**

- Under oversite concrete and pavings: Hardcore as clause 710.
- Under grassed or soil areas: Material excavated from the trench, laid and compacted in 300 mm maximum layers.

710 HARDCORE FILLING

- Fill: Granular material, free from excessive dust, well graded, all pieces less than 75 mm in any direction, minimum 10% fines value of 50 kN when tested in a soaked condition to BS 812-111, and in any one layer only one of the following:
 - Crushed rock (other than argillaceous rock) or quarry waste with not more binding material than is required to help hold the stone together.
 - Crushed concrete, crushed brick or tile, free from plaster, timber and metal.
 - Crushed non-expansive slag.
 - Gravel or hoggin with not more clay content than is required to bind the material together, and with no large lumps of clay.
 - Well-burned non-plastic colliery shale.
 - Natural gravel.
 - Natural sand.
- Filling: Spread and level in 150 mm maximum layers. Thoroughly compact each layer.

F10 Brick/ block walling

To be read with Preliminaries/ General conditions.

TYPES OF WALLING

110 CLAY FACING BRICKWORK FOR ALL WALLS

- Bricks: To BS EN 771-1.
 - Manufacturer: Contractor's choice.
 - Product reference: Colour to match existing brickwork - sample to be approved by CA.
 - Recycled content: Contractor's choice.
 - Special shapes: None.
- Mortar: As section Z21.
 - Standard: To BS EN 998-2.
 - Mix: 1:1:5-6 cement:lime:sand.
 - Additional requirements: Coloured mortar to match existing walls.
- Bond: English.
- Joints: Bucket handle.
- Features: 2 rows of engineering brick from ground level. 2no. coats of approved water-proofing agent applied to back face of wall.

WORKMANSHIP GENERALLY

430 CONDITIONING OF CLAY AND CALCIUM SILICATE BRICKS AND CLAY BLOCKS

- Bricks and blocks delivered warm from manufacturing process: Do not use until cold.
- Absorbent bricks in warm weather: Wet to reduce suction. Do not soak.

500 LAYING GENERALLY

- Mortar joints: Fill vertical joints. Lay bricks, solid and cellular blocks on a full bed.
- AAC block thin mortar adhesive and gypsum block adhesive joints: Fill vertical joints. Lay blocks on a full bed.
- Clay block joints:
 - Thin layer mortar: Lay blocks on a full bed.
 - Interlocking perpend: Butted.
- Bond where not specified: Half lap stretcher.
- Vertical joints in brick and concrete block facework: Even widths. Plumb at every fifth cross joint.

535 HEIGHT OF LIFTS IN WALLING USING CEMENT GAUGED OR HYDRAULIC LIME MORTAR

- Quoins and advance work: Rack back.
- Lift height (maximum): 1.2 m above any other part of work at any time.
- Daily lift height (maximum): 1.5 m for any one leaf.

560 COURSING BRICKWORK

- Gauge: Four brick courses including bed joints to 300 mm.

561 COURSING BRICKWORK WITH EXISTING

- Gauge: Line up with existing brick courses.

635 JOINTING

- Profile: Consistent in appearance.

665 POINTING TO WALLING

- Joint preparation: Remove debris. Dampen surface.
- Mortar: As section Z21.
 - Standard: To BS EN 998-2.
 - Mix: 1:1:6 cement:lime:sand.
 - Additional requirements: Coloured mortar to match existing.
- Profile: Bucket handle.

690 ADVERSE WEATHER

- General: Do not use frozen materials or lay on frozen surfaces.
- Air temperature requirements: Do not lay bricks/ blocks:
 - In cement gauged mortars when at or below 3°C and falling or unless it is at least 1°C and rising.
 - In hydraulic lime:sand mortars when at or below 5°C and falling or below 3°C and rising.
 - In thin joint mortar glue when outside the limits set by the mortar manufacturer.
- Temperature of walling during curing: Above freezing until hardened.
- Newly erected walling: Protect at all times from:
 - Rain and snow.
 - Drying out too rapidly in hot conditions and in drying winds.

ADDITIONAL REQUIREMENTS FOR FACEWORK

710 THE TERM FACEWORK

- Definition: Applicable in this specification to all brick/ block walling finished fair.
 - Painted facework: The only requirement to be waived is that relating to colour.

750 COLOUR CONSISTENCY OF MASONRY UNITS

- Colour range: Submit proposals of methods taken to ensure that units are of consistent and even appearance within deliveries.
- Conformity: Check each delivery for consistency of appearance with previous deliveries and with approved reference panels; do not use if variation is excessive.
- Finished work: Free from patches, horizontal stripes and racking back marks.

760 APPEARANCE

- Brick/ block selection: Do not use units with damaged faces or arrises.
- Cut masonry units: Where cut faces or edges are exposed cut with table masonry saw.
- Quality control: Lay masonry units to match relevant reference panels.
 - Setting out: To produce satisfactory junctions and joints with built-in elements and components.
 - Coursing: Evenly spaced using gauge rods.
- Lifts: Complete in one operation.
- Methods of protecting facework: Submit proposals.

780 GROUND LEVEL

- Commencement of facework: Not less than 150 mm below finished level of adjoining ground or external works level.

830 CLEANLINESS

- Facework: Keep clean.
- Mortar on facework: Allow to dry before removing with stiff bristled brush.
- Removal of marks and stains: Rubbing not permitted.

Q10 Kerbs/ edgings/ channels/ paving accessories

To be read with Preliminaries/General conditions.

TYPES OF KERBS/EDGINGS AND CHANNELS

- 111 PROPRIETARY PRECAST CONCRETE Conservation kerb used as coping to wall
- Standard: To BS EN 1340.
 - Manufacturer: Marshalls.
 - - Product reference: Conservation kerb 205x255mm RK7000000.
 - Size (width x height x length): 205x255x915mm.
 - Special shapes: n/a.
 - Finish: n/a.
 - Colour: Silver Grey.
 - Bedding: Cement mortar.
 - Joints generally: Narrow mortar.
 - Sealant movement joints: Not required.
 - Accessories: None.
 - Mitre joints at corners
- 111A PROPRIETARY PRECAST CONCRETE ROAD KERB CHANNEL
- Standard: To BS EN 1340.
 - Manufacturer: Marshalls.
 - - Product reference: RK3050000.
 - Size (width x height x length): 125x150x914mm.
 - Special shapes: n/a.
 - Finish: n/a.
 - Colour: Natural.
 - Bedding: Cement mortar.
 - Joints generally: Narrow mortar.
 - Sealant movement joints: Not required.
 - Accessories: None.
 - Mitre joints at corners
- 112A PRECAST CONCRETE EDGINGS
- Standard: To BS EN 1340.
 - Size (width x height x length): 150x50x900mm.
 - Type: Pin kerb.
 - Special shapes: As appropriate.
 - Other requirements: Concrete foundations as clause 530.
- 130 CLAY BRICK EDGINGS
- Bricks:
 - Manufacturer: Marshalls.
 - Product reference: Keyblok - PV2050250.
 - Special shapes: none.
 - Recycled content: as manufactured.
 - Colour: Natural.
 - Bedding: Concrete.
 - Joints generally: Tooled mortar.
 - Sealant movement joints: None.
 - Accessories: None.

LAYING

510 LAYING KERBS, EDGINGS AND CHANNELS

- Cutting: Neat, accurate and without spalling. Form neat junctions.
 - Long units (450 mm and over) minimum length after cutting: 300 mm.
 - Short units minimum length after cutting: The lower of one third of their original length or 50 mm.
- Bedding of units: Positioned true to line and levelled along top and front faces, in a mortar bed on accurately cast foundations or on a race of fresh concrete.
- Securing of units: After bedding has set, secured with a continuous haunching of concrete or on a race of fresh concrete with backing concrete cast monolithically.

520 ADVERSE WEATHER

- Conditions: Do not construct if the temperature is below 3°C on a falling thermometer or 1°C on a rising thermometer. Adequately protect foundations, bedding and haunching against frost and rapid drying by sun and wind.

530 CONCRETE FOR FOUNDATIONS, RACES AND HAUNCHING

- Standard: To BS 8500-2.
- Designated mix: Not less than GEN0 or Standard mix ST1.
- Workability: Very low.

540 CEMENT MORTAR BEDDING

- General: To section Z21.
- Mix (Portland cement:sand): 1:3.
 - Portland cement: Class CEM I 42.5 to BS EN 197-1.
 - Sand: to BS EN 12620, grade 0/4 or 0/2 (MP).
- Bed thickness: 12-40 mm.

547 BEDDING/BACKING OF UNITS ON FRESH CONCRETE RACES

- Standard: To BS 7533-6.

560 HAUNCHING DOWELS

- Dowels: Steel bar to BS 4482.
 - Size: 12 mm diameter, 150 mm long.
- Installation of dowels: Vertically into foundation while concrete is plastic.
 - Centres: 450 mm.
 - Distance from back face of kerb: 50 mm.
 - Projection: 75 mm.
- Haunching: Rectangular cross section, cast against formwork, fully enclosing and protecting dowels.

610 ANGLE KERBS

- Usage: Internal and external 90° changes of direction.
- Cutting of mitres: Not permitted.

620 ACCURACY

- Deviations (maximum):
 - Level: ± 6 mm.
 - Horizontal and vertical alignment: 3 mm in 3 m.

625 REGULARITY OF PAVED SURFACES

- Maximum undulation of (non-tactile) paving surface: 3 mm.
 - Method of measurement: Under a 1 m straight edge placed anywhere on the surface (where appropriate in relation to the geometry of the surface).
- Difference in level between adjacent units (maximum):
 - Joints flush with the surface: Twice the joint width (with 5 mm max difference in level).
 - Recessed, filled joints: 2 mm.
 - Recess depth (maximum): 5 mm.
 - Unfilled joints: 2 mm.
- Sudden irregularities: Not permitted.

630 NARROW MORTAR JOINTS

- Jointing: Ends of units buttered with bedding mortar as laying proceeds. Joints completely filled, tightly butted and surplus mortar removed immediately.
 - Joint width: 3 mm.

640 TOOLED MORTAR JOINTS

- Jointing: Ends of units buttered with bedding mortar as laying proceeds. Joints completely filled and tooled to a neat flush profile.
 - Joint width: 6 mm.

Q20 Granular sub-bases to roads/pavings

To be read with Preliminaries/ General conditions.

- 130 HERBICIDES
- Type: Residual.
 - Application: To subgrade of To subgrade of surfaced areas.
- 140 EXCAVATION OF SUBGRADES
- Final excavation to formation or subformation level: Carry out immediately before compaction of subgrade.
 - Soft spots and voids: Give notice.
 - Old drainage and service trenches: Give notice.
 - Wet conditions: Do not excavate or compact when the subgrade may be damaged or destabilized.
- 145 PREPARATION AND COMPACTION OF SUBGRADES
- Timing: Immediately before placing sub-base.
 - Soft or damaged areas: Excavate and replace with sub-base material, compacted in layers 300 mm (maximum) thick.
 - Compaction: Thoroughly, by roller or other suitable means, adequate to resist subsidence or deformation of the subgrade during construction and of the completed roads/ paving when in use. Take particular care to compact fully at intrusions, perimeters and where local excavation and backfilling has taken place.
- 180 NOTICE
- Give notice: After preparation and compaction of subgrades and on completion of compaction.
 - Period of notice: 2 working days.
- 210 HIGHWAYS AGENCY TYPE 1 UNBOUND MIXTURE FOR SUB-BASE
- Material: Type 1 unbound mixture to Highways Agency 'Specification for highway works', clauses 801 and 803.
 - Recycled aggregate: Permitted.
- 211 GRANULAR MATERIAL
- Quality: Of a known suitability for use in sub-bases, free from excessive dust, well graded, all pieces less than 75 mm in any direction, minimum 10% fines value of 50 kN when tested in a soaked condition to BS 812-111 or a resistance to fragmentation of LA50 for the Los Angeles test to BS EN 1097-2, and in any one layer only one of the following:
 - Crushed rock (other than argillaceous rock) or quarry waste with not more binding material than is required to help hold the stone together.
 - Crushed concrete, crushed brick or tile, free from plaster, timber and metal.
 - Gravel or hoggin with not more clay content than is required to bind the material together, and with no large lumps of clay.
 - Natural gravel.
 - Natural sand.
 - Filling: Spread and levelled in 150 mm maximum layers, each layer thoroughly compacted.
- 230 PLACING GRANULAR MATERIAL GENERALLY
- Preparation: Loose soil, rubbish and standing water removed.
 - Structures, membranes and buried services: Ensure stability and avoid damage.

241 LAYING GRANULAR SUB-BASES FOR VEHICULAR AREAS

- Proposals: Well in advance of starting work submit details of:
 - Maximum depth of each compacted layer.
 - Type of plant.
 - Minimum number of passes per layer.
- General: Spread and levelled in layers. As soon as possible thereafter compact each layer.
- At drainage fittings, inspection covers, perimeters and where local excavation and backfilling has taken place: Take particular care to compact fully.
- Defective areas: Remove loose, segregated or otherwise defective areas to the full thickness of the layer and lay and compact new material.
- Sub-base surface after compaction and immediately before overlaying: Uniformly well closed and free from loose material, cracks, ruts or hollows.

250 LAYING GRANULAR SUB-BASES FOR PEDESTRIAN AREAS

- General: Spread and levelled.
- Compaction:
 - Timing: As soon as possible after laying.
 - Method: By roller or other suitable means, adequate to resist subsidence or deformation of the sub-base during construction and of the completed paving when in use. Take particular care to compact fully at intrusions, perimeters and where local excavation and backfilling has taken place.

310 ACCURACY

- Permissible deviation from required levels, falls and cambers (maximum):
 - Subgrades:
 - Roads and parking areas: +20 -30 mm.
 - Footways and recreation areas: \pm 20 mm.
 - Sub-bases:
 - Roads and parking areas: +10 -30mm.
 - Footways and recreation areas: +10 -30mm.

330 COLD WEATHER WORKING

- Frozen materials: Do not use.
- Freezing conditions: Do not place fill on frozen surfaces. Remove material affected by frost. Replace and recompact if not damaged after thawing.

340 PROTECTION

- Sub-bases: As soon as practicable, cover with subsequent layers, specified elsewhere.
- Subgrades and sub-bases: Prevent degradation by construction traffic, construction operations and inclement weather.

Q25 Slab/brick/sett/cobble pavings

To be read with Preliminaries/ General conditions.

GENERAL

120A CONCRETE FLAG PAVING SYSTEM TO REAR GARDENS

- Standard: To BS EN 1338.
- Base: [100mm Type 1 or Existing sub-base where appropriate].
 - Preparation: [Spray with herbicide,remove any existing loose bedding material and compact].
- Bedding: [Compacted sand - Gf 85 0/4 (MP) Fine Aggregate to BS EN 12620:2002].
 - Nominal thickness: [25 mm].
- Flags: To BS 7263-1.
 - Manufacturer: [Contractors choice].
 - Product reference: [-].
 - Colour/ Finish: [Natural].
 - Method of manufacture: [Standard].
 - Nominal sizes: [500x500x50mm].
- Jointing: [Narrow, sand filled].
 - Width: [2-5 mm].
 - Bond: [As indicated on drawings]

130A KEYBLOK TO ROAD

- Subgrade improvement layer: Not required.
 - Compacted thickness: Not applicable.
- Granular sub-base: Highways Agency Type 1 unbound mixture, as section Q20.
 - Compacted thickness: 200 mm.
- Concrete base: Coated macadam as section Q22.
 - Thickness: 70mm.
- Paving units: Marshalls Keyblok- Charcoal - Ref PV5050500 .
- Bedding : Block paving sand bed.
 - Bond: Stretcher.
- Accessories: None.

130C MARKER BLOCKS TO PARKING AREAS

- Subgrade improvement layer: Not required.
 - Compacted thickness: Not applicable.
- Granular sub-base: as existing.
 - Compacted thickness: as existing.
- Concrete base: as existing.
 - Thickness: as existing.
- Paving units: Marshalls white Concrete Block Paving Marker Blocks Ref - PV5604200.
- Bedding : Block paving sand bed.
 - Bond: -.
- Accessories: None.

150 CONCRETE SETT PAVING SYSTEM TO PARKING AREAS

- Subgrade improvement layer: Not required.
 - Compacted thickness: Not applicable.
- Granular sub-base: 20mm open graded crushed rock.
 - Compacted thickness: 200mm depth.
- Base: Not required.
 - Thickness: Not required.
- Laying course: 50mm depth laying course using 6mm open graded crushed rock.
 - Accessories: None.
- Paving units: Concrete setts (Mistral Priora - Charcoal.
- Jointing: 6mm jointing using 6mm open graded crushed rock.
 - Bond: Stretcher bond.
- Accessories: None.

PRODUCTS

EXECUTION

620 ADVERSE WEATHER

- General:
 - Temperature: Do not lay or joint paving if the temperature is below 3°C on a falling thermometer or below 1°C on a rising thermometer.
 - Frozen materials: Do not use. Do not lay bedding on frozen or frost covered bases.
- Paving with mortar joints and/ or bedding:
 - Protect from frost damage, rapid drying out and saturation until mortar has hardened.
- Paving laid and jointed in sand:
 - Stockpiled bedding sand: Protect from saturation.
 - Exposed areas of sand bedding and uncompacted areas of sand bedded paving: Protect from heavy rainfall.
 - Saturated sand bedding: Remove and replace, or allow to dry before proceeding.
 - Laying dry-sand jointed paving in damp conditions: Brush in as much jointing sand as possible. Minimize site traffic over paving. As soon as paving is dry, top up joints and complete compaction.

625 LAYING PAVINGS - GENERAL

- Appearance: Smooth and even with regular joints and accurate to line, level and profile.
- Falls: To prevent ponding.
- Bedding of paving units: Firm so that rocking or subsidence does not occur or develop.
 - Bedding/ Laying course: Consistently and accurately graded, spread and compacted to produce uniform thickness and support for paving units.
- Slopes: Lay paving units upwards from the bottom of slopes.
- Paving units: Free of mortar and sand stains.
- Cutting: Cut units cleanly and accurately, without spalling, to give neat junctions with edgings and adjoining finishes.

630 LEVELS OF PAVING

- Permissible deviation from specified levels:
 - Generally: ± 6 mm.
- Height of finished paving above features:
 - At gullies: +6 to +10 mm.
 - At drainage channels and kerbs: +3 to +6 mm.

637 REGULARITY OF PAVED SURFACES

- Maximum undulations in the surface of pavings (except tactile paving surfaces) under a 1 m straight edge placed anywhere on the surface (where appropriate in relation to the geometry of the surface): 3 mm.
- Joints between paving units or utility access covers:
 - Joints flush with the surface: difference in level between adjacent units to be no more than twice the joint width (with a 5 mm max difference in level).
 - Recessed, filled joints: difference in level between adjacent units to be no greater than 2 mm; the recess to be no deeper than 5 mm.
 - Unfilled joints: difference in level between adjacent units to be no greater than 2 mm.
- Sudden irregularities: Not permitted.

645 PROTECTION

- Cleanliness: Keep paving clean and free from mortar droppings, oil and other materials likely to cause staining.
- Materials storage: Do not overload pavings with stacks of materials.
- Handling: Do not damage paving unit corners, arrises, or previously laid paving.
- Mortar bedded pavings: Keep free from traffic after laying:
 - Pedestrian traffic (minimum): 4 days.
 - Vehicular traffic (minimum): 10 days.
- Access: Restrict access to paved areas to prevent damage from site traffic and plant.

650 CEMENTITIOUS BASES AND SUB-BASES

- General: Protect from moisture loss, if not covered by another pavement course within 2 hours of completion.

655 CONDITION OF SUB-BASES/ BASES BEFORE SPREADING LAYING COURSE

- Trenches and excavation of soft or loose spots in subgrade: Fill and thoroughly compact.
- Granular surfaces: Lay and compact so as to be sound, clean, smooth and close-textured enough to prevent migration of bedding/ laying course materials into the sub-base during compaction and use, free from movement under compaction plant and free from compaction ridges, cracks and loose material.
- Prepared existing and new bound bases (roadbases): Sound, clean, free from rutting or major cracking. Remove sharp stones, projections and debris.
- Sub-base/ Roadbase level tolerances: To BS 7533-7, Annex A.
- Levels and falls: Accurate and within the specified tolerances.
- Drainage outlets: Within 0-10 mm of the required finished level.
- Features in sand bedded paving (including mortar bedded restraints and drainage ironwork): Complete to required levels; adequately bed and haunch in mortar.
- Sub-bases containing cement/ hydraulic binder: Cure for minimum times specified in BS 7533-4.

COMPLETION

915 COMPLETION OF PAVING WITH DRY SAND OR FINE AGGREGATE FILLED JOINTS

- Sand dressing: Leave a thin layer of dry jointing sand over the paving until opened to public access.
- Final compaction of the surface course: In accordance with BS 7533-3.
- Vacuum cleaning machines: Not allowed.

Q28 Topsoil and growing media

To be read with Preliminaries/ General conditions.

250 SUBSOIL SURFACE PREPARATION

- General: Excavate and/ or place fill to required profiles and levels, as section D20.
- Loosening:
 - Light and noncohesive subsoils: When ground conditions are reasonably dry, loosen thoroughly to a depth of 300 mm.
 - Stiff clay and cohesive subsoils: When ground conditions are reasonably dry, loosen thoroughly to a depth of 450 mm.
 - Rock and chalk subgrades: Lightly scarify to promote free drainage.
- Stones: Immediately before spreading topsoil, remove stones larger than 50 mm.
- Remove Arisings, contaminants and debris.

260 INSPECTING FORMATIONS

- Give notice: Before spreading topsoil for planting beds.
- Notice period: 7 days.

330 SURPLUS TOPSOIL TO BE RETAINED

- Generally: Spread and level on site:
 - Locations: Any areas where topsoil is required for new planting.
 - Protected areas: Do not raise soil level within root spread of trees that are to be retained.

335 SURPLUS TOPSOIL TO BE REMOVED

- Generally: Remove from site topsoil remaining after completion of all landscaping work.

340 IMPORTED TOPSOIL TO BS 3882

- Quantity: Provide as necessary to make up any deficiency of topsoil existing on site and to complete the work.
- Standard: To BS 3882.
- Classification: Multipurpose.
- Source: Submit proposals.
- Submit: Declaration of analysis in accordance with BS 3882, Annex E.
- Additional analyses: Not required.

355 COMPOST

- Standard: In accordance with PAS 100.
- Supplier: Local source.
 - Product reference: n/a.
- Type: Sanitized and stabilized compost.
- Horticultural parameters:
 - pH (1:5 water extract): 7.0-8.7.
 - Electrical conductivity (maximum, 1:5 water extract): 200 mS/m.
 - Moisture content (m/m of fresh weight): 35-55%.
 - Organic matter (minimum): 25%.
 - Grading (air dried samples): 99% passing 25 mm screen, and 90% a 10 mm screen mesh aperture.
 - Carbon:Nitrogen ratio (maximum): 20:1.
- Texture: Friable.
- Objectionable odour: None.
- Composting Association certification: Required.
- Submit: Declaration of analysis.
- Additional analyses: Not required.
- Samples: Not required.
- Application rate: 2.5 m³/100 m².
- Timing: Apply prior to cultivation.

385A SOIL CONDITIONER

Rolawn Soil Improver

Apply anytime, but care must be taken to avoid digging/forking wet soil, as it may damage the soil structure.

Peat free.

Minimal stone content.

Weight to volume ratio (bulk density) is typically around 550kg per 1m³ bag.

395 PEAT

- Peat or products containing peat: Do not use.

670 CONTAMINATION

- General: Do not use topsoil contaminated with subsoil, rubbish or other materials that are:
 - Corrosive, explosive or flammable.
 - Hazardous to human or animal life.
 - Detrimental to healthy plant growth.
- Subsoil: In areas to receive topsoil, do not use subsoil contaminated with the above materials.
- Give notice: If any evidence or symptoms of soil contamination are discovered on the site, or in topsoil to be imported.

680 TOPSOIL STORAGE HEAPS

- Location: TBC.
- Height (maximum): 1.0 m.
- Width (maximum): 3.0 m.
- Protection:
 - Do not place any other material on top of storage heaps.
 - Do not allow construction plant to pass over storage heaps.
 - Prevent compaction and contamination, by fencing and covering as appropriate.

690 HANDLING TOPSOIL

- Aggressive weeds: Give notice and obtain instructions before moving topsoil.
- Plant: Select and use plant to minimize disturbance, trafficking and compaction.
- Contamination: Do not mix topsoil with:
 - Subsoil, stone, hardcore, rubbish or material from demolition work.
 - Other grades of topsoil.
- Multiple handling: Keep to a minimum. Use or stockpile topsoil immediately after stripping.
- Wet conditions: Handle topsoil in the driest condition possible. Do not handle during or after heavy rainfall or when it is wetter than the plastic limit less 3%, to BS 1377-2.

700 SPREADING TOPSOIL

- Temporary roads/surfacing: Remove before spreading topsoil.
- Layers:
 - Depth (maximum): 150 mm.
 - Gently firm each layer before spreading the next.
- Depths after firming and settlement (minimum): 100 mm.
- Crumb structure: Do not compact topsoil. Preserve a friable texture of separate visible crumbs wherever possible.

710 LOOSE TIPPING OF TOPSOIL

- General: Do not firm, consolidate or compact topsoil when laying. Tip and grade to approximate levels in one operation with minimum of trafficking by plant.
- Depths after settlement (minimum): 100 mm.

Q30 Seeding/turfing

To be read with Preliminaries/General conditions.

GENERAL INFORMATION/REQUIREMENTS

115 SEEDED AND TURFED AREAS

- Growth and development: Healthy, vigorous grass sward, free from the visible effects of pests, weeds and disease.
- Appearance: A closely knit, continuous ground cover of even density, height and colour.

120 CLIMATIC CONDITIONS

- General: Carry out the work while soil and weather conditions are suitable.

145 WATERING

- Quantity: Wet full depth of topsoil.
- Application: Even and without displacing seed, seedlings or soil.
- Frequency: As necessary to ensure the establishment and continued thriving of all seeding/turfing.

150 WATER RESTRICTIONS

- Timing: If water supply is or is likely to be restricted by emergency legislation do not carry out seeding/turfing until instructed. If seeding/turfing has been carried out, obtain instructions on watering.

170 SETTING OUT

- Boundaries: Mark clearly.
- Delineation: In straight lines or smoothly flowing curves as shown on drawings.

PREPARATION

210 HERBICIDE FOR ALL GRASSED AREAS

- Type: Suitable for suppressing perennial weeds.
- Timing: Allow fallow period before cultivation.
 - Duration: As manufacturer's recommendation.

280 FINAL CULTIVATION

- Timing: After grading and fertilizing.
- Seed bed: Reduce to fine, firm tilth with good crumb structure.
 - Depth: 25 mm.
 - Surface preparation: Rake to a true, even surface, friable and lightly firmed but not over compacted.
 - Remove surface stones/earth clods exceeding:
 - General areas: 40 mm.
 - Fine lawn areas: 10 mm.
- Adjacent levels: Extend cultivation into existing adjacent grassed areas sufficient to ensure full marrying in of levels.

310 GRASS SEED FOR ALL GRASSED AREAS

- Mixture: British Seed Houses Grade A19.
- Application rate: 35g/m.sq..

- 335 GRASS SOWING SEASON
- Grass seed generally: April, May, October.

PROTECTING/CUTTING

- 540 FIRST CUT OF ALL GRASSED AREAS
- Height of initial growth: 75 mm.
 - Preparation:
 - Debris and litter: Remove.
 - Stones and earth clods larger than 25 mm in any dimension: Remove
 - Height of first cut: 50 mm.
 - Mower type: Contractor's choice.
 - Arisings: Remove from site.

- 590 CLEANLINESS
- Soil and arisings: Remove from hard surfaces.
 - General: Leave the works in a clean, tidy condition at Completion and after any maintenance operations.

MAINTENANCE

- 610 FAILURES OF SEEDING/TURFING
- Duration: Carry out the following operations from completion of seeding/ turfing until: the end of the rectification period.
 - Defective materials or workmanship: Areas that have failed to thrive.
 - Exclusions: Theft or malicious damage.
 - Method of making good: Recultivation and reseeded/ returfing.
 - Timing of making good: The next suitable planting season.

- 620 MAINTAINING GENERAL GRASSED AREAS
- Duration: Carry out the following operations from completion of seeding/ turfing until: practical completion.
 - Maximum height of growth at any time: 50 mm.
 - Preparation: Before each cut remove all litter and debris.
 - Cutting: As and when necessary to a height of 50 mm.
 - Arisings: Remove.
 - Bulb planting areas: Do not cut until bulb foliage has died down.
 - Trimming: All edges.
 - Arisings: Remove.
 - Weed control: Substantially free of broad leaved weeds.
 - Method: Application of a suitable selective herbicide.
 - Stones brought to the surface: Remove regularly.
 - Size: Exceeding 25 mm in any dimension.
 - Areas of settlement: Make good.
 - Watering: Contractor's choice.

Q31 External planting

To be read with Preliminaries/General conditions.

GENERAL INFORMATION/ REQUIREMENTS

- 112 SITE CLEARANCE GENERALLY
- General: Remove rubbish, concrete, metal, glass, decayed vegetation and contaminated topsoil.
 - Stones: Remove those with any dimension exceeding 50 mm.
 - Contamination: Remove material containing toxins, pathogens or other extraneous substances harmful to plant, animal or human life.
 - Vegetation: Clear surface vegetation in areas shown on drawings using suitable nonresidual herbicide.
 - Large roots: Grub up and dispose of without undue disturbance of soil and adjacent areas.
 - Additional requirements: n/a.
- 118 SOIL CONDITIONS
- Soil for cultivating and planting: Moist, friable and (except in aquatic/ marginal planting) not waterlogged.
 - Frozen or snow covered soil: Give notice before planting. Provide additional root protection. Prevent planting pit sides and bases and backfill materials from freezing.
- 120 CLIMATIC CONDITIONS
- General: Carry out the work while soil and weather conditions are suitable.
 - Strong winds: Do not plant.
- 125 TIMES OF YEAR FOR PLANTING
- Deciduous trees and shrubs: Late October to late March.
 - Conifers and evergreens: September/ October or April/ May.
 - Herbaceous plants (including marginal): September/ October or March/ April.
 - Container grown plants: At any time if ground and weather conditions are favourable.
 - Watering and weed control: Provide as necessary.
 - Dried bulbs, corms and tubers: September/ October.
 - Colchicum (crocus): July/ August.
 - Green bulbs: After flowering in spring.
 - Wildflower plugs: Late August to mid November or March/ April.
 - Aquatic plants: May/ June or September/ October.
- 130 MECHANICAL TOOLS
- Restrictions: Do not use within 100 mm of tree and plant stems.
- 145 WATERING
- Quantity: Wet full depth of topsoil.
 - Application: Even and without damaging or displacing plants or soil.
 - Frequency: As necessary to ensure establishment and continued thriving of planting.
- 150 WATER RESTRICTIONS
- General: If water supply is or is likely to be restricted by emergency legislation, do not carry out planting until instructed. If planting has been carried out, obtain instructions on watering.

160A NOTICE

- Give notice before:
 - Setting out.
 - Applying herbicide.
 - Applying fertilizer.
 - Delivery of plants/ trees.
 - Planting trees into previously dug pits.
 - Watering.
 - Visiting site during maintenance period.
- Period of notice: Three working days.

200 PLANTS/ TREES - GENERAL

- Condition: Materially undamaged, sturdy, healthy and vigorous.
- Appearance: Of good shape and without elongated shoots.
- Hardiness: Grown in a suitable environment and hardened off.
- Health: Free from pests, diseases, discoloration, weeds and physiological disorders.
- Budded or grafted plants: Bottom worked.
- Root system and condition: Balanced with branch system.
 - Standard: The National Plant Specification.
- Species: True to name.
- Origin/ Provenance: Local provenance.
Definition: Origin and Provenance have the meaning given in the National Plant Specification.

215 PLANTS/ TREES - SPECIFICATION CRITERIA

- Name, forms, dimensions, provenance and other criteria: As scheduled and defined in the National Plant Specification.

235 CONTAINER GROWN PLANTS/ TREES

- Growing medium: With adequate nutrients for plants to thrive until permanently planted.
- Plants: Centred in containers, firmed and well watered.
- Root growth: Substantially filling containers, but not root bound, and in a condition conducive to successful transplanting.
- Hardiness: Grown in the open for at least two months before being supplied.
- Containers: With holes adequate for drainage when placed on any substrate commonly used under irrigation systems.

246 LABELLING AND INFORMATION

- Standard: To BS 3936.

260 PLANT/ TREE SUBSTITUTION

- Plants/ trees unobtainable or known to be likely to be unobtainable at time of ordering: Submit alternatives, stating:
 - Price.
 - Difference from specified plants/ trees.
- Approval: Obtain before making any substitution.

265 PLANT HANDLING, STORAGE TRANSPORT AND PLANTING

- Standard: To HTA 'Handling and establishing landscape plants'.
- Frost: Protect plants from frost.
- Handling: Handle plants with care. Protect from mechanical damage and do not subject to shock, e.g. by dropping from a vehicle.
- Plant packaging: Black polyethylene bags.
- Packaging of bulk quantities: Pallets or bins sealed with polyethylene and shrink wrapped.
- Planting: Upright or well balanced with best side to front.

290 SURPLUS MATERIAL

- Subsoil, stones, debris, wrapping material, canes, ties, temporary labelling, rubbish, prunings and other arisings: Remove.

PLANTING TREES

505A TREE PITS

- The pits are to be part excavated of urban tree soil to form dished support to receive rootballed tree, set at correct depth 200mm below finished grille level. Incorporate into the soil:
 - 150L of peat-free compost.
 - slow release resin coated fertiliser (e.g. Osmocote or Fisons Ficote 14-14-14 NPK or similar approved) at manufacturer's recommended rate.
 - Algisure or equivalent soil water retaining gel at manufacturer's recommended rate.
- All to be well mixed in evenly throughout the excavated backfill and pit soils.
- Backfill the excavations with Tree Soil / compost mixture, compacting by tread firming-in 150mm maximum thickness layers and watering-in to eliminate air pockets to within 50mm of underside of tree grille.

510 TREE PIT ROOT BARRIERS

- Locations: As schedule and tender drawings.
- Manufacturer: Green leaf or similar approved.
 - Product reference: ReRoot 600 root barrier.
- Depth of top of root barrier below finished soil level: 25 mm.
- Installation: With sides vertical.

512A TREE PIT ACCESSORIES

- Locations: As per tender drawings.
- Manufacturer: Green leaf or similar approved.
- Supply of Root Rain metro aeration system (1.75m length)..

535 STAKING GENERALLY

- Stakes: Softwood, peeled chestnut, larch or oak, straight, free from projections and large or edge knots and with pointed lower end.
 - Preservative treatment: To provide a 20 year service life.
- Nails: To BS 1202-1, galvanized, minimum 25 mm long and with 10 mm diameter heads.
- Stake size (minimum): 50 mm diameter.

PROTECTING/ MAINTAINING/ MAKING GOOD DEFECTS

720 FAILURES OF PLANTING

- Defects due to materials or workmanship not in accordance with the Contract: Plants/ trees/ shrubs that have failed to thrive.
 - Exclusions: Theft or malicious damage after completion.
 - Rectification: Replace with equivalent plants/ trees/ shrubs.
- Replacements: To match size of adjacent or nearby plants of same species or match original specification, whichever is the greater.
- Timing of making good: During the next suitable planting season.

740 CLEANLINESS

- Soil and arisings: Remove from hard surfaces and grassed areas.
- General: Leave the works in a clean tidy condition at completion and after any maintenance operations.

Q40 Fencing

To be read with Preliminaries/ General conditions.

FENCING SYSTEMS

- 310 CLOSE BOARDED FENCING
- Manufacturer: Contractor's choice.
 - Product reference: Contractor's choice.
 - Standard: To BS 1722-5, type BW 180B.
 - Height: 1800/2000 mm.
 - Wood: Fine sawn softwood.
 - Treatment: FSC Pressure treated to provide a 25 year service life.
 - Finish: FSC Pressure treated.
 - Boards/ rails: Softwood feather edged boards on rectangular rails.
 - Posts: Wood.
 - Centres of posts (maximum): 2.4 m.
 - Method of setting posts: As drawing 06.
 - Accessories: As drawing 06.
 - Conformity: Submit manufacturer's and installer's certificates, to BS 1722-5.
- 310A FENCING TO BINSTORES
- Manufacturer: Contractor's choice.
 - Product reference: Contractor's choice.
 - Standard: To BS 1722-5,
Height: As dwg 06.
 - Wood: Fine sawn Scottish larch.
 - Treatment: Pressure treated to provide a 25 year service life.
 - Finish: None.
 - Boards/ rails: As dwg 06.
 - Posts: Wood.
 - Centres of posts (maximum): As dwg 06.
 - Method of setting posts: As drawing 06.
 - Accessories: As drawing 06.
 - Conformity: Submit manufacturer's and installer's certificates, to BS 1722-5.
- 330A 900MM WOODEN FENCING
- Manufacturer: contractors choise.
 - Product reference: Contractor's choice.
 - Standard: To BS 1722-5
Height: 900mm.
 - Wood: Softwood.
 - Treatment: FSC Pressure treated.
 - Finish: Pressure treated.
 - Palisades and rails: as dwg 06(07).
 - Posts: as dwg 06(07).
 - Centres of posts (maximum): 1.5m.
 - Method of setting posts: as dwg 06(07).
 - Accessories: as dwg 06(07).
 - Conformity: Submit manufacturer's and installer's certificates, to BS 1722-5.

345 STEEL VERTICAL BAR FENCING (1000MM HIGH)

- Manufacturer: Contractor's choice.
 - Product reference: Contractor's choice.
- Standard: To BS 1722-9.
- Height: 1000 mm.
- Verticals: Solid bars - 16mm.
- Centres of verticals: 105mm.
- Posts: SHS, 70 x 70 x 1600 x 3 mm.
 - Finish: Hot dip galvanized to BS EN ISO 1461 and Polyester powder coated, as section Z31.
 - Colour: Jet Black - Ral 9005.
- Centres of posts (maximum): 2.8 m.
- Method of setting posts/ stays/ legs: Posts embedded 600 mm with minimum 100 mm concrete cover.
- Accessories: None.
- Conformity: Submit manufacturer's and installer's certificates, to BS 1722-9.

GATES, POSTS AND STILES

560A STEEL GATES

- Manufacturer: [Contractors choice].
 - Product reference: [n/a].
- Size: [1m high as dwg 06(02)].
- Posts: [100 x 100 SHS].
 - Treatment: [Galvanised to BS EN ISO 1461:1999].
- Finish as delivered: [Polyester powder coated as section Z31].
 - Colour: [Black (RAL 9005)].
- Fittings and accessories: [as dwg 06(02)].
- Method of setting posts: [Concrete foundation as per Dwg. 06(02)].

EXECUTION

710 INSTALLATION GENERALLY

- Set out and erect:
 - Alignment: Straight lines or smoothly flowing curves.
 - Tops of posts: Following profile of the ground.
 - Setting posts: Rigid, plumb and to specified depth, or greater where necessary to ensure adequate support.
 - Fixings: All components securely fixed.

720 SETTING POSTS IN CONCRETE

- Standard: To BS 8500-2.
- Mix: Designated concrete not less than GEN1 or Standard prescribed concrete not less than ST2.
- Alternative mix for small quantities: 50 kg Portland cement to 150 kg fine aggregate to 250 kg 20 mm nominal maximum size coarse aggregate, medium workability.
- Admixtures: Do not use.
- Holes: Excavate neatly and with vertical sides.
- Filling: Position post/ strut and fill hole with concrete to not less than the specified depth, well rammed as filling proceeds and consolidated.
- Backfilling of holes not completely filled with concrete: Excavated material, well rammed and consolidated.

780 MAKING GOOD GALVANIZED SURFACES

- Treatment of minor damage (including on fasteners and fittings): Low melting point zinc alloy repair rods or powders made for this purpose, or at least two coats of zinc-rich paint to BS 4652.
- Thickness: Apply sufficient material to provide a zinc coating at least equal in thickness to the original layer.

COMPLETION

920 FIXINGS

- All components: Tighten.
 - Timing: Before handover.

930 GATES

- Hinges, latches and closers: Adjust to provide smooth operation. Lubricate where necessary.
 - Timing: Before handover.