

WSP UK Limited

Windy Arbor Rd Final

C04

Landscape Specification

Tender Issue

C04

14-10-2022

Contents

D20 Excavating and filling	UNCHANGED	1
F20 Natural stone rubble walling	REVISED	9
F21 Natural stone/ ashlar walling/ dressings	REVISED	11
N91 External signage and interpretation	UNCHANGED	14
Q10 Kerbs/ edgings/ channels/ paving accessories	UNCHANGED	16
Q20 Granular sub-bases to roads/pavings	UNCHANGED	19
Q21 In situ concrete roads/ pavings/ bases	UNCHANGED	22
Q22 Asphalt roads/ pavings	UNCHANGED	26
Q25 Slab/ brick/ sett/ cobble pavings	UNCHANGED	31
Q28 Topsoil, growing media and ameliorants	UNCHANGED	34
Q30 Seeding/turfing	UNCHANGED	41
Q31 External planting	UNCHANGED	45
Q35 Landscape maintenance	UNCHANGED	53
Q40 Fencing	UNCHANGED	62
Q50 Site/street furniture/equipment	UNCHANGED	65

D20

Excavating and filling UNCHANGED

Clauses

2 To be read with preliminaries/general conditions

Generally/the site

112 Site investigation report

1. Windy Arbor Car Park: Interpretative Environmental Ground Investigation Report 70057126/11913 February 2022.

145 Variations in ground water level

1. **Give notice:** If levels encountered are significantly different from levels in the site investigation report or previously measured.

150 Existing services, features and structures

1. **Services:** Refer to drawings and Statutory Undertakers Plans
2. **Site features to be retained:** Refer to drawings
3. **Structures:** Existing estate wall : refer to wall stability assessment technical note and follow recommendations when working within 2m of the wall
Precautions include
 - Excavation to be taken in sections of no more than 5m
 - Backfill each section prior to becoming the next section
 - Ensure no sections are left open overnight
 - Use plant which limits vibrations on the wall

Clearance/excavating

164 Tree roots

1. **Protected area:** Do not cut roots within precautionary protection area.
 - 1.1. **Size of area:** Circle around each tree of radius 12 times trunk diameter, measured 1.5 m above ground level
2. **Excavation in protected area**
 - 2.1. **Method:** By hand, proposals to be submitted to CA
 - 2.2. Backfill as soon as possible or temporarily line with polyethylene sheet to reduce evaporation.
3. **Outside protected area:** Give notice of roots exceeding 25 mm and do not cut without approval.
4. **Cutting**
 - 4.1. Make clean smooth cuts with no ragged edges.
 - 4.2. Pare cut surfaces smooth with a sharp knife.
 - 4.3. **Treatment of cut roots:** Proposals to be submitted to CA. Refer to Arboriculturalist Method statement Appendix D of the Pre Construction Information
5. **Backfill:** As dug material, enriched with amelioration as section Q31

168 Site clearance

1. **Timing:** Before topsoil stripping, if any.
2. **General:** Clear site of rubbish, debris and vegetation. Do not compact topsoil.

3. **Treatment:** Apply a suitable non-residual herbicide to areas to receive planting

170 Removing small trees, shrubs, hedges and roots

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

175 Felling large trees

1. **Definition:** Girth over 600 mm.
2. **Identification:** Clearly mark trees to be removed.
3. **Safety:** Comply with HSE/ Arboriculture and Forestry Advisory Group safety leaflets.
4. **Felling:** As close to the ground as possible.
5. **Stumps:** Remove mechanically to a minimum depth of 300 mm below ground level
6. **Work near retained trees:** Take down trees carefully in small sections to avoid damage to adjacent trees that are to be retained, where tree canopies overlap and in confined spaces generally.

180 Chipping and shredding

1. **General:** Permitted, spread arisings on site in areas designated by CA

220 Stripping topsoil

1. **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.
2. **Depth**
 - 2.1. Remove to an average depth of 200 mm.
 - 2.2. Give notice where the depth of topsoil is difficult to determine.
3. **Handling:** Handle topsoil for reuse or sale in accordance with clause 225.
4. **Around trees:** Do not remove topsoil from below the spread of trees to be retained.
5. **Site storage:** Keep separate from excavated sub-soil

221 Treating topsoil

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

225 Handling topsoil

1. **Standard:** To BS 3882.
2. **Aggressive weeds**
 - 2.1. **Species:** Included in the Weeds Act, section 2 or the appropriate Wildlife and Countryside Act for the relevant jurisdiction.
 - 2.2. **Give notice:** Obtain instructions before moving topsoil.
3. **Contamination:** Do not mix topsoil with:
 - 3.1. Subsoil, stone, hardcore, rubbish or material from demolition work.
 - 3.2. Other soil or material containing aggressive weeds, sharps, plastics and non soil forming materials and notifiable animal or plant diseases.
 - 3.3. Oil, fuel, cement or other substances harmful to plant growth.
 - 3.4. Other classifications of topsoil.

4. **Multiple handling:** Keep to a minimum. Use topsoil immediately after stripping.

240 Adjacent excavations

1. **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.
2. **Angle of line below horizontal:** 45°
3. **Backfill material:** Keep to a minimum, use topsoil immediately after stripping

250 Permissible deviations from formation levels

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

255 Accuracy – linear dimensions

1. **Permissible deviations from linear dimensions generally:** ± 50 mm

270 Foundations generally

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

310 Unstable ground

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

320 Recorded features

1. **Recorded foundations, beds, drains, manholes, etc:** Treat as clause 335
2. **Contaminated earth:** Remove and disinfect as required by local authority.

330 Unrecorded features

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

331 Unforeseen Contamination

1. The Contractor shall maintain a watching brief during the earthworks for unforeseen contamination. Should unforeseen contamination be encountered the Contractor shall cease works in that area and inform the overseeing Engineer before developing a robust methodology for assessing and dealing with the material. In the event that unforeseen contamination is identified, the Contractor shall be responsible for liaising with the Local Authority Contaminated Land Officer to ensure any materials are dealt with in an efficient manner and with minimal impact to project programme.

335 New foundations crossing old foundations or walls

1. **Break out:** The old foundation/ wall where it crosses the new foundation/ wall:
 - 1.1. **Length of breaking out:** Width of the new foundation/ wall plus 50mm on either side of new foundation.
 - 1.2. **Depth of breaking out:** As necessary to permit the construction of the new foundation to its design cross section
2. **Disturbed/ softened soil:** When the formation for the old foundation/ wall is deeper than the formation of the new foundation.
 - 2.1. **Excavate:** Soil that has been disturbed and/ or softened on either side of the old wall/ foundation, and for 100 mm into undisturbed ground on either side.
3. **Step up:** The formation for the new foundation as necessary on either side of the old foundation/ wall until the formation is at its design level.
 - 3.1. **Size of steps:** Minimum distance between steps 600 mm and maximum height of step 200 mm
4. **Backfilling beneath design formation level:** MOT Type 1 or equivalent approved

350 Existing watercourses

1. **Diverted watercourses which are to be filled:** Before filling, remove vegetable growths and soft deposits.

360 Excess excavation

1. **Excavation taken wider than required**
 - 1.1. **Backfill:** With hardcore as clause 710
2. **Excavation taken deeper than required**
 - 2.1. **Backfill:** With well graded granular material or lean mix concrete

370 Underground structures in landscape areas

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

400 Re-use of Site Won Soils

1. The Contractor shall be responsible for managing the re-use of any site won soils in accordance with current Waste Management Regulations. The volume of site won soil suitable for re-use is low and therefore an Environment Agency U1 exemption is likely to be most suitable, although the Contractor can utilise another protocol with agreement from the overseeing organisation. Details of the U1 exemption or other agreed re-use protocol shall be provided to the overseeing organisation.

Disposal of materials

410 Excavated topsoil storage

1. **Storage:** Stockpile in temporary storage heaps: as directed by CA

415 Excavated topsoil removal

1. **General:** Remove from site.

420 Topsoil storage heaps

1. **Location:** To be agreed with CA
2. **Standard:** To BS 3882.
3. **Height (maximum):** 2m
4. **Protection**
 - 4.1. Do not place any other material on top of storage heaps.
 - 4.2. Do not allow construction plant to pass over storage heaps.
 - 4.3. Prevent compaction and contamination.

441 Surplus subsoil

1. **Excavated material:** Stockpile in temporary storage heaps.
2. **Retained material:** Spread and level surplus subsoil on site.
 - 2.1. **Locations:** To be agreed with CA
 - 2.2. **Protected areas:** Do not raise soil level within root spread of trees that are to be retained.
3. **Remaining material:** Remove from site.

450 Water

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

454 Ground water level, springs or running water

1. **Give notice:** If it is considered that the excavations are below the water table.
2. **Springs/ Running water:** Give notice immediately if encountered.

457 Pumping

1. **General:** Do not disturb excavated faces or stability of adjacent ground or structures.
2. **Pumped water:** Discharge without flooding the site or adjoining property.
3. **Sumps:** Construct clear of excavations. Fill on completion.
 - 3.1. **Locations:** Submit proposals

460 Permanent drainage system

1. **Disposal of water from the excavations through system:** Permitted

Filling

500 Proposed fill materials

1. **Details:** Submit full details of proposed fill materials to demonstrate compliance with specification, including:

- 1.1. Type and source of imported fill.
- 1.2. Proposals for processing and reuse of material excavated on site.
- 1.3. Test reports as required elsewhere.
2. **Timing:** At least 21 days before starting filling

510 Hazardous, aggressive or unstable materials

1. **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:
 - 1.1. Frozen or containing ice.
 - 1.2. Organic.
 - 1.3. Contaminated or noxious.
 - 1.4. Susceptible to spontaneous combustion.
 - 1.5. Likely to erode or decay and cause voids.
 - 1.6. With excessive moisture content, slurry, mud or from marshes or bogs.
 - 1.7. Clay of liquid limit exceeding 80 and/or plasticity index exceeding 55.
 - 1.8. Unacceptable, class U2 as defined in the Highways Agency 'Specification for highway works', clause 601.

520 Frost susceptibility

1. **General:** Except as allowed below, fill must be non frost-susceptible as defined in Highways Agency 'Specification for Highway Works', clause 801.8.
2. **Test reports:** If the following fill materials are proposed, submit a laboratory report confirming they are non frost- susceptible:
 - 2.1. Fine grained soil with a plasticity index less than 20%.
 - 2.2. Coarse grained soil or crushed granite with more than 10% retained on a 0.063 mm sieve.
 - 2.3. Crushed chalk.
 - 2.4. Crushed limestone fill with average saturation moisture content in excess of 3%.
 - 2.5. Burnt colliery shale.
3. **Frost-susceptible fill:** May only be used:
 - 3.1. At depths below the finished ground surface greater than: 450 mm
 - 3.2. Within the external walls of buildings below spaces that will be heated. Protect from frost during construction.
 - 3.3. Where frost heave will not affect structural elements.

530 Placing fill

1. **Surfaces of excavations and areas to be filled:** Free from loose soil, topsoil, organic material, rubbish and standing water.
2. **Freezing conditions:** Do not place fill on frozen surfaces. Remove material affected by frost. Replace and recompact if not damaged after thawing.
3. **Adjacent structures, membranes and buried services**
 - 3.1. Do not overload, destabilise or damage.
 - 3.2. Submit proposals for temporary support necessary to ensure stability during filling.
 - 3.3. Allow 14 days (minimum) before backfilling against in situ concrete structures.
4. **Layers:** Place so that only one type of material occurs in each layer.
5. **Earthmoving equipment:** Vary route to avoid rutting.

535 Compaction generally

1. **General:** Compact fill not specified to be left loose as soon as possible after placing.
2. **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.
3. **Defective areas:** Remove and recompact to full thickness of layer using new material.

540 Benching in fill

1. **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.
2. **New filling:** Spread and compact to ensure maximum continuity with previous filling.

610 Compacted filling for landscape areas

1. **Fill:** Material capable of compaction by light earthmoving plant.
2. **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

1. **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 Type 1 unbound mixture

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

620 Subgrade improvement layer (capping)

1. **Fill:** To Highways Agency 'Specification for highway works', Table 6/1, Class 6F1 or 6F2.
2. **Filling:** Place and compact to Highways Agency Specification for highway works, Table 6/1, clause 612 and clause 613.3, 613.9 and 613.10.

626 Compacted general fill

1. **Suitable material:** inorganic material excavated on the site
2. **Excavated material:** Select suitable material and keep separate.
3. **Filling:** Spread and level material in layers. As soon as possible thoroughly compact each layer.
4. **Required compaction:** To suit uses of fill as shown on contract drawing
5. **Proposals:** Well in advance of starting work submit details of proposed:
 - 5.1. Materials to be used, including quantities of each type.
 - 5.2. Type of plant.
 - 5.3. Maximum depth of each compacted layer.
 - 5.4. Minimum number of passes per layer.

650 Protection of compacted filling

1. **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.
2. **Removal:** Remove temporary protective filling from site before permanent construction.

700 Backfilling around foundations

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

710 Hardcore filling

1. **Fill:** Granular material, free from excessive dust, well graded, all pieces less than 75 mm in any direction:
 - 1.1. **Test requirements**
 - 1.1.1. Minimum 10% fines value tested in a soaked condition to BS 812-111 Not required.
 - 1.1.2. Impact value SZ tested to BS EN 1097-2 Not required.
2. **In any one layer only one of the following:**
 - 2.1. Crushed rock (other than argillaceous rock) or quarry waste with not more binding material than is required to help hold the stone together.
 - 2.2. Crushed concrete, crushed brick or tile, free from plaster, timber and metal.
 - 2.3. Crushed non-expansive slag.
 - 2.4. Gravel or hoggins with not more clay content than is required to bind the material together, and with no large lumps of clay.
 - 2.5. Well-burned non-plastic colliery shale.
 - 2.6. Natural gravel.
 - 2.7. Natural sand.
3. **Filling:** Spread and level in 150 mm maximum layers. Thoroughly compact each layer.

Bioremediation - Not Used

'specification for highway works: earthworks specification' appendices - Not Used

Ω End of Section

F20

Natural stone rubble walling **REVISED**

Structural requirements

102 Contractor's design

1. Design responsibility: Design and detail: Sandstone wall as drawing: 70057126_WSP_XX_XX_DR_LA_0005 and 70057126_WSP_XX_XX_DR_LA_0010.
2. Structural and fire requirements
 - 2.1. Design: Complete the design in accordance with the designated code of practice to satisfy specified performance criteria for masonry, reinforcement, wall ties, anchors, lintels.
3. Design and production information: Stone Pier and Sandstone Pier Cap to match Halsnead Estate Style. Refer to Halsnead Design Guide.

Types of walling

110 Rubble walling **REVISED**

1. Description: To match with existing wall. As drawing: as drawing: 70057126_WSP_XX_XX_DR_LA_0005 .
2. Existing Stone: Re-use existing stone reclaimed from wall removal. If quantity is not sufficient new stone as detailed below to be sourced. This should be used randomly mixed with existing stone on the rear elevation of the wall. If new coping is required, then best location for new section to be agreed on site with the Heritage Officer and Landscape Architect
3. Stone: To BS EN 771-6.
 - 3.1. Petrological family: Sandstone
 - 3.2. Colour: To match the existing wall & reclaimed stone from sections of wall removed
Wall: Elswick grey & Longridge sandstone
Coping: St Bees
As per samples provided to KMBC
 - 3.3. Supplier: Stone central or similar approved
 - 3.4. Size: Random sizes to match existing wall
 - 3.5. Quality: Seasoned and free from vents, cracks, fissures or other defects deleterious to strength, durability or appearance.
4. Mortar: As section Z21.
 - 4.1. Standard: To BS EN 998-2
 - 4.2. Mix: Lime : Sand mortar
 - 4.3. Additional requirements: Coloured mortar to match existing

General requirements - Not Used

Laying and jointing

315 Adverse weather

1. General: Do not use frozen materials or lay on frozen surfaces.
2. Air temperature: Do not lay stones:
 - 2.1. In cement gauged mortars: At or below 3°C and falling or below 1°C and rising.
 - 2.2. In hydraulic lime:sand mortars: At or below 5°C and falling or below 3°C and rising.
3. Temperature of walling during curing: Above freezing until mortar hardened.
4. Newly erected walling: Protect at all times from:

- 4.1. Rain and snow.
- 4.2. Drying out too rapidly in hot conditions and in drying winds.

325 Laying generally

- 1. Absorbent stones: Dampen in warm weather to reduce suction. Do not soak.
- 2. Mortar joints
 - 2.1. Laying: Full bed of mortar with all joints and voids filled.
 - 2.2. Appearance: Neat and consistent.
- 3. Orientation for natural bed of stones: Appropriate to properties of stones and positions in walling/dressings.
- 4. Appearance and bonding: Consistent overall appearance and good bond.
 - 4.1. Random walling: Distribute different shapes, sizes and colours evenly throughout the face of the wall. Avoid long continuous vertical joints.
- 5. Accuracy
 - 5.1. Walling generally: Plumb, unless specified otherwise.
 - 5.2. Setting out: Achieve satisfactory junctions and joints with adjoining or built-in elements and components.
- 6. Cleanliness: Keep facework clean. Rubbing and other abrasive or chemical cleaning methods to remove marks and stains, not permitted.

330 Walling below ground level

- 1. Extent of facework below finished level of adjoining ground or external works (minimum): 150 mm.

380 Coursed work

- 1. Courses: True to line and level.

Ω End of Section

F21

Natural stone/ ashlar walling/ dressings **REVISED**

Types of walling/ dressings

110 Ashlar **REVISED**

1. Description: CURVED WALL & PIERS
2. Stone: To BS EN 771-6.
 - 2.1. Petrological family: Sandstone
 - 2.2. Colour: St. Bees for curved wall. Dressed stone blocks, sizes to match existing : St Bees
St Bees for coping stone: Size & profile to match existing on site
 - 2.3. Origin: Submit proposals
 - 2.4. Finish: To match existing
 - 2.5. Supplier: Stone central or equivalent
 - 2.6. Unit dimension tolerances: Length + 1 mm, width (bed) +1 mm, height + 1 mm
 - 2.7. Compressive strength
 - 2.7.1. Mean value (minimum): 25 N/mm²
 - 2.7.2. Characteristic value (minimum): 25N/mm²
 - 2.7.3. Category: I
 - 2.8. Open porosity: submit proposals for approval
 - 2.9. Additional requirements: All stone to match existing of site
 - 2.10. Quality: Free from vents, cracks, fissures, discolouration, or other defects deleterious to strength, durability or appearance. Before delivery to site, season thoroughly, dress and work in accordance with shop drawings prepared by supplier.
3. Mortar: Lime:sand mortar coloured to match existing wall
 - 3.1. Standard: To BS EN 998-2
 - 3.2. Mix: submit proposals for approval from Heritage Officer in KMBC
 - 3.3. Sand: To BS EN 13139; crushed stone with grading to approval
 - 3.4. Additional requirements: Coloured mortar to match existing
4. Bond: To match existing on site
5. Joints: Flush.
 - 5.1. Width: To match existing
 - 5.2. Pointing: to match existing
6. Other requirements: Pier cap to match existing estate style

General production

240 Stone samples

1. Submit: Labelled samples of dressed stone or arrange for samples which represent the range of variation in appearance to be inspected.
 - 1.1. Timing: Before placing orders.

250 Cutting and dressing of stone

1. Timing: After seasoning but before delivery to site.
2. Accuracy
 - 2.1. Exposed and joint surfaces: Square, true planes free from hollow or rough areas.

- 2.2. Dimensions: Maintain specified joint widths.
3. Orientation for natural bed of stones: Appropriate to properties of stones and positions in walling/dressings.

260 Identification of stone units

1. Marking: Clearly and indelibly on concealed faces to indicate the natural bed and position in the finished work.

270 Inspection of stone units

1. Give notice: Before despatch to site, at appropriate stages of production.

280 Sand samples

1. Submit: Representative samples for approval of colour and grading.
 - 1.1. Timing: Before placing orders.

Laying and jointing

300 Reference panels

1. General: Complete areas of specified walling types and obtain approval of appearance before proceeding further.
2. Walling type
 - 2.1. Location: At entrance
 - 2.2. Size: 3m section of wall
 - 2.3. Features: curved section with coping

315 Adverse weather

1. General: Do not use frozen materials or lay on frozen surfaces.
2. Air temperature: Do not lay stones:
 - 2.1. In cement gauged mortars: At or below 3°C and falling or below 1°C and rising.
 - 2.2. In hydraulic lime:sand mortars: At or below 5°C and falling or below 3°C and rising.
3. Temperature of walling during curing: Above freezing until mortar hardened.
4. Newly erected walling: Protect at all times from:
 - 4.1. Rain and snow.
 - 4.2. Drying out too rapidly in hot conditions and in drying winds.

325 Laying generally

1. Stone selection: Do not use units with damaged faces or arrises.
2. Accuracy
 - 2.1. Courses: Level and true to line.
 - 2.2. Faces, angles and features: Plumb.
 - 2.3. Setting out: Achieve satisfactory junctions and joints with adjoining or built-in elements and components.
3. Absorbent stones: Dampen in warm weather to reduce suction. Do not soak.
4. Mortar joints
 - 4.1. Laying: Full bed of mortar with all joints and voids filled.
 - 4.2. Temporary distance pieces: Lead or stainless steel. Remove when mortar is sufficiently strong.

- 4.3. **Appearance:** Neat and consistent.
5. **Cleanliness:** Keep facework clean. Rubbing and other abrasive or chemical cleaning methods to remove marks and stains not permitted.

330 Walling below ground level

1. **Extent of facework below finished level of adjoining ground or external works (minimum):** 150 mm.

340 Putlog scaffolding

1. **Use:** Not permitted.

360 Openings

1. **Method of forming:** Rigid templates, accurately fabricated to the required size.

390 Pointing

1. **Joint preparation:** Rake out to depth of 7-10 mm as work proceeds. Remove debris. Dampen surface.
2. **Mortar application:** Neat and consistent.

Ω End of Section

N91

External signage and interpretation UNCHANGED

Signage outline - Not Used

System performance

205 Design of signage systems

1. **Description:** Wall Sign
2. **Design:** Complete detailed design and submit before commencing work.
3. **Proposals:** Submit drawings, schedules, technical information, calculations and manufacturer's literature before commencing work.

210 External signage generally

1. **Signage systems generally:** Complete to BS 559, including components, inserts, accessories and fixings necessary to complete the system.
2. **External signage:** To BS 559, clause 6.1.
3. **Content:** Signs including facing information, components, inserts, accessories and fixings necessary to complete the system.
4. **Geometric shapes, colours and layout:**
5. **Wind loads:** To BS EN 1991-1-4.

230 Accessibility

1. **Design standard for disabled users:** In accordance with BS 8300-1 and BS 8501

235 Electrical requirements for illuminated signs

1. **Electrical requirements for illumination:** To BS 559, section 7.

Products

305 Signage products generally

1. **Materials:** To BS 559.
2. **Colorimetric and photometric properties:** To BS ISO 3864-4.
3. **Fabricated letters:** To BS 559, clause 6.6.
4. **Fixings:** To BS 559, clause 6.11 and section Z12.

Materials - Not Used

Fabrication

565 Plaque/ wall-mounted sign

1. **Description:** Wall
2. **Manufacturer:** Black country metal works.
mail:sales@blackcountrymetalworks.co.uk
 - 2.1. **Product reference:** Bespoke - N/A
3. **Material:** Sheet steel
 - 3.1. **Finish:** Painted as section M60
 - 3.2. **Background colour:** Black

4. Layout and dimensions: 1.5m high
 - 4.1. Content: To be confirmed by client
 - 4.2. Lettering
 - 4.2.1.Manufacturing process: Vinyl
 - 4.2.2.Font: Helvetica medium
 - 4.2.3.Size: as recommended by supplier
 - 4.2.4.Colours: White text
 - 4.2.5.Language: English
 - 4.3. Symbols and graphics: None
 - 4.3.1.Manufacturing process: Cut out Vinyl
 - 4.3.2.Size: 55cm x 40cm
 - 4.3.3.Colours: Black
 - 4.4. Bespoke artwork: None
 - 4.4.1.Manufacturing process: Cut out
5. Method of fixing: Wall-mounted, screw-fixed
6. Fixing accessories: Screws, as section Z20 (supplied)
7. Additional requirements: N/A

Execution/ erection/ installation

610 Fixing signs generally

1. Generally: Where not specified precisely, select methods of jointing and fixing and types, sizes and spacings of fasteners in compliance with section Z20.
2. Installation: To BS 559.
 - 2.1. Secure, plumb and level.
3. Strength of fasteners: Sufficient to support all live and dead loads.
4. Fasteners and/ or adhesives: As section Z20.
5. Fasteners for external signs: Corrosion resistant material or with a corrosion resistant finish. Isolate dissimilar metals to avoid electrolytic corrosion.
6. Fixings showing on surface of sign: Must not detract from the message being displayed.
7. Temporary support: Do not subject members to non-design loadings.
8. Protection of users
 - 8.1. Fasteners for signs must not have sharp edges or protrusions that would cause injury to users.
 - 8.2. Fasteners for tactile/ Braille signs must not have protrusions that would cause confusion to users.

Completion

930 Specialist tools

1. Supply as follows:

Ω End of Section

Q10

Kerbs/ edgings/ channels/ paving accessories UNCHANGED

Clauses

2 To be read with preliminaries/general conditions.

Types of kerbs/edgings and channels

112A Granite Aggregate

1. Description: Flush kerb
Raised kerb
Transition kerb
External radius kerb
2. Manufacturer: Tobermore
sales@tobermore.co.uk
3. Product: Fusion Kerb
 - Features an exposed granular surface with a hint of sparkle
 - Emulates the unique appearance of traditional granite kerbs
 - Perfect accompaniment to granite aggregate paving
- 1.
4. Standard: To BS EN 1340.
5. Recycled content: as manufactured
6. Designations: BN Kerb, bullnosed
7. Size (width x height x length): 145 x 255 x 915 mm
8. Special shapes: Transition kerbs TL and TR as shown on and external radius kerbs as shown on drawings
9. Finish: As cast
10. Colour: Silver
11. Bending strength: No requirement
12. Weathering resistance: No requirement
13. Abrasion resistance: No requirement
14. Slip/ skid resistance: No requirement
15. Bedding: BED AND BACKING MIX ST2.
CONCRETE TO BS EN 206
16. Joints generally: Narrow mortar
17. Sealant movement joints: Not required
18. Accessories: None

Roads/paving accessories/ marking/ demarcation - Not Used

Laying

510 Laying kerbs, edgings and channels

1. Cutting: Neat, accurate and without spalling. Form neat junctions.
 - 1.1. Long units (450 mm and over) minimum length after cutting: 300 mm.
 - 1.2. Short units minimum length after cutting: The lower of one third of their original length or 50 mm.

2. **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.
3. **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

1. **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

1. **Standard:** To BS 8500-2.
2. **Designated mix:** Minimum ST2 MIX.
3. **Workability:** Very low.

540 Cement mortar bedding

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

547 Bedding/ Backing of units on fresh concrete races

1. **Standard:** To BS 7533-6.

570 Channels

1. **Installation:** To an even gradient, without ponding or backfall.
2. **Lowest points of channels:** 6 mm above drainage outlets.

600 Radius kerbs/ channels

1. **Usage:** Radii of 15 m or less.

620 Accuracy

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

625 Regularity of paved surfaces

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

630 Narrow mortar joints

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

640 Tooled mortar joints

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

Ω End of Section

Q20

Granular sub-bases to roads/pavings UNCHANGED

To be read with preliminaries/ general conditions.

110 Thicknesses of sub-base/ subgrade improvement layers

1. **Thicknesses:** See sections:
 - 1.1. Q22 Coated macadam/asphalt roads/pavings and Q23 Gravel/hoggin/woodchip roads/pavings.

130 Herbicides

1. **Type:** Contact, non-selective
2. **Application:** To subgrade of footpath & car park.

140 Excavation of subgrades

1. **Final excavation to formation or subformation level:** Carry out immediately before compaction of subgrade.
2. **Soft spots and voids:** Give notice.
3. **Old drainage and service trenches:** Excavate to remove soft or damaged material, then backfill with specified granular sub-base material and compact.
4. **Wet conditions:** Do not excavate or compact when the subgrade may be damaged or destabilized.

145 Preparation and compaction of subgrades

1. **Timing:** Immediately before placing sub-base.
2. **Soft or damaged areas:** Excavate and replace with sub-base material, compacted in layers 300 mm (maximum) thick
3. **Compaction:** Thoroughly, by roller or other suitable means, adequate to resist subsidence or deformation of the subgrade during construction and of the completed roads/ pavings when in use. Take particular care to compact fully at intrusions, perimeters and where local excavation and backfilling has taken place.

150 Subgrades for vehicular areas

1. **Preparation and treatment:** To Highways Agency 'Specification for highway works', clauses 616 and 617.

170 Geotextile filter/ separator membrane

1. **Description:** To all new surfacing
2. **Manufacturer:** Terram or equivalent approved
 - 2.1. **Product reference:** T1000 or equivalent approved
3. **Jointing:** 300 mm overlap
4. **Protect from**
 - 4.1. Exposure to light, except during laying (maximum five hours).
 - 4.2. Contaminants.
 - 4.3. Materials listed as potentially deleterious by geotextile manufacturer.
 - 4.4. Damage, until fully covered by fill.
 - 4.5. Wind uplift, by laying not more than 15 m before covering with fill.
5. **Preparation:** Remove humps and sharp projections and fill hollows before laying.

180 Notice

1. Give notice: After preparation and compaction of subgrades
 - 1.1. Period of notice: 2 working days

210 Highways agency Type 1 unbound mixture for sub-base

1. Material: Type 1 unbound mixture to Highways Agency 'Specification for highway works', clauses 801 and 803.
 - 1.1. Recycled aggregate: Permitted - needs to be an approved equivalent by CA

220 Frost susceptible granular material

1. Definition (non frost susceptible material): To Highways Agency 'Specification for highway works' clause 801.8.
2. Depth of frost susceptible material below final surface of paving (minimum): 450 mm
3. Testing: Test materials used if required and supply certificates.

230 Placing granular material generally

1. Preparation: Loose soil, rubbish and standing water removed.
2. Structures, membranes and buried services: Ensure stability and avoid damage.

250 Laying granular sub-bases

1. Description: For pedestrian areas
2. General: Spread and levelled.
3. Compaction
 - 3.1. Timing: As soon as possible after laying.
 - 3.2. 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

1. Permissible deviation from required levels, falls and cambers (maximum)
 - 1.1. Subgrades
 - 1.1.1. Roads and parking areas: +20 -30 mm.
 - 1.1.2. Footways and recreation areas: ± 20 mm.
 - 1.2. Sub-bases
 - 1.2.1. Roads and parking areas: ± 20 mm
 - 1.2.2. Footways and recreation areas: ± 12 mm

330 Cold weather working

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

340 Protection

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

Ω End of Section

Q21

In situ concrete roads/ pavings/ bases UNCHANGED

Clauses

2 To be read with preliminaries/ general conditions.

Types of paving

120 Site mixed unreinforced concrete paving

1. Description: To planters
2. Subgrade improvement layer: Not required
 - 2.1. Compacted thickness: Not applicable
3. Geotextile filter: Not required
4. Granular sub-base: Highways Agency Type 1 unbound mixture, as section Q20
 - 4.1. Compacted thickness: 150 mm
5. Separation membrane: Polyethylene sheet 125 micrometres thick, edges lapped 300 mm.
6. Prescribed concrete: To BS 8500-2.
 - 6.1. Performance data: n/a
 - 6.2. Fibres: n/a
 - 6.3. Coarse aggregate
 - 6.3.1. Standard: To BS EN 12620.
 - 6.3.2. Size (maximum): 6mm to dust
 - 6.3.3. Type/ Density: Normal.
 - 6.3.4. Grading: Combination of granolithic concrete, cement and sand 6:1:2
 - 6.3.5. Coarse recycled aggregate: Not permitted
 - 6.4. Fine aggregate
 - 6.4.1. Standard: To BS EN 12620.
 - 6.4.2. Grading: n/a
 - 6.5. Additional aggregate requirements: Combination of granolithic concrete, cement and sand 6:1:2
 - 6.6. Cement or combination: mix with plasticiser and colour dye to match existing walls on the planters
 - 6.6.1. Standard strength class: n/a
 - 6.7. Consistence class: n/a
 - 6.8. Mix proportions
 - 6.8.1. Cement or combination content: Combination of granolithic concrete, cement and sand 6:1:2
 - 6.8.2. Coarse aggregate content: 1m³ requires 1680 kg/m³ of grano dust
 - 6.8.3. Fine aggregate content: 1m³ requires 480 kg/m³ of cement
 - 6.8.4. Water:cement ratio: 1m³ requires 0.33 litres (target)
 - 6.8.5. Chloride class: n/a
 - 6.8.6. Air entraining admixture: Chloride free type to BS EN 934-2 and BS EN 934-6.
 - 6.8.7. Total air content by volume of mix: Not applicable
 - 6.9. Batching/ mixing: To BS 8000-2.1.
 - 6.10. Additional mix requirements: n/a .

7. Slab thickness (minimum): n/a
8. Information to be provided by the producer: As BS EN 206-1, clause 7.
9. Finish: domed polished top to shed water

General/ preparation

140 Ready-mixed concrete

1. Production plant: Currently certified by a body accredited by UKAS to BS EN ISO/IEC 17065 for product conformity certification.
2. Source of ready-mixed concrete: Obtain from one source if possible. Otherwise, submit proposals.
 - 2.1. Name and address of depot: Submit before any concrete is delivered.
 - 2.2. Delivery notes: Retain for inspection.
3. Declarations of nonconformity from concrete producer: Notify immediately.

141 Site mixed concrete

1. Batching by mass
 - 1.1. Restrictions: None
 - 1.2. Accuracy of measuring devices: To BS EN 206-1, clause 9.6.2.2.
 - 1.2.1. Tolerances for quantity of constituent material: To BS EN 206-1, table 21.
2. Batching by volume
 - 2.1. Restrictions: None
3. Mixing: To BS 8000-2.1, subsections 2, 3 and 4.

145 Admixtures

1. Calcium chloride and admixtures containing calcium chloride: Do not use.

155 Project testing of concrete - general

1. Testing: To BS EN 206-1, annex B and BS 8500-1, annex B.
2. Recording: Maintain complete correlated records including:
 - 2.1. Concrete designation.
 - 2.2. Sampling, site tests, and identification numbers of specimens tested in the laboratory.
 - 2.3. Location of the parts of the structure represented by each sample.
 - 2.4. Location in the structure of the batch from which each sample is taken.
3. Testing laboratory: Accredited by UKAS or other national equivalent.
4. Tests results
 - 4.1. Submission of reports: Within one day of completion of each test.
 - 4.1.1. Number of copies: 2
 - 4.2. Reports on site: A complete set, available for inspection.
5. Nonconformity: Obtain instructions immediately

240 Sub-base preparation

1. Surface: Sound, free of debris, mud and soft spots, and suitably close textured.
2. Levels and falls: Within specified tolerances:
 - 2.1. Vehicular areas: ± 20 mm.
 - 2.2. Pedestrian areas: ± 12 mm.

- 2.3. Drainage outlets: +0 to -10 mm of required finished level.
3. Kerbs and edgings: Complete, adequately bedded and haunched, and to required levels.

Laying concrete

310 Transporting concrete

1. **General:** Avoid contamination, segregation, loss of ingredients, excessive evaporation and loss of workability. Protect from heavy rain.
2. **Entrained air:** Anticipate effects of transport and placing methods in order to achieve specified air content.
3. **Placing:** Use suitable walkways and barrow runs for traffic over reinforcement and freshly placed concrete.

320 Laying concrete generally

1. **Timing:** Place as soon as practicable after mixing and while sufficiently plastic for full compaction. After discharge from the mixer do not add water or retemper.
2. **Temperature of concrete at point of delivery**
 - 2.1. In hot weather (maximum): 30°C.
 - 2.2. In cold weather (minimum): 5°C.
3. **Cold weather**
 - 3.1. Do not use frozen materials.
 - 3.2. Do not place concrete against frozen or frost covered surfaces.
 - 3.3. Do not place concrete when air temperature is below 3°C on a falling thermometer. Do not resume placing until rising air temperature has reached 3°C.
4. **Surfaces on which concrete is to be placed:** Free from debris and standing water.
5. **Placing in final position:** Place in one continuous operation up to construction joints.
 - 5.1. Do not place concrete simultaneously on both sides of movement joints.
6. **Spreading:** Spread and strike off with surcharge sufficient to obtain required compacted thickness.
7. **Adjacent work:** Form neat junctions and prevent damage. Keep clean all channels, kerbs, inspection covers, etc.

330 Compacting

1. **General:** Fully compact concrete to full depth (until air bubbles cease to appear on the surface) especially around reinforcement, cast-in accessories, into corners and at joints.
2. **Poker vibrators:** Do not use to make concrete flow into position. Do not allow to come into contact with fabric reinforcement.
3. **Wet formed joint grooves:** Rectify any irregularities by means of a vibrating float.
4. **Finish:** A dense, even textured surface free from laitance or excessive water.
 - 4.1. **Excess concrete:** Remove from top of groove formers.

350 Levels

1. **Lines and levels of finished surface:** Smooth and even, with regular falls to prevent ponding.
2. **Finished surfaces:** Within ± 6 mm of required levels (+6 or -0 mm adjacent to gullies and manholes).

360 Surface regularity

1. **General:** Where appropriate in relation to the geometry of the surface, the variation in gap under a 3 m straightedge (with feet) placed anywhere on the surface to be not more than 5 mm.

2. Sudden irregularities: Not permitted.

Joints

410 Joints generally

1. **Layout:** All joints to be accurately located, straight and well aligned.
2. **Construction joints made at end of working day:** Form as contraction joints.
3. **Modifications to joint design or location:** Submit proposals.
4. **Temporary support:** Prior to concreting, set formwork, dowel bars, tie bars, joint filler boards, sealing groove fillets and the like rigidly in position and support to prevent displacement. Maintain support until concrete has set.
5. **Keep clean**
 - 5.1. Do not allow concrete to enter gaps or voids in formwork or to render movement joints ineffective.
 - 5.2. Do not allow concrete to impregnate or penetrate materials used as compressible joint fillers.

Surface finish

540 Smooth floated finish

1. **Timing:** After compaction allow concrete to stiffen sufficiently to be properly worked.
2. **Finish:** Even smooth surface with no ridges or steps.

550 Power trowel finish

1. **Preparation:** Float concrete to an even surface with no ridges or steps, then immediately commence curing.
2. **Surface finish:** Uniform, smooth and free from trowel marks and other blemishes.
3. **Completion:** Resume specified curing without delay.

570 Washand brush finish

1. **Preparation:** Float concrete to an even surface with no ridges or steps, then immediately commence curing.
2. **Finish**
 - 2.1. When concrete is sufficiently hard to hold coarse aggregate in place, remove surface mortar by brushing with a stiff bristle brush and water spray.
 - 2.2. Remove cement paste from concrete surface by flooding with clean water and applying a dilute solution of hydrochloric acid. Thoroughly rinse with water after acid has ceased effervescing.
3. **Completion:** Resume specified curing without delay.

Curing/ protection/ finishing - Not Used

Ω End of Section

Q22

Asphalt roads/ pavings UNCHANGED

Clauses - Not Used

Types of paving

140 Hot rolled asphalt paving - Carriageway

1. **Description:** TO CAR PARK - ROADS. TO BE READ IN CONJUNCTION WITH 70057126_WSP_XX_XX_DR_CE_0103 and 70057126_WSP_XX_XX_DR_CE_0105
2. **Standard:** To BS EN 13108-4
3. **Subgrade improvement layer:** Contractor's choice
 - 3.1. **Compacted thickness:** Contractor's choice
4. **Geotextile:** Sheet
 - 4.1. **Manufacturer:** Terram or similar equivalent
 - 4.1.1. **Product reference:** Non woven geotextile membrane 1000
5. **GeoGrid:** Geogrid: Huesker Fortrac MDT or superior approved product.
The detailed design should be undertaken by Huesker based on the available ground investigation information and the following design criteria:

2. Criteria	3. Value
4. Scheme end use	5. Surfaced car park
6. Area	7. Whole car park ~1600m ²
8. Fill depth above geogrid	9. Min 0.24m (i.e. pavement construction and taking into account below ground services, structures and the like)
10. Variable/live loading	11. Traffic - 10kPa
12. Design void diameter to be spanned	13. Max. 1.0m
14. Allowable surface deformation as a result of design void	15. Max. 100mm
16. Design life	17. Min. 60 years

2. Note, Huesker may promote a different system that they feel is more appropriate.
6. **Granular sub-base:** General Areas - Type 1 unbound mixture, as section Q20
 - 6.1. **Compacted thickness:** 150mm plus 100mm capping
7. **Binder course:** AC 20
 - 7.1. **Paving grade:** AC 20 - DENSE BIN 40/60
 - 7.2. **Compacted thickness:** 60 mm, nominal
8. **Surface course:** AC10 CLOSE SURFACE COURSE
 - 8.1. **Paving grade:** 100/150
 - 8.2. **Slip/ Skid resistance:** Minimum PSV 60, maximum AAV 16.
 - 8.3. **Compacted thickness:** 40 mm
9. **Reclaimed content**
 - 9.1. **Standard:** To BS EN 13108-8.
 - 9.2. **Value (maximum):** Surface course 10%, other courses 20%
10. **Surface treatment:** white lining as shown on 70057126_WSP_XX_XX_DR_CE_0101

140 Hot rolled asphalt paving - Carriageway Heavy Duty

1. **Description:** TO CAR PARK - ROADS. TO BE READ IN CONJUNCTION WITH 70057126_WSP_XX_XX_DR_CE_0103 and 70057126_WSP_XX_XX_DR_CE_0105
2. **Standard:** To BS EN 13108-4
3. **Subgrade improvement layer:** Contractor's choice
 - 3.1. **Compacted thickness:** Contractor's choice
4. **Geotextile:** Sheet
 - 4.1. **Manufacturer:** Terram or similar equivalent
 - 4.1.1. **Product reference:** Non woven geotextile membrane 1000
5. **GeoGrid:** Geogrid: Huesker Fortrac MDT or superior approved product.
The detailed design should be undertaken by Huesker based on the available ground investigation information and the following design criteria:

18. Criteria	19. Value
20. Scheme end use	21. Surfaced car park
22. Area	23. Whole car park ~1600m ²
24. Fill depth above geogrid	25. Min 0.24m (i.e. pavement construction and taking into account below ground services, structures and the like)
26. Variable/live loading	27. Traffic - 10kPa
28. Design void diameter to be spanned	29. Max. 1.0m
30. Allowable surface deformation as a result of design void	31. Max. 100mm
32. Design life	33. Min. 60 years

3. **Note,** Huesker may promote a different system that they feel is more appropriate.
6. **Granular sub-base:** General Areas - Type 1 unbound mixture, as section Q20
 - 6.1. **Compacted thickness:** 150mm plus 100mm capping
7. **Base:** AC32
 - 7.1. **Paving grade:** 40/60
 - 7.2. **Compacted thickness:** 80mm
8. **Binder course:** AC 20
 - 8.1. **Paving grade:** AC 20 - DENSE BIN 40/60
 - 8.2. **Compacted thickness:** 60 mm
9. **Surface course:** AC10 CLOSE SURFACE COURSE
 - 9.1. **Paving grade:** 100/150
 - 9.2. **Slip/ Skid resistance:** Minimum PSV 60, maximum AAV 16.
 - 9.3. **Compacted thickness:** 40mm
10. **Reclaimed content**
 - 10.1. **Standard:** To BS EN 13108-8.
 - 10.2. **Value (maximum):** Surface course 10%, other courses 20%
11. **Surface treatment:** white lining as shown on 70057126_WSP_XX_XX_DR_CE_0101

140A Hot rolled asphalt paving - Footway

1. **Description:** TO CAR PARK - FOOTPATHS.
TO BE READ IN CONJUNCTION WITH 70057126_WSP_XX_XX_DR_CE_0105 and 70057126_WSP_XX_XX_DR_CE_0103
2. **Standard:** To BS EN 13108-4
3. **Subgrade improvement layer:** Contractor's choice
 - 3.1. **Compacted thickness:** Contractor's choice
4. **Geotextile:**
 - 4.1. **Manufacturer:** Terram or similar equivalent
 - 4.1.1. **Product reference:** Non woven geotextile membrane 1000
5. **Granular sub-base:** For general areas Type 1 unbound mixture, as section Q20
 - 5.1. **Compacted thickness:** 150 mm for F1 / 225mm for F2 (where maintenance vehicles will access)
6. **Binder course:** AC20 MACADAM BINDER COURSE - 20MM NOMINAL SIZE AGGREGATE
 - 6.1. **Paving grade:** AC 20 - DENSE BIN 100/150
 - 6.2. **Compacted thickness:** 50 mm
7. **Surface course:** AC6 MACADAM SURFACE COURSE - 6MM NOMINAL SIZE AGGREGATE
 - 7.1. **Paving grade:** 100/150
 - 7.2. **Slip/ Skid resistance:** No requirement
 - 7.3. **Compacted thickness:** 20mm
8. **Reclaimed content**
 - 8.1. **Standard:** To BS EN 13108-8.
 - 8.2. **Value (maximum):** Surface course 10%, other courses 20%
9. **Surface treatment:** Not required

140B Coloured Hot rolled asphalt paving - Carriageway

1. **Description:** TO CAR PARK - DISABLED BAY MOVEMENT ZONE. TO BE READ IN CONJUNCTION WITH 70057126_WSP_XX_XX_DR_CE_0105 and 70057126_WSP_XX_XX_DR_CE_0103
2. **Standard:** To BS EN 13108-4
3. **Subgrade improvement layer:** Contractor's choice
 - 3.1. **Compacted thickness:** Contractor's choice
4. **Geotextile:** Sheet
 - 4.1. **Manufacturer:** Terram or similar equivalent
 - 4.1.1. **Product reference:** Non woven geotextile membrane 1000
5. **GeoGrid:** As detailed in Clause 140 above
6. **Granular sub-base:** General Areas - Type 1 unbound mixture, as section Q20
 - 6.1. **Compacted thickness:** 150 mm plus 100mm capping
7. **Binder course:** AC 20
 - 7.1. **Paving grade:** AC 20 - DENSE BIN 40/60
 - 7.2. **Compacted thickness:** 60 mm, nominal
8. **Surface course:** ULTICOLOUR SMA 10mm for car parks, carriageways, bus lanes. Colour: Buff. Typical texture depth 1.1 -1.5mm.
 - 8.1. **Paving grade:** 100/150

- 8.2. Slip/ Skid resistance: No requirement
- 8.3. Compacted thickness: 40 mm nominal, 35 mm minimum at any point
- 9. Reclaimed content
 - 9.1. Standard: To BS EN 13108-8.
 - 9.2. Value (maximum): Surface course 10%, other courses 20%
- 10. Surface treatment: white lining as shown on 70057126_WSP_XX_XX_DR_CE_0103
- 11. Other requirements joints are painted with Clear binder - see installer guide..

Preparatory work/ requirements

220 Bituminous materials generally

- 1. Suppliers names: Submit.
 - 1.1. Timing (minimum): Two weeks before starting work.
- 2. Test certificates: At the time of delivery for each manufacturing batch submit certificate:
 - 2.1. Confirming compliance with this specification and the relevant standard.
 - 2.2. Stating full details of composition of mix.

240 Acceptance of surfaces

- 1. Surface: Sound, clean and suitably close textured.
- 2. Level tolerances: To BS 594987.
- 3. Kerbs and edgings: Complete, adequately bedded and haunched and to the required levels.

Laying

310 Laying generally

- 1. Preparation: Remove all loose material, rubbish and standing water.
- 2. Adjacent work: Form neat junctions. Do not damage.
- 3. Channels, kerbs, inspection covers etc: Keep clean.
- 4. New paving
 - 4.1. Keep traffic free until it has cooled to prevailing atmospheric temperature.
 - 4.2. Do not allow rollers to stand at any time.
 - 4.3. Prevent damage.
 - 4.4. Lines and levels: With regular falls to prevent ponding.
 - 4.5. Overall texture: Smooth, even and free from dragging, tearing or segregation.
 - 4.6. State on completion: Clean.

320 Adverse weather

- 1. Frozen materials: Do not use.
- 2. Suspend laying
 - 2.1. During freezing conditions
 - 2.2. If the air temperature reaches 0°C, or in calm dry conditions -3°C, on a falling thermometer.
 - 2.3. Hot rolled asphalt: During periods of continuous or heavy rain or if there is standing water on the base.

330 Levels

- 1. Permissible deviation from the required levels, falls and cambers (maximum): In accordance with BS 594987, clause 5.2.

340 Flatness/ Surface regularity

1. **Deviation of surface:** Where appropriate in relation to the geometry of the surface, the variation in gap under a 3 m straightedge placed anywhere on the surface to be not more than:
 - 1.1. **Base:** Machine laid, 25 mm
 - 1.2. **Binder course:** Machine laid, 13 mm
 - 1.3. **Surface course:** Machine laid, 7 mm
 - 1.4. Where a straightedge cannot be used the surface must be of a comparable standard of accuracy when judged by eye.

350 Contractor's use of pavements

1. **Before use**
 - 1.1. **Timing:** allow newly laid sections to cool before trafficking.
 - 1.2. **Open-grained surface:** Fill with 0/4 mm size coated grit. Remove surplus.
 - 1.3. **Finish:** Uncoated chipping and binder surface treatment.
2. **Preparation for final surfacing**
 - 2.1. **Timing:** Defer laying until as late as practicable.
 - 2.2. **Immediately before laying final surfacing:** Clean and make good the base/ binder course. Allow to dry.
 - 2.3. **Adhesion:** Tack coat to BS 434-1 or BS EN 13808
 - 2.3.1. **Application rate:** uniform without puddles
 - 2.3.2. **Accuracy:** Uniform, without puddles.
 - 2.4. **Finishing:** Allow emulsion to break completely before applying surface.

Completion

390 Documentation

1. **Standard:** BS EN 13108-1
 - 1.1. **Declaration of conformity:** Submit.
2. **Number of copies:** 2
3. **Submission:** Two weeks after request

Ω End of Section

Q25

Slab/ brick/ sett/ cobble pavings UNCHANGED

To be read with preliminaries/ general conditions

11 Laying pavings – general

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

16 Levels of paving

1. Permissible deviation from specified levels (generally)
 - 1.1. Generally: ± 6 mm.
2. Height of finished paving above features
 - 2.1. At gullies: +6 to +10 mm.
 - 2.2. At drainage channels and kerbs: +3 to +6 mm.

18 Regularity of paved surfaces

1. 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.
2. Joints between paving units or utility access covers
 - 2.1. Joints flush with the surface: difference in level between adjacent units to be no more than twice the joint width (with a 5mm max difference in level).
 - 2.2. 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.
 - 2.3. Unfilled joints: difference in level between adjacent units to be no greater than 2 mm.
3. Sudden irregularities: Not permitted.

21 Protection

1. Cleanliness: Keep paving clean and free from mortar droppings, oil and other materials likely to cause staining.
2. Materials storage: Do not overload pavings with stacks of materials.
3. Handling: Do not damage paving unit corners, arrises, or previously laid paving.
4. Mortar bedded pavings: Keep free from traffic after laying:
 - 4.1. Pedestrian traffic (minimum): 3 days
 - 4.2. Vehicular traffic (minimum):
5. Access: Restrict access to paved areas to prevent damage from site traffic and plant.

26A Natural stone slab paving system

1. Location: To entrance threshold.

2. Manufacturer: [Marshalls plc](#)
3. Contact details
 - 3.1. Address: Landscape House
Premier Way
Lowfields Business Park
Elland
West Yorkshire
HX5 9HT
 - 3.2. Telephone: [+44 \(0\)330 0574472](#)
 - 3.3. Web: [www.marshalls.co.uk](#)
 - 3.4. Email: [info@marshalls.co.uk](#)
4. Product reference: [Despina Granite Paving](#) or similar equivalent
5. Standard: CE marked, and manufactured In accordance with BS EN 1341: 2012
6. Stone denomination
 - 6.1. Petrological family: Grey to blue grey coarse grained granite
 - 6.2. Colour: Grey/ white tones
 - 6.3. Origin: Shandong Province, China
7. Physical properties
 - 7.1. Dimensions and associated tolerances
 - 7.1.1. [Physical Properties Dimensions And Associated Tolerances Nominal Sizes](#): W100 X D150 x L200mm.
 - 7.1.2. [Tolerances on plan dimension and thickness \(nominal\)](#): Paving Class 1 tolerances to all dimensions as standard. Setts Class 2 tolerances to all dimensions as standard. Kerbs Class 2 tolerances to all dimensions as standard. Others by agreement
 - 7.2. [Physical Properties Finish](#): Flamed and Tumbled finish
8. Performance requirements
 - 8.1. Slip Resistance: Dry slip resistance (to BS 14231): Fine picked: 97; flamed: 90; polished: 72. Wet slip resistance (to BS 14231): Fine picked: 73; flamed: 66; polished: 15
 - 8.2. Breaking load: 20.7 Mpa (Mean value to EN 12372: 2006 (Lev =13.6 Mpa))
 - 8.3. Water absorption (maximum): 0.19% (Mean value to EN 13755: 2008 (Hev =0.2%))
9. Subgrade improvement layer: Contractors choice
 - 9.1. Compacted thickness: Contractors choice
10. Base: Concrete as section Q21
 - 10.1. Thickness: 150mm. As shown on drawing 70057126_WSP_XX_XX_DR_LA_0006 Construction Details
11. Laying course: BEDDED ON DESIGNATION (i) MORTAR TO CLAUSE 2404.
12. Jointing: 5-10 MILL JOINTS WITH 3-6MM JOINT RECESS
 - 12.1. Bond: Stretcher bond in random courses

64 Geotextile sheet

1. Description: - Below Sub-base
2. Manufacturer: Contractor's choice
 - 2.1. Product reference: Non woven geotextile membrane 1000 terram or similar equivalent
3. Recycled content: Contractor's choice

72 Laying geotextile sheet overlays

1. Location: Immediately below the sub-base.

2. **Laying:** Fit neatly at edge restraints and other features that interrupt the laying course, e.g. drainage fittings, channels, manholes and kerbs.
3. **Edge detail:** Turn sheet up to form an upstand against features, height not less than thickness of the laying course.
4. **Width:** 4.5m
5. **Jointing:** Lap by 300 mm.

82 Tooled joints in mortar-bedded units

1. **Joints:** Completely filled with bedding mortar as work proceeds.
 - 1.1. **Joint width:** 5-10 mm
 - 1.2. **Finish:** 3-6 MM JOINT RECESS

Ω End of Section

Q28

Topsoil, growing media and ameliorants UNCHANGED

Clauses

2 To be read with preliminaries/ general conditions.

System outline

115 Topsoil system for turfing and seeding

1. **Description:** For all grassed areas
2. **Composition**
 - 2.1. **Soil:** Imported topsoil to BS 3882
 - 2.2. **Ameliorants:** Aggregates; Minerals and Organic materials
 - 2.3. **Accessories:** None

Products

300 Preparation materials generally

1. **Purity:** Free of pests and disease.
2. **Foreign matter:** On visual inspection, free of fragments and roots of aggressive weeds, sticks, straw, subsoil, pieces of brick, concrete, glass, wire, large lumps of clay or vegetation, and the like.
3. **Contamination:** Do not use topsoil contaminated with subsoil, rubbish or other materials that are:
 - 3.1. Corrosive, explosive or flammable.
 - 3.2. Hazardous to human or animal life.
 - 3.3. Detrimental to healthy plant growth.
4. **Subsoil:** In areas to receive topsoil or planting media, do not use subsoil contaminated with the above materials.
5. **Objectionable odour:** None.
6. **Give notice:** If any evidence or symptoms of soil contamination are discovered on the site or in topsoil or planting media to be imported.

305 Permitted materials

1. **Materials:** Bark and Composted bark
2. **Give notice:** before ordering or using.
3. **Declaration of compliance in accordance with BS EN 13650:** Required

310 Materials not permitted

1. **Materials:** Peat; Products containing peat; and Canal dredgings

315 Imported topsoil to BS 3882

1. **Description:** For grass seeding
2. **Quantity:** Provide as necessary to make up any deficiency of topsoil existing on site and to complete the work.
3. **Standard:** To BS 3882.
4. **Classification:** Multipurpose

- 4.1. Soil textural class to BS 3882, Figure 1: 0.6-2 mm, Premium grade suitable for end use: Residential without plant uptake
5. Source: Submit proposals
 - 5.1. Product reference: Submit proposals

345 Aggregates

1. Description: Drainage for hedgerow trench
2. Source: Contractor's choice
 - 2.1. Product reference: Pea gravel, 150mm depth
3. Reference, description and grading

345 Aggregates Type A

1. Manufacturer: [Aggregate Industries – Lytag](#)
2. Contact details
 - 2.1. Address: Drax Power Station
Selby
North Yorkshire
YO8 8PH
 - 2.2. Telephone: +44 (0)207 4995242
 - 2.3. Web: www.aggregate.com/our-businesses/lytag
 - 2.4. Email: sales@lytag.com
3. Product reference: [Lytag 0/4 mm](#)

380 Mycorrhizal inoculant

1. Description: FOR TREE PITS, HEDGEROW TRENCHES & PLANTING BEDS
2. Manufacturer: Contractor's choice
 - 2.1. Product reference: Contractor's choice

Execution

610 Topsoil analysis

1. Soil to be analysed: Imported topsoil
2. Soil analyst: Submit proposals
3. Samples: Collect in accordance with BS 3882.
4. Submit
 - 4.1. Declaration of analysis: In accordance with BS 3882, clause 6 and Table 1.
 - 4.2. Additional analysis: including information detailing each of the relevant parameters given in BS 3882, clause 6 and table 2. Ensure that the soil is tested for residential without plant uptake
 - 4.3. Report detailing soil analyst's recommendations.

615 Testing of materials

1. Material to be analysed: Excavated topsoil for re-use within landscape areas
2. Testing Site Won Soils:: Testing of topsoil at the edges of the existing car park has not identified any exceedances of public open space screening values. However, to ensure any site won topsoil is suitable for re-use within the landscaping areas, the Contractor shall be responsible for re-sampling and testing any stockpiles of site won topsoil for a standard suite of determinands detailed in Appendix A. It is envisaged that less than 100m3 of site won topsoil will be re-used within the scheme and therefore 3 soil samples are considered sufficient.

3. **Testing Imported topsoil:** Imported topsoils shall be tested for the same determinands at a frequency of 1 sample per 250m³ and a minimum of 3 samples per source.

620 Importing topsoil

1. **Give notice:** Before stripping topsoil for transfer to site.
 - 1.1. Notice period: 2 days

625 Sample loads

1. **Description:** For imported topsoil
2. **Deliver to site a sample load:** of 5 kg
3. **Give notice:** Allow inspection before making further deliveries to site. Retain for comparison with subsequent loads.
 - 3.1. Notice period: 2 days

630 Documentation for imported topsoil

1. **Description:** for soft landscape areas
2. **Timing:** Submit at handover.
3. **Contents**
 - 3.1. Full description of all soil components.
 - 3.2. Record of source for all soil components.
 - 3.3. Record drawings showing the location and depth of all soils by type and grade.
 - 3.4. **Declaration of analysis:** in accordance with BS 3882, clause 6 and Table 1.
4. **Number of copies:** 2 or an electronic

650 Notice

1. **Give notice before**
 - 1.1. Setting out.
 - 1.2. Spreading topsoil.
 - 1.3. Applying herbicide.
 - 1.4. Applying fertilizer.
 - 1.5. Visiting site during maintenance period.
2. **Period of notice:** Two working days

655 Mechanical tools

1. **Restrictions:** Do not use within 100 mm of tree and plant stems.

660 Grading subsoil for:

1. **Description:** Tree pits, hedgerow trench and planting areas
2. **Standard:** In accordance with BS 8601.
3. **General:** Grade to smooth flowing contours to achieve specified finished levels of topsoil.
4. **Areas of thicker topsoil:** Excavate locally.
5. Avoid compaction.
6. **Excess subsoil:** Remove.

665 Subsoil surface preparation for: Tree Pits

1. **Description:** Tree Pits

2. **Standard:** In accordance with BS 3882.
3. **General:** Excavate and/ or place fill to required profiles and levels, as section D20.
4. **Loosening**
 - 4.1. When ground conditions are sufficiently dry to allow breaking up of soils, loosen thoroughly to specified depth
 - 4.1.1. Light and noncohesive subsoils: 300 mm
 - 4.1.2. Stiff clay and cohesive subsoils: 450 mm
 - 4.1.3. Rock and chalk subgrades: Lightly scarify to promote free drainage.
 - 4.2. **Wet conditions:** Do not loosen subsoils.
5. **Stones:** Immediately before spreading topsoil, remove stones larger than 50 mm.
6. **Remove from site:** Arisings, contaminants and debris and Builders rubble

665A Subsoil surface preparation for: hedgerow trenches and planting areas

1. **Description:** hedgerow trenches and planting areas
2. **Standard:** In accordance with BS 3882.
3. **General:** Excavate and/ or place fill to required profiles and levels, as section D20.
4. **Loosening**
 - 4.1. When ground conditions are sufficiently dry to allow breaking up of soils, loosen thoroughly to specified depth
 - 4.1.1. Light and noncohesive subsoils: 150 mm
 - 4.1.2. Stiff clay and cohesive subsoils: 300 mm
 - 4.1.3. Rock and chalk subgrades: Lightly scarify to promote free drainage.
 - 4.2. **Wet conditions:** Do not loosen subsoils.
5. **Stones:** Immediately before spreading topsoil, remove stones larger than 50 mm.
6. **Remove from site:** Arisings, contaminants and debris and Builders rubble

670 Inspecting formations

1. **Give notice:** Before spreading topsoil for seeded areas.
2. **Notice period:** 7 days

675 Preparation of undisturbed topsoil

1. **Standard:** In accordance with BS 4428.
 - 1.1. **Grading and cultivation:** Category A
2. **Hard ground:** Break up thoroughly.
3. **Clearing:** Remove visible roots and large stones with a diameter greater than 50 mm.
4. **Areas covered with turf or thick sward:** Plough or dig over to full depth of topsoil.
5. **Fallow period (minimum):** One month
 - 5.1. **Weed control:** At appropriate times re-cultivate at fortnightly intervals to suppress weed growth.

680 Surplus topsoil to be retained

1. **Generally:** Spread and level on site:
 - 1.1. **Locations:** As directed by CA
 - 1.2. **Protected areas:** Do not raise soil level within root spread of trees that are to be retained.
Recommendation that chemical testing to be undertaken prior topsoil is redistributed

685 Surplus materials to be removed

1. Topsoil removal from site: Topsoil remaining after completion of all landscaping work
2. Subsoil, stones, debris, wrapping material, canes, ties, temporary labelling, rubbish, prunings and other arisings: Remove.

690 Topsoil storage heaps

1. Location: As directed by CA
2. Height (maximum): 1.5 m
3. Width (maximum): 5.0 m
 - 3.1. Formation: Loose tip and shape from the side only, without running machinery on the heap at any time.
4. Protection
 - 4.1. Do not place any other material on top of storage heaps.
 - 4.2. Do not allow construction plant to pass over storage heaps.
 - 4.3. Prevent compaction and contamination, by fencing and covering as appropriate.

700 Grading of topsoil

1. Topsoil condition: Reasonably dry and workable.
2. Contours: Smooth and flowing, with falls for adequate drainage.
 - 2.1. Hollows and ridges: Not permitted.
3. Give notice: If required levels cannot be achieved by movement of existing soil.

705 Handling topsoil

1. Standard: In accordance with BS 3882.
2. Aggressive weeds: Give notice and obtain instructions before moving topsoil.
3. Plant: Select and use plant to minimize disturbance, trafficking and compaction.
4. Contamination: Do not mix topsoil with:
 - 4.1. Subsoil, stone, hardcore, rubbish or material from demolition work.
 - 4.2. Other grades of topsoil.
5. Multiple handling: Keep to a minimum. Use or stockpile topsoil immediately after stripping.
6. 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

710 Spreading topsoil on:

1. Description: Grassed areas
2. Standard: In accordance with BS 3882.
3. Temporary roads/ surfacing: Remove before spreading topsoil.
4. Layers
 - 4.1. Depth (maximum): 150 mm.
 - 4.2. Gently firm each layer before spreading the next.
5. Depth after firming and settlement: 150 mm
6. Crumb structure: Do not compact topsoil. Preserve a friable texture of separate visible crumbs wherever possible.

715 Loose tipping of topsoil

1. Standard: In accordance with BS 3882.

2. **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.

718 Final cultivation

1. **Description:** For grass seeding
2. **Compacted topsoil:** Break up to full depth.
3. **Tilth:** Loosen, aerate and break up topsoil to a tilth suitable for blade grading.
4. **Depth:** 150 mm
5. **Particle size (maximum):** 10 mm
6. **Timing:** Within a few days before planting
7. **Weather and ground conditions:** Suitably dry.
8. **Surface:** Leave regular and even.
9. **Levels:** 50 mm above adjoining surfaces
10. **Undesirable material brought to the surface**
 - 10.1. Remove visible weeds.
 - 10.2. Remove roots and large stones with any dimension exceeding 50 mm.

720 Finished levels of topsoil after settlement

1. **In relation to adjoining paving, kerbs or hard surfaces:** 25 mm above
2. **In relation to dpc of adjoining buildings:** Not less than 150 mm below.
3. **In relation to adjacent grass areas:** 25 mm above
4. **Seeded areas:** Extend cultivation into existing adjacent grassed areas sufficient to ensure full marrying in of levels.
5. **Sportsfields:** To even levels and within the following permitted deviations:
 - 5.1. From levels or gradients shown on drawings: ± 75 mm.
 - 5.2. From line between boning rods 30 m apart: ± 25 mm.
6. **Within root spread of existing trees and shrubs to be retained:** Do not dig or cultivate.
7. **Adjoining soil areas:** Marry in.
8. **Thickness of turf or mulch:** Included.

840 Applying mycorrhizal inoculant

1. **Description:** To Tree pits, hedgerow trenches and planting areas
2. **Depth:** 150 mm

845 Applying loose mulch

1. **Description:** FOR TREE PITS, FOR PLANTING BEDS & HEDGEROW TRENCHES
2. **Timing:** Immediately after planting
3. **Preparation:** Clear all weeds. Ensure that soil is thoroughly moistened, applying water where necessary.
4. **Coverage of mulch (minimum)**
 - 4.1. **Planting beds (depth):** 75 mm depth
 - 4.2. **Trees:** 75 mm depth
5. **Finished level of mulch:** 50 mm below adjacent grassed or paved areas

Completion

920 Applying mulch

1. **Timing:** FOR TREE PITS, FOR PLANTING BEDS & HEDGEROW TRENCHES
2. **Watering:** Ensure that soil is thoroughly moistened prior to mulching, applying water where necessary.
3. **Planting beds:** Re-mulch.
 - 3.1. **Depth (minimum):** 75 mm
4. **Trees:** Remulch.
 - 4.1. **Depth (minimum):** 75 mm

Ω End of Section

Q30

Seeding/turfing **UNCHANGED**

Clauses

2 To be read with preliminaries/general conditions.

General information/requirements

115 Seeded and turfed areas

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

120 Climatic conditions

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

146 Watering

1. **Quantity:** Wet full depth of topsoil.
2. **Application:** Even and without displacing seed, seedlings or soil.
3. **Frequency:** In the event of insufficient rainfall within 24-48 hours after each application of fertiliser and at other times as instructed by the CA

150 Water restrictions

1. **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.

160 Notice

1. **Give notice before**
 - 1.1. Setting out.
 - 1.2. Applying herbicide.
 - 1.3. Applying fertilizer.
 - 1.4. Preparing seed bed.
 - 1.5. Seeding or turfing.
 - 1.6. Visiting site during maintenance period.
2. **Period of notice:** 2 working days

170 Setting out

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

Preparation

210 Herbicide

1. **Description:** For all grassed areas
2. **Type:** Suitable for suppressing perennial weeds.
3. **Timing:** Allow fallow period before cultivation.

3.1. Duration: As manufacturer's recommendation

250 Cultivation

1. Description: For all grassed areas
2. Compacted topsoil: Break up to full depth
3. Soil ameliorant / conditioner / fertiliser: Fully incorporate into topsoil to a depth of 200mm
4. Tilth: reduce top 100mm of topsoil to a tilth suitable for blade grading, particle size 10mm (maximum)
5. Material brought to the surface: remove stones and clay balls larger than 50mm in any dimension, roots, tufts of grass and debris.

250 Soil requirements

1. Type
 - 1.1. Seeded areas: Soil for grass swards, as section Q28
 - 1.2. Turfed areas: N/A
 - 1.3. Reinforced grass areas: N/A

275 Fertiliser for new grassed areas

1. Description: All grassed areas
2. Type: Pre seeding fertiliser of composition 6:9:6 N:P:K
3. Supplier British Seed Houses (Tel 01522 868 714) or similar approved
4. Reference: BSH 1
5. Application: Before final cultivation and 3-5 days before seeding
6. Coverage: Spread evenly at 70g/m²

Seeding

310 Grass seed

1. Description: To grassed areas at entrance
2. Mixture: A22 Low Maintenance
3. Application rate: 50 g/m²

311 Grass seed

1. Description: For grass areas
2. Supplier: Germinal Amenity (Tel: 01522 868 714) or equivalent approved
 - 2.1. Mixture reference: A4 Low Maintenance Areas
3. Application rate: 35 g/m²

319 Quality of seed

1. Description: For all grassed areas
2. Freshness: Produced for the current growing season.
3. Certification: Blue label certified varieties.
 - 3.1. Standard: EC purity and germination regulations.
 - 3.2. Official Seed Testing Station certificate of germination, purity and composition: Submit when requested.
4. Samples of mixtures: Submit when requested.

330 Sowing

1. **General:** Establish good seed contact with the root zone.
2. **Method:** Manually broadcast, raked and rolled
 - 2.1. **Distribution:** 2 equal sowings at right angles to each other

335 Grass sowing season

1. **Grass seed generally:** April to June or August to October

340 Pre-emergent herbicide

1. **Description:** For all grassed areas
2. **Standard:** Pesticide Safety Directorate approved.
3. **Application rate:** In accordance with manufacturer's written recommendation.
 - 3.1. **Timing:** Immediately after sowing.

352 Edges to seeded areas

1. **Description:** Adjacent to paving, paths, planting beds and tree pits
2. **Timing:** After seeded areas are well established.
3. **Edges:** Clean straight lines or smooth curves.
 - 3.1. **Mulch and soil:** Draw back to permit edging.
4. **Arisings:** Remove.
5. **Completion:** Respread soil and mulch.

Turfing - Not Used

Protecting/cutting

530 First cut of grassed areas

1. **Timing:** When grass is reasonably dry.
 - 1.1. **Height of initial growth:** 40-75 mm
2. **Preparation**
 - 2.1. **Debris and litter:** Remove.
 - 2.2. **Stones and earth clods larger than 25 mm in any dimension:** Remove
3. **Height of first cut:** 40 mm
4. **Mower type:** Rotary
5. **Arisings:** Remove from site

535 Second cut of grassed areas

1. **Timing:** When grass is reasonably dry.
 - 1.1. **Height of initial growth:** 40-75 mm
2. **Preparation**
 - 2.1. **Debris and litter:** Remove.
 - 2.2. **Stones and earth clods larger than 25 mm in any dimension:** Remove
3. **Height of first cut:** 40 mm
4. **Mower type:** Rotary
5. **Arisings:** Remove from site

550 Areas not to be cut

1. Do not cut:
2. Meadow grass containing wild flowers.

590 Cleanliness

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

Maintenance

610 Failures of seeding/ turfing

1. Duration: Carry out the following operations from completion of seeding/ turfing until: practical completion.
2. Defective materials or workmanship: Areas that have failed to thrive.
 - 2.1. Exclusions: Theft or malicious damage.
3. Method of making good: Recultivation and reseeding/ returfing.
4. Timing of making good: Submit proposals

620 Maintaining

1. Description: General grassed areas
2. Duration: Carry out the following operations from completion of seeding/ turfing until: practical completion.
3. Maximum height of growth at any time: 50 mm
4. Preparation: Before each cut remove all litter and debris.
5. Cutting: As and when necessary to a height of 35 mm.
 - 5.1. Arisings: Remove
6. Bulb planting areas: Do not cut until bulb foliage has died down.
7. Trimming: All edges.
 - 7.1. Arisings: Remove.
8. Weed control: Substantially free of broad leaved weeds.
 - 8.1. Method: Application of a suitable selective herbicide.
9. Stones brought to the surface: Remove regularly.
 - 9.1. Size: Exceeding 25 mm in any dimension.
10. Areas of settlement: Make good.
11. Watering: As clause Q30.146

Ω End of Section

Q31

External planting **UNCHANGED**

Clauses

2 To be read with preliminaries/general conditions.

General information/ requirements

112 Site clearance generally

1. **General:** Remove rubbish, concrete, metal, glass, decayed vegetation and contaminated topsoil.
2. **Stones:** Remove those with any dimension exceeding 50 mm.
3. **Contamination:** Remove material containing toxins, pathogens or other extraneous substances harmful to plant, animal or human life.
4. **Vegetation:** Clear scrub to ground level by flail mowing and remove arisings; retain and protect trees indicated on drawings
5. **Large roots:** Grub up and dispose of without undue disturbance of soil and adjacent areas.
6. **Additional requirements:** N/A

118 Soil conditions

1. **Soil for cultivating and planting:** Moist, friable and (except in aquatic/ marginal planting) not waterlogged.
2. **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

1. **General:** Carry out the work while soil and weather conditions are suitable.
 - 1.1. **Strong winds:** Do not plant.

125 Times of year for planting

1. **Deciduous trees and shrubs:** Late October to late March.
2. **Conifers and evergreens:** September/ October or April/ May.
3. **Herbaceous plants (including marginal):** September/ October or March/ April.
4. **Container grown plants:** At any time if ground and weather conditions are favourable.
 - 4.1. **Watering and weed control:** Provide as necessary.
5. **Dried bulbs, corms and tubers:** September/ October.
6. **Colchicum (crocus):** July/ August.
7. **Green bulbs:** After flowering in spring.
8. **Wildflower plugs:** Late August to mid November or March/ April.
9. **Aquatic plants:** May/ June or September/ October.

130A Mechanical tools

1. **Restrictions:** Do not use within the area of the tree canopy

145 Watering

1. **Quantity:** Wet full depth of topsoil.
2. **Application:** Even and without damaging or displacing plants or soil.

3. **Frequency:** As necessary to ensure establishment and continued thriving of planting.

150 Water restrictions

1. **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.

160 Notice

1. **Give notice before**
 - 1.1. Setting out.
 - 1.2. Applying herbicide.
 - 1.3. Applying fertilizer.
 - 1.4. Delivery of plants/ trees.
 - 1.5. Planting shrubs.
 - 1.6. Planting trees into previously dug pits.
 - 1.7. Watering.
 - 1.8. Visiting site during maintenance period.
2. **Period of notice:** Two working days

170 Soil requirements

1. **Type**
 - 1.1. **Planted beds:** Planting bed soil system, as section Q28
 - 1.2. **Tree pits, shrub pits and other backfilling:** Plant pit backfilling soil system, as section Q28
 - 1.3. **External container planting:** n/a
 - 1.4. **Mulch applied after planting:** Mulching and top dressing system, as section Q28

200 Plants/ Trees – general

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

216 Plants/ Trees – specification criteria

1. **Name, forms, dimensions and other criteria:** To the relevant part of BS 3936.

235 Container grown plants/ Trees

1. **Growing medium:** With adequate nutrients for plants to thrive until permanently planted.
2. **Plants:** Centred in containers, firmed and well watered.
3. **Root growth:** Substantially filling containers, but not root bound, and in a condition conducive to successful transplanting.
4. **Hardiness:** Grown in the open for at least two months before being supplied.

5. **Containers:** With holes adequate for drainage when placed on any substrate commonly used under irrigation systems.

246 Labelling and information

1. **Standard:** To BS 3936.

255 Plants/ Trees reserved at supplier's premises

1. **Types/ Species:** As drawing: 70057126_WSP_XX_XX_DR_LA_0003
2. **Predelivery inspection:** Give notice.
3. **Labelling:** Identify inspected plants/ trees as reserved for use on this project.

260 Plant/ Tree substitution

1. **Plants/ trees unobtainable or known to be likely to be unobtainable at time of ordering:** Subject to Landscape Architect's approval
 - 1.1. **Price.**
 - 1.2. **Difference from specified plants/ trees.**
2. **Approval:** Obtain before making any substitution.

265 Plant handling, storage transport and planting

1. **Standard:** To CPSE 'Handling and establishing landscape plants'.
2. **Frost:** Protect plants from frost.
3. **Handling:** Handle plants with care. Protect from mechanical damage and do not subject to shock, e.g. by dropping from a vehicle.
4. **Plant packaging:**
5. **Packaging of bulk quantities:**
6. **Planting:** Upright or well balanced with best side to front.

280 Treatment of tree wounds

1. **Cutting:** Keep wounds as small as possible.
 - 1.1. **Cut cleanly back to sound wood using sharp, clean tools.**
 - 1.2. **Leave branch collars. Do not cut flush with stem or trunk.**
 - 1.3. **Set cuts so that water will not collect on cut area.**
2. **Fungicide/ Sealant:** Do not apply unless instructed.

285 Protection of existing grass

1. **General:** Protect areas affected by planting operations using boards/ tarpaulins.
 - 1.1. **Excavated or imported material:** Do not place directly on grass.
 - 1.2. **Duration:** Minimum period.

290 Surplus material

1. **Subsoil, stones, debris, wrapping material, canes, ties, temporary labelling, rubbish, prunings and other arisings:** Stones larger than 50mm remove.

Plant containers - Not Used

Preparation of planting beds/ planting materials

300 Herbicide

1. **Description:** TO CLEAR EXISTING VEGETATION
2. **Locations:** As drawing 70057126_WSP_XX_XX_DR_LA_0008_C01 Site Clearance
3. **Type:** Suitable for suppressing perennial weeds.
4. **Timing:** Allow fallow period before cultivation.
 - 4.1. **Duration (minimum):** As manufacturer's recommendation

305 Weed control

1. **Description:** FOR INVASIVE NON-NATIVE WEEDS
2. **Locations:** All planting areas
3. **General:** Prevent weeds from seeding and perennial weeds from becoming established, by contractor's choice of herbicide.

385 Mulch matting/ Geotextile fabric

1. **Description:** Groundcover Weed Control Fabric 100gsm, black woven polypropylene, 100g/m2, with appropriate fixings
2. **Manufacturer:** (sample supplier Green Tech Tel: 01423 332100)
3. **Timing:** Lay before planting.
4. **Watering:** Water soil thoroughly before laying.
5. **Laying:** In close contact with soil surface. Lap or butt joints as recommended by manufacturer, with no gaps.
6. **Planting:** Cut neat slits or flaps. Refit closely around plant stems.
7. **Overlay:** Mulching planting beds

Planting shrubs/ herbaceous plants/ bulbs

401 Regular plant layout

1. **Description:** TO SHRUB PLANTING
2. **Spacing:** As drawing: 70057126_WSP_XX_XX_DR_LA_0003
3. **Density:** As drawing: 70057126_WSP_XX_XX_DR_LA_0003

405 Shrub planting pits

1. **Timing:** Excavate 1-2 days (maximum) before planting.
2. **Sizes:** As plant schedule
3. **Pit bottom improvement** Break up to a depth of 150 mm, incorporating 25 g of slow release fertilizer per planting pit.

470 Formal hedges

1. **Shrubs for hedges:** Consistent in species, cultivar and clone to ensure a uniform hedge.
2. **Planting:** In trenches large enough to take full spread of roots. Set out plants evenly.
3. **Root barrier:** Refer to clause Q31.510A

480 After planting

1. **Watering:** Immediately after planting, thoroughly and without damaging or displacing plants or soil.
2. **Firming:** Lightly firm soil around plants and fork and/ or rake soil, without damaging roots, to a fine tilth with gentle cambers and no hollows.
3. **Top dressing:** Mulching and top dressing system, as section Q28
 - 3.1. **Depth:** 75mm

Planting trees

500 Tree planting

1. **Standard:** Prepare trees and transplant in accordance with BS 8545

505 Tree pits

1. **Sizes:** As drawing 70057126_WSP_XX_XX_DR_LA_0003
2. **Sloping ground:** Maintain horizontal bases and vertical sides with no less than minimum depth throughout.
3. **Excavated material:** Separate topsoil and subsoil material and stockpile for backfilling
4. **Pit bottoms:** Excavate with slightly raised centre: Break up base to a depth of 150 mm.
 - 4.1. **Treatment:** Soil ameliorant worked into pit bottoms
5. **Pit sides:** Scarify.
6. **Backfilling material:** Proprietary tree backfilling material, as section Q28

510A Tree Pit and Hedgerow Trench root barriers

1. **Locations:** As drawing: 70057126_WSP_XX_XX_DR_LA_0003
2. **Manufacturer:** [GreenBlue Urban Ltd](#)
 - 2.1. **Contact details**
 - 2.1.1. **Address:** Northpoint
Compass Park
Junction Road
Bodiam
East Sussex
TN32 5BS
 - 2.1.2. **Telephone:** +44 (0)1580 830800
 - 2.1.3. **Web:** www.greenblue.com
 - 2.1.4. **Email:** enquiries@greenblueurban.com
 - 2.2. **Product reference:** [ReRoot Root Barriers](#)
3. **Type:** RER600
4. **Roll depth:** 600 mm

512 Tree pit irrigation and ventilation accessories

1. **Locations:** To all tree pits
2. **Manufacturer:** Wavin
 - 2.1. **Product reference:** Wavin coil watering system
3. **Type:** Perforated plastics irrigation pipe with inlet
4. **Pipe diameter:** Contractor's choice
5. **Ring diameter:** Contractor's choice

6. Inlet: Black plastics, with cap
7. Installation
 - 7.1. Pipe: Lay in loop above root ball with slight fall away from inlet pipe. Trim length to ensure a close fit in the tree pit. Connect both ends of pipe securely into plastics tee junction on inlet.
 - 7.2. Top cap of inlet: Protruding slightly above finished surround level.
 - 7.3. Backfill material: Carefully compact in layers.

550 Double staking for

1. Description: ALL TREES
2. Staking
 - 2.1. Position: Either side of tree position and perpendicular to wind direction.
 - 2.2. Driving: Vertically to be driven into undisturbed ground min 600mm
 - 2.3. Backfilling: Consolidate material around stake.
 - 2.4. Firming: Sufficiently firm to prevent movement of the rootball/ rootstock.
3. Height of stakes: 2no. 100 Ø x 2000mm tree stakes, peeled but untreated straight lengths of larch or sweet chestnut pointed one end.
4. Horizontal bracing: 75x50mm untreated timber crossbar nailed to stakes.
 - 4.1. Fixing: 2no. 100mm round headed nails per stake. Approved tree tie secured to crossbar with 2no. 40mm round headed nails
5. Ties: Tree to be secured to crossbar using Arbortie tree tie by Greenleaf or similar.
6. Tying: A Holdfast rubber block or similar spacer to be used to prevent abrasion to the tree.
7. Nails for fixing ties, belts and webbing: To BS 1202-1, galvanized, minimum 25 mm long and with 10 mm diameter heads.
8. Nails for fixing cross bars: 40mm round headed nails

576 Tree pit surfacing – loose fill

1. Surfacing material: Mulch, as section Q28
2. Area: 1200 x 1200 mm square
3. Depth: 75 mm
4. Watering: Water soil thoroughly before laying.
5. Installation: Ensure the base of the tree stem is kept free from loose filled material.

Woodland/ matrix/ buffer zone planting - Not Used

Protecting/ maintaining/ making good defects

710 Maintenance

1. Duration: Carry out the operations in the following clauses from completion of planting until practical completion.
2. Frequency of maintenance visits: When instructed

720 Failures of planting

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

3. **Timing of making good:** During the next suitable planting season

740 Cleanliness

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

750 Planting maintenance generally

1. **Weed control:** Maintain weed free area around each tree and shrub.
 - 1.1. **Diameter (minimum):** The larger of 1 m or the surface of original planting pit.
 - 1.2. **Keep planting beds clear of weeds:** By maintaining full thickness of mulch, By use of suitable herbicides
2. **Planted areas:** Fork over beds as necessary to keep soil loose, with gentle cambers and no hollows. Take care not to reduce depth or effect of mulch.
3. **Precautions:** Ensure that trees and shrubs are not damaged by use of mowers, nylon filament rotary cutters and similar powered tools.
4. **Firming up:** Gently firm loosened soil around trees/ shrubs. Straighten leaning trees/ shrubs.
5. **Trees:** Spray crown when in leaf during warm weather.
 - 5.1. **Timing:** After dusk.
6. **Tree accessories:** Check condition of stakes, ties, guys, guards and irrigation and ventilation systems.
 - 6.1. **Broken or missing items:** Replace.
 - 6.2. **Loose stakes:** Re-firm in the ground or replace as necessary to provide support to the tree.
 - 6.3. **Loose guys:** Re-firm anchor points and adjust as necessary to provide support to the tree.
 - 6.4. **Ties:** Adjust to accommodate growth and prevent constriction or abrasion.
 - 6.5. **Damage to bark:** Cut back neatly with sharp knife. Prevent further damage.
 - 6.6. **Frequency of checks:**
7. **Watering:**

760 Planting maintenance – pruning

1. **General:** Prune to promote healthy growth and natural shape.
 - 1.1. **Dead, dying, diseased wood and suckers:** Remove.
 - 1.2. **Timing:** As appropriate to the species
 - 1.3. **Trees:** Favour a single central leading shoot.
2. **Arisings:** Remove.

780 Maintenance instructions

1. **General:** Before end of the maintenance period, submit printed instructions recommending procedures to be established by the Employer for maintenance of the planting work for one full year: Provide details of any special procedures to be carried out.

790 Final mulching

1. **Timing:** At end of the maintenance period.
2. **Watering:** Ensure that soil is thoroughly moistened prior to remulching, applying water where necessary.
3. **Planting beds:** Remulch.
4. **Depth (minimum):** 75 mm

5. Trees: Remulch.
6. Depth (minimum): 75 mm

Ω End of Section

Q35

Landscape maintenance UNCHANGED

Clauses - Not Used

Generally

110 Notice

1. Give notice before
 - 1.1. Application of herbicide.
 - 1.2. Application of fertilizer.
 - 1.3. Watering.
 - 1.4. Each site maintenance visit.
2. Period of notice: 2 days

130 Reinstatement

1. Damage or disturbance to soil structure, planting, grass, fencing, hard landscaping, structures or buildings: Reinstatement to original condition.

140 Control of mammalian pests

1. Specialist firms: Submit proposals
 - 1.1. Method: Employ only approved firms and methods

156 Watering

1. Supply: Potable mains water
2. Quantity: Wet full depth of topsoil
3. Application: Do not damage or loosen plants.
4. Compacted soil: Loosen or scoop out, to direct water to rootzone.
5. Frequency: When instructed

160 Water restrictions

1. General: If water supply is, or is likely to be, restricted by emergency legislation, submit proposals for an alternative suitable source of water. Obtain instructions before proceeding.

170 Disposal of arisings

1. General: Unless specified otherwise, dispose of arisings as follows:
 - 1.1. Biodegradable arisings: Remove to recycling facility
 - 1.2. Grass cuttings: Remove to recycling facility
 - 1.3. Tree roots and stumps: Remove from site
 - 1.4. Shrub and tree prunings: Remove to recycling facility
 - 1.5. Litter and nonbiodegradable arisings: Remove from site

190 Litter

1. Extraneous rubbish not arising from the contract work: Collect and remove from site.

195 Protection of existing grass

1. **General:** Protect areas affected by maintenance operations using boards/tarpaulins. Do not place excavated or imported materials directly on grass.

197 Cleanliness

1. **Soil and arisings:** Remove from hard surfaces.
2. **General:** Leave the works in a clean, tidy condition at completion and after any maintenance operations.

Grassed areas

210 Maintenance of grassed areas

1. **General:** Maintain turf in a manner appropriate to the intended use.
2. **Soil and grass**
 - 2.1. **Condition:** Maintain a healthy vigorous sward, free from disease, fungal growth, discolouration, scorch or wilt.
 - 2.2. **Waterlogging and compaction:** Prevent.
 - 2.3. **Damage:** Repair trampling, abrasion or scalping.
3. **Ornamental lawns:** Maintain reasonably free from moss, excessive thatch, weeds, frost heave, worm casts and mole hills.
 - 3.1. **Edges:** Neat and well defined, in clean straight lines or smooth flowing curves.
4. **Litter and fallen leaves:** Remove regularly to maintain a neat appearance.

220 Grass cutting generally

1. **Before mowing:** Remove litter, rubbish and debris.
2. **Finish:** Neat and even, without surface rutting, compaction or damage to grass.
3. **Edges:** Leave neat and well defined. Neatly trim around obstructions.
4. **Adjoining hard areas:** Sweep clear and remove arisings.
5. **Drought or wet conditions:** Obtain instructions.

226 Tree stems

1. **Precautions:** Do not allow nylon filament rotary cutters and other mechanical tools closer than 100 mm to the stem of any tree.
 - 1.1. **Operations close to stems:** Complete using hand tools.

250 Leaf removal

1. **Operations:** Collect fallen leaves.
2. **Special requirements:** None
3. **Disposal:** Remove from site for recycling

255 First cut of

1. **Description:** All grassed areas
2. **Height of initial growth:** 50 mm - 75mm
3. **Preparation**
 - 3.1. **Debris and litter:** If grass growth is more than 50mm remove all arising's.
 - 3.2. **Stones and earth clods larger than 25 mm in any dimension:** Remove
4. **Height of first cut:** 50 mm

5. Mower type: Rotary
6. Arisings: Remove

265 Mowing general areas

1. Grass height: Maintain a height of 38mm or less.
2. Arisings: Remove from site

270 Mowing rough grassed areas

1. Grass height: Maintain between 50 and 75 mm
2. Arisings: Remove from site

320 Levelling hollows and bumps in turf

1. Standard: To BS 7370-3, clauses 12.4 and 12.5.

330 Selective herbicide

1. Location: As drawing: 70057126_WSP_XX_XX_DR_LA_0003
2. Herbicide: Area to be treated with herbicide prior to establishing grass.

350 Fertilizer – spring application

1. Type: 15:10:10 N:P:K
2. Application rate: 350 Kg / ha

360 Fertilizer – autumn application

1. Type: 5 :10 :10 N:P:K
2. Application rate: 500 Kg/ha

Flower beds/ seasonal beddings

470 Flower beds generally

1. Operations
 - 1.1. Remove: Dead flower heads, fallen leaves, litter and debris.
 - 1.2. Weeds: Thoroughly hand weed.
 - 1.3. Cultivate: Lightly hoe.
 - 1.4. Trim: Clip grass edges.
2. Fungicide: Not required
3. Insecticide: Not required

Shrubs/trees/hedges

500 Establishment of new planting

1. Duration: Two years
2. Weed control
 - 2.1. Method: Keep planting beds clear of weeds by maintaining full thickness of mulch and hand weeding.
 - 2.2. Area: Maintain a weed free area around each tree and shrub, minimum diameter the larger of 1 m or the surface of the original planting pit.
3. Soil condition: Fork over beds to keep soil loose, with gentle cambers and no hollows. Do not reduce depth or effect of mulch.

4. **Watering:** When instructed

510 Tree stakes and ties

1. **Inspection/ Maintenance times:** As scheduled and immediately after strong winds
2. **Stakes**
 - 2.1. Replace loose, broken or decayed stakes to original specification.
 - 2.2. If longer than half of clear tree stem height, cut to this height in spring. Retie to tree firmly but not tightly with a single tie.
3. **Ties:** Adjust, refix or replace loose or defective ties, allowing for growth and to prevent chafing.
 - 3.1. Where chafing has occurred, reposition or replace ties to prevent further chafing.
4. **Removal of stakes and ties:** When instructed
 - 4.1. Fill stake holes with lightly compacted soil.

520 Refirming of trees and shrubs

1. **Timing:** After strong winds, frost heave and other disturbances.
2. **Refirming:** Tread around the base until firmly bedded.
3. **Collars in soil at base of tree stems, created by tree movement:** Break up by fork, avoiding damage to roots. Backfill with topsoil and refirm.

525 Tree guards

1. **Loose or defective guards:** Adjust, refix or replace to original specification and to prevent chafing.

537 Nesting wild birds

1. **Survey:** Not required
2. **Accidental disturbance:** Report immediately.

540 Pruning generally

1. **Pruning:** In accordance with good horticultural and arboricultural practice.
 - 1.1. **Removing branches:** Do not damage or tear the stem or bark.
 - 1.2. **Wounds:** Keep as small as possible and cut cleanly back to sound wood.
 - 1.3. **Cutting:** Make cuts above and sloping away from an outward facing healthy bud, angled so that water will not collect on cut area.
 - 1.4. **Larger branches:** Prune neither flush nor leaving a stub, but using the branch bark ridge or branch collar as a pruning guide.
2. **Appearance:** Thin, trim and shape each specimen appropriately to species, location, season, and stage of growth, leaving a well balanced natural appearance.
3. **Tools:** Use clean sharp secateurs, hand saws or other approved tools. Trim off ragged edges of bark or wood with a sharp knife.
4. **Disease or infection:** Give notice if detected.
5. **Growth retardants, fungicide or pruning sealant:** Do not use unless instructed.

545 Pruning of excessive overhang

1. **Timing:** As instructed
2. **Operations:** Remove growth encroaching onto grassed areas, paths, roads, signs, sightlines and road lighting luminaires.
3. **Special requirements:** None

555 Pruning trees and shrubs

1. Standard: To BS 7370-4.

570 Formative pruning of young trees

1. Standard: Type and timing of pruning operations to suit the plant species.
2. Time of year: Do not prune during the late winter/ early spring sap flow period.
3. Young trees up to 4 m high
 - 3.1. Crown prune by removing dead branches and reducing selected side branches by one third to preserve a well balanced head and ensure the development of a single strong leader.
 - 3.2. Remove duplicated branches and potentially weak or tight forks. In each case cut back to live wood.
4. Whips or feathered trees: Do not prune.
5. Operatives: Approved specialist contractor

575 Pruning ornamental shrubs

1. General: Prune to encourage healthy and bushy growth and desirable ornamental features, e.g. flowers, fruit, autumn colour, stem colour.
2. Suckers: Remove by cutting back level with the source stem or root.

580 Pruning flowering species of shrubs and roses

1. Time of year
 - 1.1. Winter flowering shrubs: Spring.
 - 1.2. Shrubs flowering between March and July: Immediately after the flowering period.
 - 1.3. Shrubs flowering between July and October: Back to old wood in winter.
 - 1.4. Rose bushes: Early spring to encourage basal growths and a balanced, compact habit.

600 Trimming rapidly establishing hedges

1. General: Allow to reach planned height as rapidly as possible.
 - 1.1. Form: Trim back lateral branches moderately.

610 Trimming tapering established hedges

1. Time of year: Trim once in July or August
2. Operations
 - 2.1. Form: Trim carefully and neatly to regular line and shape, with the width at the top less than that at the base. Maintain at a height of 1.25m -1.5m
 - 2.2. Trim: Remove current growth rather than old wood.
3. Tools/ Cutting: Suitable mechanical cutters

620 Removal of dead plant material

1. Operations: At the end of the growing season, check all shrubs and remove all dead foliage, dead wood, and broken or damaged branches and stems.

630 Dead and diseased plants

1. Removal: As soon as possible
2. Replacement: In the next suitable planting season

645 Weed control generally

1. **Weed tolerance:** At all times, weed cover less than 5% and no weed to exceed 100 mm high
2. **Adjacent plants, trees and grass:** Do not damage.

650 Hand weeding

1. **General:** Remove weeds entirely, including roots.
2. **Disturbance:** Remove the minimum quantity of soil, and disturb plants, bulbs and mulched surfaces as little as possible.
3. **Completion:** Rake area to a neat, clean condition.
4. **Mulch:** Reinstate to original depth.

665 Weed control with winter herbicide

1. **Type:** Suitable residual soil acting herbicide.
2. **Time of year:** Unless otherwise agreed, complete before end of March.
3. **Timing:** Allow recommended period for herbicide to take effect before clearing dead weeds.

670 Weed control with summer herbicide

1. **Type:** Suitable foliar acting herbicide.
2. **Timing:** Allow recommended period for herbicide to take effect before clearing dead weeds.

685 Soil level adjustment

1. **Level of soil/mulch at edges of beds:** Reduce to 50 mm below adjacent grass or hard surface.
 - 1.1. **Arising (if any):** Spread evenly over the bed.

690 Maintenance of loose mulch

1. **Thickness (minimum):** 75 mm
 - 1.1. **Top up:** Annually
2. **Mulch spill on adjacent areas:** Remove weeds and rubbish and return to planted area.
3. **Weeding:** Remove weeds growing on or in mulch by hand weeding.

695 Fertilizing established trees and shrubs

1. **Time of year:** During May of second or third year
2. **Type of fertilizer:** Enmag slow release fertiliser
3. **Application:** Spread evenly.
 - 3.1. **Rate:** 100 g/m²

Tree work

810 Tree work generally

1. **Identification:** Before starting work agree which trees, shrubs and hedges are to be removed or pruned.
2. **Protection:** Avoid damage to neighbouring trees, plants and property
3. **Standards:** To BS 3998 and Health & Safety Executive (HSE) 'Forestry and arboriculture safety leaflets'.
4. **Removing branches:** Cut vertical branches similarly, with no more slope on the cut surface than is necessary to shed rainwater.
5. **Appearance:** Leave trees with a well balanced natural appearance.

6. Chain saw work: Operatives must hold a Certificate of Competence.
7. Tree work: To be carried out by an approved member of the Arboricultural Association.

815 Additional work

1. Defective, diseased, unsafe or weak parts of trees additional to those scheduled for attention: Give notice if detected.

820 Prevention of wound bleeding

1. Standard: To BS 3998.

825 Prevention of disease transmission

1. Standard: To BS 3998.

830 Cleaning out and deadwooding

1. Remove
 - 1.1. Dead, dying, or diseased wood, broken branches and stubs.
 - 1.2. Fungal growths and fruiting bodies.
 - 1.3. Rubbish, windblown or accumulated in branch forks.
 - 1.4. Wires, clamps, boards and metal objects, if removable without causing further damage and not part of a support structure that is to be retained.
 - 1.5. Other unwanted objects, e.g. tree houses, swings.
 - 1.6. Climbing plants N/A.

835 Cutting and pruning generally

1. Tools: Appropriate, well maintained and sharp.
2. Final pruning cuts
 - 2.1. Chainsaws: Do not use on branches of less than 50 mm diameter.
 - 2.2. Hand saws: Form a smooth cut surface.
 - 2.3. Anvil type secateurs: Do not use.
3. Removing branches: Do not damage or tear the stem.
4. Wounds: Keep as small as possible, cut cleanly back to sound wood leaving a smooth surface, and angled so that water will not collect on the cut area.
5. Cutting: Cut at a fork or at the main stem to avoid stumps wherever possible.
6. Large branches: Remove only with prior approval
 - 6.1. Remove in small sections and lower to ground with ropes and slings.
7. Dead branches and stubs: When removing, do not cut into live wood.
8. Unsafe branches: Remove epicormic shoots and potentially weak forks that could fail in adverse weather conditions.
9. Disease or fungus: Give notice if detected. Do not apply fungicide or sealant unless instructed.

840 Crown reduction/ shaping

1. General: Cut back selectively to lateral or sublateral buds or branches to retain flowing branch lines without leaving stumps.
2. Operations: Refer to drawings and report by We Know Services for further information.

845 Crown lifting

1. Clearances: Remove branch systems to give clearance.

- 1.1. Height: 2.5 m above footpaths
2. Removing branches: Refer to drawings and report by We Know Services for further information.

855 Cutting tree roots

1. Excavating: Use hand tools only.
2. Protected area: Do not cut roots within an area which is the larger of:
 - 2.1. The branch spread of the tree.
 - 2.2. An area with a radius of half the tree's height, measured from the trunk.
3. Outside protected area: Give notice of roots exceeding 50 mm in diameter. Do not cut without approval.
4. Cutting
 - 4.1. Cutting: Make clean smooth cuts with a hand saw.
 - 4.2. Wounds: Minimize. Avoid ragged edges.
 - 4.3. Finishing: Pare cut surfaces smooth with a sharp knife.
5. Backfilling
 - 5.1. Protection: Cover cut roots with clean sharp sand.
 - 5.2. Material: Backfill with original topsoil.

860 Removing trees, shrubs and hedges

1. Standards: To BS 3998 and Health & Safety Executive (HSE)/ Arboricultural and Forestry Advisory Group Safety Leaflets.
2. Existing services: Check for below and above ground services. Give notice if they may be affected.
3. Shrubs and smaller trees: Cut down and grub up roots.
4. Tree stumps
 - 4.1. Treatment: Remove mechanically to a minimum depth of 300 mm below ground level
 - 4.2. Removal by winching: Give notice. Do not use other trees as supports or anchors.
5. Protection: Avoid damage to neighbouring trees, plants and property
6. Work near retained trees: Where tree canopies overlap and in confined spaces generally, take down trees carefully in small sections to avoid damage to adjacent trees that are to be retained.
7. Filling holes
 - 7.1. Material: Use as-dug material and/ or imported soil as required.
 - 7.2. Finishing: Consolidate and grade to marry in with surrounding ground level.

865 Bark damage

1. Wounds
 - 1.1. Do not attempt to stop sap bleeding.
 - 1.2. Bark: Remove ragged edges using a sharp knife.
 - 1.3. Wood: Remove splintered wood from deep wounds.
 - 1.4. Size: Keep wounds as small as possible.
2. Liquid or flux oozing from apparently healthy bark: Give notice.

Water areas - Not Used

Hard landscape areas/fencing

910 Hard surfaces and gravel areas

1. **Herbicide:** Apply a suitable foliar acting or residual herbicide. Allow recommended period for herbicide to take effect before clearing arisings.
2. **Hard surfaces:** Remove litter, leaves and other debris.
3. **Surface gutters and channels:** Remove mud, silt and debris.
4. **Drainage gullies:** Empty traps and flush clean.
5. **Gravel areas:** Rake over. Remove weeds, litter, leaves and debris, and level off.
6. **Repairs to flexible bituminous pavings:** In accordance with the original paving specification or BS 7370-2, clause 4.12.
7. **Stain removal:** In accordance with BS 7370-2, table 4.

Ω End of Section

Q40

Fencing UNCHANGED

Clauses

2 To be read with preliminaries/ general conditions.

Fencing systems

220 Steel fencing

1. Description: Cheshire Fencing
2. Manufacturer: Contractor's choice
 - 2.1. Product reference: Contractor's choice
3. Standard: To BS 1722-8, type CB/120/5.
4. Height: 1200 mm
5. Posts and bars
 - 5.1. Corner/ End posts: Square hollow section
 - 5.2. Intermediate bars/ Joiner posts: Flat
 - 5.3. Finish: Powder-coated to BS 1722-16
 - 5.3.1. Colour: Black
 - 5.4. Centres of posts (maximum):
 - 5.5. Joiner posts: 6 m.
 - 5.6. Intermediate posts: 1 m.
6. Method of setting posts
 - 6.1. Intermediate/ Joiner posts: Driven.
 - 6.2. End and corner posts: Set in rammed earth to a minimum depth of 450 mm.
7. Accessories: Gate location as drawing: 70057126_WSP_XX_XX_DR_LA_0005

G1 - 6m double leaf vehicular gate with matching posts
G2 - 1.5m Single leaf gate with black matching posts
G3 - 1.5m Single leaf gate with black matching posts
G4 - 3m Double leaf gate with black matching posts.
Exact dimensions to be measured on site prior to fabrication.
All gates should be fitted with locks and fixing features should match that of the fence.
Gates should be fitted with a galvanised drop bolts and a facility for padlocking to hold gate leaves in the open position.
A stopper plate should be fitted to affix gates when in open position due to the level change of the entrance.
8. Conformity: Submit manufacturer's and installer's certificates, to BS 1722-8.
Additionally the products are designed and engineered to exceed the standards set out in BS EN 12978 and BS EN 12453 in relation to gate safety.

Gates, posts and stiles

510 Field gates and posts

1. Manufacturer:
 - 1.1. Product reference:
2. Size:
3. Materials:

- 3.1. Treatment:
- 3.2. Finish:
- 4. Fittings:
 - 4.1. Finish:
- 5. Method of setting posts:
- 6. Accessories:

Accessories - Not Used

Execution

710 Installation generally

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

715 Competence

- 1. Operatives: Contractors must employ competent operatives.
- 2. Qualifications: Submit certification of training.
 - 2.1. NHSS Sector Scheme 2A sub categories: Not required
 - 2.2. NHSS Sector Scheme 2C sub categories: Not required

720 Setting posts in concrete

- 1. Standard: To BS 8500-2.
- 2. Mix: Designated concrete not less than GEN1 or Standard prescribed concrete not less than ST2.
- 3. 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.
- 4. Admixtures: Do not use.
- 5. Holes: Excavate neatly and with vertical sides.
- 6. Filling: Position post/ strut and fill hole with concrete to not less than the specified depth, well rammed as filling proceeds and consolidated.
- 7. Backfilling of holes not completely filled with concrete: Excavated material, well rammed and consolidated.

730 Exposed concrete foundations

- 1. Filling: Compact until air bubbles cease to appear on the upper surface.
- 2. Finishing: Weathered to shed water and trowelled smooth.

740 Setting posts in earth

- 1. Holes: Excavated neatly, with vertical sides and as small as practicable to allow refilling.
- 2. Filling: Position posts/ struts and replace excavated material, well rammed as filling proceeds.

750 Driven posts

- 1. Damage to heads: Minimize.
 - 1.1. Repair: Neatly finish post tops after installation.

Completion

910 Cleaning

1. **General:** Leave the works in a clean, tidy condition.
2. **Surfaces:** Clean immediately before handover.

920 Fixings

1. **All components:** Tighten.
 - 1.1. **Timing:** Before handover.

930 Gates

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

Ω End of Section

Q50

Site/street furniture/equipment **UNCHANGED**

To be read with preliminaries/ general conditions.

32 Cycle stands

1. Manufacturer: Woodscape
 - 1.1. Product reference: Cycle Parking Bollard (or equivalent)
2. Type: Single stands, 200mm W x 1000mm H (above ground)
3. Material: FSC Certified Naturally Very Durable Hardwood Timber
 - 3.1. Finish: Treated
 - 3.2. Colour: Stained
4. Accessories: None
5. Method of fixing: Root, 300 mm below ground, set in concrete base

70 Preservative treated timber

1. Surfaces exposed by minor cutting and drilling: Treated by immersion or with two flood coats of a solution recommended for the purpose by main treatment solution manufacturer.
2. Heavily worked sections: Re-treat.

80 Concrete foundations generally

1. Standard: To BS 8500-2.
2. Mix: Designated concrete not less than GEN 1 or standard prescribed concrete not less than ST2.
3. Admixtures: Do not use.
4. Foundation holes: Neat vertical sides.
5. Depth of foundations, bedding, haunching: Appropriate to provide adequate support and to receive overlying soft landscape or paving finishes.

85 Setting components in concrete

1. Holes:
2. Components: Accurately positioned and securely supported.
3. Concrete fill: Fully compacted as filling proceeds.
4. Concrete foundations exposed to view: Compacted until air bubbles cease to appear on the upper surface, then weathered to shed water and trowelled smooth.
5. Temporary component support: Maintain undisturbed for minimum 48 hours.

Ω End of Section



Specification created using NBS Chorus