

Islington Wharf Phase 4

Architecture

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Title: IW4 - Landscape Specification

Status: For planning approval purposes (Condition 11a)

Revision: P01

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Q10

Kerbs/ edgings/ channels/ paving accessories

Clauses

2 To be read with preliminaries/ general conditions.

Types of kerbs/edgings and channels

112A Precast concrete steps

1. Manufacturer: Tobermore
 - 1.1. Reference: Braemar Step Flags
2. Size: Riser: 400mm x 156mm x 50mm, 400mm x 180mm x 50mm. Slab: 400mm x 400mm x 50mm, 400mm x 300mm x 50mm
3. Finish: Ground / Ground Textured
4. Colour: Alto Silver
5. Slip/ skid resistance: Extremely low: (>75 USRV).
6. All steps to have black contrasting strip to top and front.

115A Precast concrete conservation edge to planting beds

1. Manufacturer: Tobermore
 - 1.1. Reference: Country Kerb
2. Size: 255mm(d) x 145mm(w) x 915mm(l)
3. Special shapes: As required to corners
4. Finish: Standard Aggregate
5. Colour: Standard Aggregate
6. Bedding: To Engineer's details
7. Joints generally: Dry, 2-3 mm gap

115B Precast concrete conservation edge to car park

1. Manufacturer: Tobermore
 - 1.1. Reference: Country Kerb
2. Size: 255mm(d) x 145mm(w) x 915mm(l)
3. Special shapes: -
4. Finish: Granite Aggregate
5. Colour: Granite Aggregate
6. Bedding: To Engineer's details
7. Joints generally: Dry, 2-3 mm gap

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.

600 Radius kerbs/ channels

1. Usage: Radii of 15 m or less.

610 Angle kerbs

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

620 Accuracy

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

Ω End of Section

Q25

Slab/ brick/ sett/ cobble pavings

Clauses

2 To be read with preliminaries/ general conditions.

General

120A Concrete block paving system

1. Manufacturer: Tobermore
 - 1.1. Reference: Fusion
2. Sizes: 600x300x80mm
3. Colour: Blanc
4. Finish: Ground
5. Jointing: kiln dried sand
 - 5.1. Bond: Strecher
6. Build up to Engineer's details

150A Concrete sett paving system

1. Manufacturer: Tobermore
 - 1.1. Reference: Fusion
2. Size: 200x200x80
3. Colour: Mid Grey
4. Finish: Ground
5. Jointing: kiln dried sand
 - 5.1. Bond: Strecher
6. Build up to Engineer's details.

System performance - Not Used

Products

320A Harzard warning tactile paving

1. Description: To top and bottom of step
2. Standard: To DD CEN/TS 15209.
3. Material: Procast concrete
 - 3.1. Manufacturer: Tobermore
 - 3.1.1. Product reference: Tactile Flags
4. Recycled content: Not less than 5%
5. Nominal sizes: 400mm x 400mm x 50mm
6. Colour: Buff
7. Type of surface: Rib – type R1

Execution

610 Material samples

1. Samples representative of colour and appearance of designated materials: Submit before placing orders.
 - 1.1. Designated materials: All pavings

620 Adverse weather

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

625 Laying pavings – general

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: Cut units cleanly and accurately, without spalling, to give neat junctions with edgings and adjoining finishes.

630 Levels of paving

1. Permissible deviation from specified levels
 - 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.

635 Regularity of paved surfaces

1. Maximum variation in gap under a 3 m straight edge placed anywhere on the surface (where appropriate in relation to the geometry of the surface)
 - 1.1. Precast concrete paving blocks and clay pavers for flexible pavements: 10 mm.
 - 1.2. Precast concrete flags or natural stone slabs: 3 mm.

2. Difference in level between adjacent paving units (maximum): 2 mm.
3. Sudden irregularities: Not permitted.

645 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): 4 days
 - 4.2. Vehicular traffic (minimum): 7 days
5. Access: Restrict access to paved areas to prevent damage from site traffic and plant.

Completion

915 Completion of paving with dry sand or fine aggregate filled joints

1. Sand dressing: Leave a thin layer of dry jointing sand/ fine aggregate over the paving, sweep clean before practical completion
2. Final compaction of the surface course: In accordance with BS 7533-3.
3. Vacuum cleaning machines: Not allowed.

Ω End of Section

Q28

Topsoil and soil ameliorants

Clauses

2 To be read with preliminaries/ general conditions.

System outline

135 Planting bed topsoil system

1. Description: For all planted areas
2. Composition
 - 2.1. Topsoil: 400mm depth over 500mm depth subsoil (both to be sandy loam texture classification to BS 3882)
 - 2.2. Ameliorants: Sanitized and stabilized composted materials
 - 2.3. Accessories: Compost and mycorrhizal to be incorporated to topsoil

145 Planting pit backfilling topsoil system

1. Description: For tree pits
2. Composition
 - 2.1. Topsoil: 400mm depth over 500mm depth subsoil (both to be sandy loam texture classification to BS 3882)
 - 2.2. Ameliorants: Sanitized and stabilized composted materials
 - 2.3. Accessories: Compost and mycorrhizal to be incorporated to topsoil

155 Mulching and top dressing system

1. Description: For all planted areas
2. Composition
 - 2.1. Material: All beds mulched to 50mm depth with fine grade compostable bark mulch

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.

310 Materials not permitted

1. Materials: - Peat- Products containing peat- River and canal dredgings

315 Imported topsoil to BS 3882

1. Description: For all planted areas
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: Sandy loam
5. Source: Contractor's choice
 - 5.1. Product reference: Contractor's choice

360 Sanitized and stabilized composted materials certified to PAS 100

1. Description: For planting beds
2. Standard: In accordance with PAS 100
3. Source: Contractor's choice
 - 3.1. Product reference: Contractor's choice
4. Horticultural parameters
 - 4.1. pH (1:5 water extract): 6.5-8.7
 - 4.2. Electrical conductivity (maximum, 1:5 water extract): 200mS/m
 - 4.3. Moisture content (m/m of fresh weight): 35-55%.
 - 4.4. Organic matter content (minimum): 25%
 - 4.5. Grading (air dried samples): 100% passing 10 mm screen mesh aperture
 - 4.6. Carbon:Nitrogen ratio (maximum): 20:1.
5. Texture: Friable.
6. Objectionable odour: Not permitted.
7. Compost Certification Scheme certification: Required
8. Declaration of analysis: Submit.
9. Additional analyses: Not required
10. Samples: Supply 5 kg sample before ordering

380 Mycorrhizal inoculant

1. Description:
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: Contractor's choice
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: Not required
- 4.3. Report detailing soil analyst's recommendations.

625 Sample loads

- 1. Description: For imported topsoil
- 2. Deliver to site a sample load: 5kg
- 3. Give notice: Allow inspection before making further deliveries to site. Retain for comparison with subsequent loads.
 - 3.1. Notice period: 15 days

630 Documentation for imported topsoil

- 1. Description: For all planted 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: 3 inc pdf/electronic copy

635 Documentation for compost and composted materials

- 1. Description: For compost
- 2. Timing: Submit at handover.
- 3. Contents
 - 3.1. Full description of all compost components.
 - 3.2. Record of source for all compost components.
 - 3.3. Analyst's report for each test carried out.
 - 3.4. Declaration of compliance: in accordance with PAS 100 and BSI PD CR 13456.
 - 3.5. Quality Compost Protocol certification: Required
- 4. Number of copies: 3 inc pdf/electronic copy

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: 2 weeks

655 Mechanical tools

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

660 Grading subsoil for:

- 1. Description: All planted 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:

1. Description: All planted 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: 150mm
 - 4.1.2. Stiff clay and cohesive subsoils: 350mm
 - 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 20mm.
6. Remove from site: Arisings, contaminants and debris

670 Inspecting formations

1. Give notice: Before spreading topsoil for planting beds.
2. Notice period: 10 days

690 Topsoil storage heaps

1. Location: Contractor's choice
2. Height (maximum): 1.0m
3. Width (maximum): 4.0m
 - 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 the moisture content is greater than the plastic limit.

710 Spreading topsoil on:

1. Description: Amenity planting 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: 400mm for trees and plantings
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 all planting beds
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: 150mm
5. Particle size (maximum): 10mm
6. Timing: Within a few days before planting
7. Weather and ground conditions: Suitably dry.
8. Surface: Leave regular and even.
9. Levels: Minimum 150 mm below dpc of adjoining buildings
10. Undesirable material brought to the surface
 - 10.1. Remove visible weeds.
 - 10.2. Remove roots and large stones with any dimension exceeding 20mm.

720 Finished levels of topsoil after settlement

1. In relation to adjoining paving, kerbs or hard surfaces: 50mm below
2. In relation to dpc of adjoining buildings: Not less than 150mm below.
3. In relation to adjacent grass areas: 50mm 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.

805 Applying soil ameliorant

- 1. Description: For all planted areas
- 2. Type: as clause 360 and 380
- 3. Fully incorporate into topsoil to a depth of 100mm.
- 4. Application: Spread evenly.
 - 4.1. Timing: Apply prior to cultivation.
 - 4.2. Rate: to suppliers recommendations
- 5. Timing: Prior to cultivation.
- 6. Other requirements: None

840 Applying mycorrhizal inoculant

- 1. Description: To all tree and shrub planting
- 2. Depth: To maintain contact with root system

845 Applying loose mulch

- 1. Description: For planting beds and tree pits
- 2. Timing: Immediately after planting
- 3. Preparation: Ensure all weeds are removed and that soil is thoroughly moistened, applying water where necessary
- 4. Coverage of mulch (minimum)
 - 4.1. Planting beds (depth): 50mm depth
 - 4.2. Trees: 50mm depth
 - 4.3. Container planting: -
- 5. Finished level of mulch: levels with paved areas

Completion

920 Applying mulch

- 1. Timing: At end of the maintenance period
- 2. Watering: Ensure that soil is thoroughly moistened prior to mulching, applying water where necessary.
- 3. Planting beds: Re-mulch.
 - 3.1. Depth (minimum): 50mm
- 4. Trees: Remulch.
 - 4.1. Depth (minimum): 50mm
- 5. Container planting: Remulch.
 - 5.1. Depth (minimum): -

Ω End of Section

Q31

External planting

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 50mm.
3. Contamination: Remove material containing toxins, pathogens or other extraneous substances harmful to plant, animal or human life.
4. Vegetation: Clear surface vegetation using suitable nonresidual herbicide
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.

130 Mechanical tools

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

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: 2 weeks

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: Container planting growing media system, as section Q28
 - 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:** Grown in the United Kingdom for at least one growing season, unless otherwise approved
9. **Definition:** Origin and Provenance have the meaning given in the National Plant Specification.

215 Plants/ Trees – specification criteria

1. **Name, forms, dimensions, provenance and other criteria:** As scheduled and defined in the National Plant Specification (available on CS Design Software Limited's website).

225 Bulbs/ Corms/ Tubers

1. **Condition:** Firm, entire, not dried out or shrivelled.
2. **Health:** Free from pests, diseases and fungus.
3. **Handling:** Remove from packaging immediately.

4. Storage: Permitted only when necessary.
 - 4.1. Location: Well ventilated, dark, covered, rodent proof container, away from exhausts and fruit.
 - 4.2. Duration: Minimum period.
 - 4.3. Temperature: 18-21°C.

245 Labelling and information

1. General: Provide each plant/ tree or group of plants/ trees of a single species or cultivar with supplier's labelling for delivery to site, showing:
 - 1.1. Full botanical name.
 - 1.2. Total number.
 - 1.3. Number of bundles.
 - 1.4. Part bundles.
 - 1.5. Supplier's name.
 - 1.6. Employer's name and project reference.
 - 1.7. Plant specification, in accordance with scheduled National Plant Specification categories.
2. Additional information: Submit on request: ate supplied and consignment details orreference.

260 Plant/ Tree substitution

1. Plants/ trees unobtainable or known to be likely to be unobtainable at time of ordering: Submit alternatives, stating:
 - 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: Black polyethylene bags
5. Packaging of bulk quantities: Pallets or bins sealed with polyethylene and shrink wrapped
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: Remove.

Plant containers - Not Used

Preparation of planting beds/ planting materials

300 Herbicide

1. Description: To clear existing vegetation
2. Locations: All planting areas
3. Type: Suitable for suppressing perennial weeds.
4. Timing: Allow fallow period before cultivation.
 - 4.1. Duration (minimum): 3 weeks

305 Weed control

1. Description:
2. Locations: All planting areas
3. General: Prevent weeds from seeding and perennial weeds from becoming established, by hand weeding/ contractor's choice of herbicide.

Planting shrubs/ herbaceous plants/ bulbs

400 Random plant layout

1. Description:
2. Spacing: Evenly (Where planting adjacent to edges, plants to form neat line parallel to edge/corner as close to edge/corner as practically possible to avoid bare patches along perimeter of planting beds)
3. Density: As planting schedule

405 Shrub planting pits

1. Timing: Excavate 1-2 days (maximum) before planting.
2. Sizes: 150 mm wider than roots when fully spread and 200 mm deep
3. Pit bottom improvement Break up to a depth of 150 mm, incorporating 25g of slow release fertilizer per planting pit- Planting method: Plants to be placed centrally within pit and vertical; top of rootball to be at the same level as the nursery ground level/ container soil level.- Backfilling to be undertaken carefully and thoroughly packed around plant roots or rootball and firmed in by heeling around the base of the stem.

445 Planting bulbs/ Corms/ Tubers

1. Depth: Top of bulb/ corm/ tuber at a depth of approximately twice its height, base in contact with bottom of hole.
2. Backfilling: Finely broken soil. Lightly firm to existing ground level.
3. Naturalized planting in existing grassed areas
 - 3.1. Scattering: Random. Plant bulbs/ corms/ tubers where they fall.
 - 3.2. Planting: Neatly remove a plug of turf and replace after planting.

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.

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: 50mm

Planting trees

500 Tree planting

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

505 Tree pits

1. Sizes: As drawings
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 200 mm.
 - 4.1. Treatment: Soil ameliorant worked into pit bottoms
5. Pit sides: Scarify.
6. Backfilling material: Proprietary tree backfilling material, as section Q28

512A Tree pit irrigation and ventilation accessories

1. Locations: To all tree pits
2. Manufacturer: GreenBlue urban
 - 2.1. Product reference: RootRain Urban
3. Type: Perforated plastics irrigation pipe with inlet
4. Ring diameter: to fit tree rootball
5. Inlet: Black plastics, with cap
6. Installation
 - 6.1. 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.
 - 6.2. Top cap of inlet: Protruding slightly above finished surround level.
 - 6.3. Backfill material: Carefully compact in layers.

526 Underground guying for:

1. Description: All trees
2. Manufacturer: GreenBlue Urban
 - 2.1. Product reference: ArborGuy Drive in anchor SASMCB
3. Anchoring system: 3 no drive-in anchors
4. Installation: Ensure tree is positioned correctly and vertically prior to tightening guy line tensioners.

576 Tree pit surfacing – loose fill

1. Surfacing material: Bark Mulch, as section Q28
2. Area: 600 mm radius circle
3. Depth: 50 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 end of rectification period.
2. Frequency of maintenance visits: Weekly during growing season

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 hoeing and hand weeding
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: At each scheduled maintenance visit
- 7. Watering: As required for healthy establishment, depending on weather conditions

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 a schedule of any ongoing maintenance problems experienced during the rectification period.

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): 50 mm
- 5. Trees: Remulch.
- 6. Depth (minimum): 50 mm

Ω End of Section

Q35

Landscape maintenance

Clauses

2 To be read with preliminaries/ general conditions.

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: 7 days

130 Reinstatement

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

155 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: As necessary for the continued thriving of all planting.

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 to recycling facility
 - 1.4. Shrub and tree prunings: Remove to recycling facility
 - 1.5. Litter and nonbiodegradable arisings: Remove from site

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

250 Leaf removal

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

Flower beds/ seasonal beddings

460 Beds of perennials or perennials and annuals

1. Plant supports: Stake and tie plants using not required.
 - 1.1. Length: To suit plant height
 - 1.2. Maintain throughout the growing season.
2. Gaps in planting: Refill by replanting.
3. Watering
 - 3.1. New plants: Before and after planting out.
 - 3.2. Ongoing: As necessary for the continued thriving of all planting.
4. Operations at end of growing season
 - 4.1. Trim: Older flowering stems of herbaceous perennials.
 - 4.2. Remove: Redundant plant supports, litter, debris and arisings.
 - 4.3. Cultivate: Fork over the soil, taking care not to cause undue disturbance to plants.
 - 4.4. Top dress: Apply sanitized and stabilized compost top dressing.

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

490A Thinning by removal of surplus plants

1. Standard: BS 7370-4, clause 3.5.17.1.
2. Timing: Thin when foliage of adjacent plants has begun to touch.
3. Roots
 - 3.1. Disturbance to adjacent plants: Minimize.
 - 3.2. Soil: Refill holes with topsoil to leave an even graded surface.
 - 3.3. Mulch: Maintain mulch as original specification.
4. Adjacent plants: Make good any minor damage immediately.
5. Plants for retention: Select plants with a strong healthy habit.
6. Mature planting density: as originally specified

Shrubs/trees/hedges

500 Establishment of new planting

1. Duration: One full growing seasons from the date of planting
2. Weed control
 - 2.1. Method: Keep planting beds clear of weeds by hoeing and screeing and maintaining fullthickness of mulch.
 - 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: As schedule and when instructed

515 Tree guy wires

1. Inspection/ Maintenance times: immediately after strong winds
2. Operations
 - 2.1. Replace or resecure loose or missing guy wires.
 - 2.2. Adjust to suit stem growth and to provide correct and uniform tension.
3. Removal: During spring when no longer required to support the tree

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.

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

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.

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

635 Reinstatement of shrub/ herbaceous areas

1. Dead and damaged plants: Remove.
2. Mulch/ matting materials
 - 2.1. Carefully move to one side and dig over the soil, leaving it fit for replanting.
3. Do not disturb roots of adjacent plants.
4. Replacement plants
 - 4.1. Use pits and plants: To original specification or to match the size of adjacent or nearby plants of the same species, whichever is the greater.
 - 4.2. Additional requirements: Submit proposals
5. Dressing: Slow release fertilizer:
 - 5.1. Type: Submit proposals
 - 5.2. Application rate: As manufacturer's recommendations

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.

675 Digging over

1. General: Dig over beds. Do not damage existing plants, bulbs and roots.
 - 1.1. Depth of dig (minimum): 100 mm

680 Soil aeration

1. Compacted soil surfaces
 - 1.1. Prick up: To aerate the soil of root areas and break surface crust.
 - 1.2. Size of lumps: Reduce to crumb and level off.
 - 1.3. Damage: Do not damage plants and their roots.

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. Arisings (if any): Spread evenly over the bed.

690 Maintenance of loose mulch

1. Thickness (minimum): 50 mm
 - 1.1. Top up: Twice per year
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: As schedule
2. Type of fertilizer: Slow release
3. Application: Spread evenly.
 - 3.1. Rate: As manufacturer's recommendations

705 Winter leaf removal

1. Operations: Take down temporary leaf fences. Collect accumulations of drifted leaves from the vicinity and from planting beds.
2. Arisings: Remove to recycling facility

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. Standard: To BS 3998.
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 if unavoidable
 - 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.

845 Crown lifting

1. Clearances: Remove branch systems to give clearance.
 - 1.1. Height: 2.5 m above footpaths
2. Removing branches: Remove whole branches back to the stem, or cut lower portions of branches back to lateral or sublateral buds or branches. Do not leave stumps.

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. Standard: To BS 3998.
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: Cut as close to ground as possible and kill by applying a suitable herbicide into drilled holes immediately after felling
 - 4.2. Removal by winching: Give notice. Do not use other trees as supports or anchors.
5. Protection: As section A34
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 - Not Used

Ω End of Section

Q40

Fencing

Clauses

2 To be read with preliminaries/ general conditions.

Fencing systems

410A Purpose made external wood fencing

1. Description:
2. Standard: To BS 1722- 7:2006 Fences. Specification for wooden post and rail fences except as varied on drawings and below.
3. Manufacturer: Vincent Timber
4. Size: Typically, 38 mm x 100 mm x 2100 mm 2.1m high to meet Secure By Design requirements.
5. Materials: Siberian Larch
 - 5.1. Arrangement: Galvanised steel RHS posts and flat plate rails with Larch fins at min 79mm centres to form timber screen fencing
 - 5.2. Finish: As delivered
 - 5.2.1. Colour: As delivered
6. Centres of posts (maximum): As manufacturer's recommendations
7. Method of setting posts: As manufacturer's recommendations
8. Accessories: None
9. Refer to Engineers' details and specification

Gates, posts and stiles

570A Electrically operated vehicle gates

1. Manufacturer: Contractors Choice
 - 1.1. Product reference: Electrically operated swing gates
2. Sizes: 2.1m high x 4m opening width (2m leaves)
3. Infill: Vertical timber clad to match fencing (38x100mm siberian larch fixed to steel frame)
4. Colour and finish: Steel frame, galvanised and powder coated grey to match building metal work
5. Frame: Steel frame. Specialist supplier design.
6. Gates to open inwards past 90 degrees (125 and 105 degrees) as shown on plan.
7. Gates are on a slope therefore a triangular infill panel/ extended cladding is required to ensure no access under the gate. Refer to elevation drawings.
8. Electric gates to allow for remote access control and connection back to building fire alarm system.
9. Gates to be certified to one of the following standards:
10. LPS 1175: Issue 7, SR2
11. STS 202: Issue 3, BR2
12. Sold Secure Gold
13. PAS 68: 2013
14. The electronic gates should not be on an induction loop. Gates should be fob-in and fob-out or equivalent as agreed with the client and secure by design advisors.

570B Gates to car park

1. Manufacturer: Vincent Timber
 - 1.1. Product reference: specialist design - to match adjacent fence
2. Sizes: 1000 mm clear opening
3. Posts: Galvanised steel RHS
4. Finish as delivered: Self finished Siberian Larch
5. Fittings: Hinge, spring closing to specialist suppliers details. Gates to be on a fob-in fob-out locking system.
 - 5.1. Finish: Hot dip galvanized to BS EN ISO 1461
6. Method of fixing: Posts set in 450 mm square x 600 mm deep concrete to structural engineers detail
7. Accessories: None

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.

770 Site cutting of wood

1. General: Kept to a minimum.
2. Below or near ground level: Cutting prohibited.
3. Treatment of surfaces exposed by minor cutting and drilling: Two flood coats of solution recommended for the purpose by main treatment solution manufacturer.

780 Making good galvanized surfaces

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

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.

Ω End of Section

Q41

Barriers/ guardrails

Clauses

2 To be read with preliminaries/ general conditions.

Types of barriers/ guardrails

240A Handrail systems

1. Description: To all steps and ramp areas
2. System manufacturer: Contractors choice
 - 2.1. Handrail details to be designed by manufacturer/supplier for approval prior to placing an order.
 - 2.2. Manufacturer/supplier to confirm that handrails profiles are sufficient to withstand structural loading sufficient for pedestrian use.
3. Material: 76mm dia stainless steel posts (G316) satin polish finish.
4. 42mm dia stainless steel handrail (G316) polished.
5. Handrails held on s/steel arms fitted to the balustrade posts.
 - 5.1. Cross-section: Circular
6. Height above ground surface (to upper surface of handrail)
 - 6.1. Upper handrail: 1000 mm above step level
 - 6.2. Lower handrail: n/a
 - 6.3. End of handrails to turn down vertically to ensure there are no stop ends, handrails to be continuous with no obstructions.
7. Mounting: Core drilled into steps, stainless steel circular plate to cover fixings
8. • Balusters to be top fixed / bolted down at centres to suit a 1.5kn loading .

240B Balustrade systems

1. Description: On retaining walls
2. System manufacturer: Contractor's choice
 - 2.1. Balustrade details to be designed by manufacturer/supplier for approval prior to placing an order.
 - 2.2. Manufacturer/supplier to confirm that balustrades profiles are sufficient to withstand structural loading sufficient for pedestrian use.
3. Material: 76mm dia stainless steel posts (G316) satin polish finish.
4. 42mm dia stainless steel handrail (G316) polished.
5. Handrails held on purpose made 16mm dia s/steel arms fitted to the balustrade posts.
6. Height above ground surface (to upper surface of handrail)
 - 6.1. Upper handrail: 1100mm above ground level
 - 6.2. Vertical bar infill panels as manufacturers standards and in accordance with BS1722.
7. Mounting: Fitted to top of retaining wall to engineers details Retaining wall balustrade x 0.5m high
8. • Off sett handrail to be 42mm dia chs in a type 316 quality stainless steel with a bright polished finish.
9. • Handrails to be fixed to balusters via a purpose made 16mm dia rod cranked handrail bracket to contractor standard design.
10. • 76mm dia chs posts in a type 316 quality stainless steel with a satin polish finish

11. • Balusters to be top fixed / bolted down at centres to suit a 1.5kn loading
12. • Infill panels to be constructed from 42mm dia chs top and bottom rails, 50mm wide flat sides and 16mm dia rod infills at maximum 100mm centres. All infill panel sections to be type 316 quality stainless steel with a satin polish.
13. • 19m required o/a
14. Ramp balustrade with varying height from 0.5m to 1m high
15. • An Off-set handrail allowed to either side of the baluster and to rise / fall as required for ramp gradient. Handrails to be 42mm dia chs in a type 316 quality stainless steel with a bright polished finish.
16. • Handrails to be fixed to balusters via a purpose made 16mm dia rod cranked handrail bracket to contractor standard design.
17. • 76mm dia chs posts in a type 316 quality stainless steel with a satin polish finish
18. • Balusters to be top fixed / bolted down at centres to suit a 1.5kn loading
19. • Infill panels to be constructed from 42mm dia chs top and bottom rails, 50mm wide flat sides and 16mm dia rod infills at maximum 100mm centres. All infill panel sections to be type 316 quality stainless steel with a satin polish. .

Performance/ inspection/ testing - Not Used

Installation

420 Alignment

1. Erection: Fences/ barriers to present a flowing alignment. Tops of posts to follow ground profile.
2. Tolerance: ± 30 mm of prescribed alignment and, within any 10 m length, ± 15 mm from the straight or required radius.

Completion

900 Documentation

1. Contents
 - 1.1. General product information.
 - 1.2. Installation information.
 - 1.3. Inspection and maintenance reports.
2. Number of copies: 3
3. Submission: Two weeks after request by contract administrator

Ω End of Section

Q50

Site/ street furniture/ equipment

Clauses

2 To be read with preliminaries/ general conditions.

Gates, barriers and parking controls

190 Bollards

1. Description:
2. Manufacturer: Marshalls
 - 2.1. Product reference: Essentials Bollard Mitre Top 304
3. Material: 316 Grade Stainless Steel
 - 3.1. Finish as delivered: Brushed
 - 3.2. Colour: None
4. Height above ground: 900 mm
5. Sectional size: 114 mm diameter
6. Top: Mitre
7. Special features: -
8. Method of fixing: Root, 300 mm below ground, set in concrete base

Site and street furniture - Not Used

Installation

510 Concrete foundations generally

1. Standard: To BS 8500-2.
2. Concrete: Standard prescribed, 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.

515 Setting components in concrete

1. Holes: design of foundations to be advised by engineers
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.

550 Damage to galvanized surfaces

1. Minor damage in areas up to 40 mm² (including on fixings and fittings): Make good.
 - 1.1. Material: Low melting point zinc alloy repair rods or powders made for this purpose or at least two coats of zinc-rich paint to BS 4652.
 - 1.2. Thickness: Sufficient to provide a zinc coating at least equal to the original layer.

