

## **PART 1 - GENERAL**

### **1.1 RELATED SECTIONS**

- .1 Section 03 45 00; 01 74 21

### **1.2 SUBMITTALS**

- .1 Submit required documents and samples in accordance with Section 01 33 00 – Submittal Procedures.
- .2 Data sheets
  - .1 Submit data sheets, as well as manufacturer's instructions and printed product literature for furniture. The data sheets must indicate product characteristics, performance criteria, physical size, finish, and limitations.
- .3 Shop drawings
  - .1 Submit shop drawings indicating dimensions, sizes, assembly, anchorage, and installation details for each urban piece of furniture.

### **1.3 CLOSEOUT SUBMITTALS**

- .1 Provide maintenance data for care and cleaning of urban furniture for incorporation into the manual specified in Section 01 78 00 - Documents/Closeout submittals.

### **1.4 DELIVERY, STORAGE AND HANDLING**

- .1 Deliver, store and handle materials in accordance with Section 01 61 00 – Common Product Requirements.
- .2 Delivery and acceptance requirements: deliver materials to the site in their original factory packaging, which must bear a label indicating the manufacturer's name and address.
- .3 Storing and handling requirements:
  - .1 Store materials and material in dry conditions, in a clean, dry, well-ventilated area, in accordance with manufacturer's recommendations.
  - .2 Store furniture so that it is protected from marks, grooves and scratches.
  - .3 Replace defective or damaged materials with new materials.
- .4 Packaging waste management: separate packaging waste for reuse and recycling of pallets, cases, padding, and other packaging materials by their manufacturer, according to the construction materials management plan, in accordance with Section 01 74 21 – Construction/Demolition Waste Management and Disposal.

### **1.5 MEASUREMENT FOR PAYMENT**

- .1 Furniture will be paid for in units, only after completion for the on-site installation.
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## PART 2 - PRODUCT

**A MODEL PIECE OF URBAN FURNITURE IS CURRENTLY INSTALLED ON THE TERRACE. ALL MATERIALS MUST BE CHOSEN TO GUARANTEE THE COMPATIBILITY WITH THE EXISTING URBAN FURNITURE.**

Acceptable products

The only acceptable products are the following:

### 2.1 BENCHES

- .1 Model: Bench with 72-inch backrest, De Vinci series model #264106 from Urbain Design.
- .2 End pieces: Steel structure with anticorrosion coating and ductile iron armrest.
- .3 Central piece: Install a ductile iron armrest in the centre of the bench.
- .4 Seat: Made of ULTRAPLAST recycled plastic, 37mm x 62 mm (2" x 3") slats and 62 mm x 62 mm (3" x 3") rounded boards. Factory assembled.
- .5 Dimensions:
  - .1 Height: 815 mm (32").
  - .2 Length: 1,830 mm (72")
  - .3 Depth: 625 mm (24 ½").
- .6 Hardware:
  - .1 Cameleon
  - .2 Stainless steel anti-theft anchors
  - .3 Stainless steel anti-theft hardware. Allow for sufficiently long anti-theft hardware.
- .7 Colours:
  - .1 Recycled plastic: Sand
  - .2 Steel: Green
- .8 Installation
  - .1 Installation: Surface with prefabricated concrete slab (see architecture).

### 2.2 TRASH CONTAINERS

- .1 Model: Trash containers, De Vinci series model #284402 from Urbain Design, with the option of a lateral ashtray.
- .2 Basic construction material: recycled plastic and steel with anticorrosion coating.
  - .1 Frame: Steel with anticorrosion coating.
  - .2 Trash can: 37 mm x 62 mm (2" x 3") ULTRAPLAST slats
  - .3 Lid: Spun steel
  - .4 Capacity: 109 L (28 US gallons)
  - .5 Dimensions:
    - .1 Height: 949 mm (37<sup>3/8</sup>").
    - .2 Diameter: 688 mm (27 1/8")
  - .6 Hardware:
    - .1 Cameleon
    - .2 Stainless steel anti-theft anchors

- .3 Stainless steel anti-theft hardware. NOTE: Allow for sufficiently long anti-theft hardware.
- .7 Colours:
  - .1 Recycled plastic: Sand
  - .2 Steel: Green
- .8 Installation
  - .1 Installation: Surface with prefabricated concrete base (see architecture)
- .9 Specifications for anticorrosion components:  
Steel components treated with physical process to ensure good adhesion with coating. An epoxy primer is applied by electrodeposition to ensure that the interior and the straight edges are protected. Process used by the world's largest automobile and outdoor equipment manufacturers. A polyester powder is then applied by electrostatic process.

## **PART 3 - EXECUTION**

### **3.1 EXAMINATION**

- .1 Verification of conditions: Before proceeding with the installation of the urban furniture, verify that the condition of the substrate previously installed under other sections or contracts is acceptable and permits the achievement of the work in accordance with manufacturer's written instructions.
  - .1 Visually inspect the substrate in the presence of the Departmental Representative.
  - .2 Inform the Departmental Representative of any unacceptable conditions immediately upon discovery.
  - .3 Proceed with the installation only after the unacceptable conditions have been remedied and after receipt of written approval to proceed from the Departmental Representative.

### **3.2 INSTALLATION**

- .1 Assemble urban furniture in accordance with the manufacturer's written recommendations.
- .2 Install urban furniture so that it is plumb, well-anchored and firmly supported, as directed by the Departmental Representative.
- .3 Touch up damaged finishes to the approval of the Departmental Representative.

### **3.3 CLEANING**

- .1 Progress cleaning: Clean in accordance with Section 01 74 11 – Cleaning.
  - .1 Leave work site clean at the end of each working day.
- .2 Final cleaning: Upon completion remove surplus materials, rubbish, tools and equipment in accordance with Section 01 74 11 – Cleaning.
- .3 Waste management: Sort waste for recycling, in accordance with Section 01 74 21 – Construction/Demolition Waste Management and Disposal.
  - .1 Remove containers and recycling bins from the site and dispose of materials at designated areas.

### **3.4 PROTECTION**

- .1 During construction work, protect material and installed elements against damage.
- .2 Repair materials and adjacent material damaged by the installation of urban furniture.

**END OF SECTION**

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## **PART 1 - GENERAL**

### **1.1 RELATED SECTIONS**

- .1 Section 03 45 00; 01 74 21

### **1.2 SUBMITTALS**

- .1 Submit required documents and samples in accordance with Section 01 33 00 – Submittal Procedures.
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  - .1 Submit data sheets, as well as manufacturer's instructions and printed product literature for furniture. The data sheets must indicate product characteristics, performance criteria, physical size, finish, and limitations.
- .3 Shop drawings
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### **1.3 CLOSEOUT SUBMITTALS**

- .1 Provide maintenance data for care and cleaning of urban furniture for incorporation into the manual specified in Section 01 78 00 - Documents/Closeout submittals.

### **1.4 DELIVERY, STORAGE AND HANDLING**

- .1 Deliver, store and handle materials in accordance with Section 01 61 00 – Common Product Requirements.
- .2 Delivery and acceptance requirements: deliver materials to the site in their original factory packaging, which must bear a label indicating the manufacturer's name and address.
- .3 Storing and handling requirements:
  - .1 Store materials and material in dry conditions, in a clean, dry, well-ventilated area, in accordance with manufacturer's recommendations.
  - .2 Store furniture so that it is protected from marks, grooves and scratches.
  - .3 Replace defective or damaged materials with new materials.
- .4 Packaging waste management: separate packaging waste for reuse and recycling of pallets, cases, padding, and other packaging materials by their manufacturer, according to the construction materials management plan, in accordance with Section 01 74 21 – Construction/Demolition Waste Management and Disposal.

### **1.5 MEASUREMENT FOR PAYMENT**

- .1 Furniture will be paid for in units, only after completion for the on-site installation.
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## PART 2 - PRODUCT

**A MODEL PIECE OF URBAN FURNITURE IS CURRENTLY INSTALLED ON THE TERRACE. ALL MATERIALS MUST BE CHOSEN TO GUARANTEE THE COMPATIBILITY WITH THE EXISTING URBAN FURNITURE.**

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- .4 Seat: Made of ULTRAPLAST recycled plastic, 37mm x 62 mm (2" x 3") slats and 62 mm x 62 mm (3" x 3") rounded boards. Factory assembled.
- .5 Dimensions:
  - .1 Height: 815 mm (32").
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- .6 Hardware:
  - .1 Cameleon
  - .2 Stainless steel anti-theft anchors
  - .3 Stainless steel anti-theft hardware. Allow for sufficiently long anti-theft hardware.
- .7 Colours:
  - .1 Recycled plastic: Sand
  - .2 Steel: Green
- .8 Installation
  - .1 Installation: Surface with prefabricated concrete slab (see architecture).

### 2.2 TRASH CONTAINERS

- .1 Model: Trash containers, De Vinci series model #284402 from Urbain Design, with the option of a lateral ashtray.
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  - .1 Frame: Steel with anticorrosion coating.
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## **PART 3 - EXECUTION**

### **3.1 EXAMINATION**

- .1 Verification of conditions: Before proceeding with the installation of the urban furniture, verify that the condition of the substrate previously installed under other sections or contracts is acceptable and permits the achievement of the work in accordance with manufacturer's written instructions.
  - .1 Visually inspect the substrate in the presence of the Departmental Representative.
  - .2 Inform the Departmental Representative of any unacceptable conditions immediately upon discovery.
  - .3 Proceed with the installation only after the unacceptable conditions have been remedied and after receipt of written approval to proceed from the Departmental Representative.

### **3.2 INSTALLATION**

- .1 Assemble urban furniture in accordance with the manufacturer's written recommendations.
- .2 Install urban furniture so that it is plumb, well-anchored and firmly supported, as directed by the Departmental Representative.
- .3 Touch up damaged finishes to the approval of the Departmental Representative.

### **3.3 CLEANING**

- .1 Progress cleaning: Clean in accordance with Section 01 74 11 – Cleaning.
  - .1 Leave work site clean at the end of each working day.
- .2 Final cleaning: Upon completion remove surplus materials, rubbish, tools and equipment in accordance with Section 01 74 11 – Cleaning.
- .3 Waste management: Sort waste for recycling, in accordance with Section 01 74 21 – Construction/Demolition Waste Management and Disposal.
  - .1 Remove containers and recycling bins from the site and dispose of materials at designated areas.

### **3.4 PROTECTION**

- .1 During construction work, protect material and installed elements against damage.
- .2 Repair materials and adjacent material damaged by the installation of urban furniture.

**END OF SECTION**

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## **PART 1 - GENERAL**

### **1.1 RELATED SECTIONS**

- .1 Sections 01 73 00, 01 74 11, 31 32 19.02, 32 93 10

### **1.2 MEASUREMENT FOR PAYMENT**

- .1 The preparation of sub-grade for placement of topsoil will be measured in square metres of area prepared.
- .2 Topsoil stripping will be measured by the Departmental Representative in cubic metres of topsoil stockpiled, and the volume will be determined by the average end area method.
- .3 Supply and application of soil amendments, including fertilizer, will be measured in square metres of area treated as determined by the Departmental Representative.
- .4 The supply, placement and spreading of topsoil will be measured in cubic metres after settlement at the site.

### **1.3 REFERENCES**

- .1 Definitions
  - .1 Compost: mixture of soil and decomposing organic matter used as fertilizer, mulch, or soil amendment.
    - .1 Compost contains 40% or more processed organic matter, with the percentage being determined by Walkley-Black method or loss of ignition (LOI) test. The product must be sufficiently decomposed (stable) so that further decomposition does not adversely affect plant growth (C:N ratio below 50), and contain no toxic or growth-inhibiting contaminants.
    - .2 Composed bio-solids must meet the requirements of the Canadian Council of Ministers of the Environment (CCME) Guidelines for Compost Quality, Category (A) (B).
- .2 References
  - .1 Agriculture and Agri-Foods Canada
    - .1 The Canadian system of soil classification, 1998.
  - .2 Compost Council of Canada – The Compost Quality Alliance
    - .1 Compost Analysis Proficiency - Test Methods for Examination of Composting and Compost (TMECC).
  - .3 Canadian Council of Ministers of the Environment (CCME)
    - .1 CCME PN 1340-2005, Guidelines for Compost Quality.
  - .4 U.S. Environmental Protection Agency (EPA) / Office of Water
    - .1 EPA 832/R-92-005, Storm Water Management for Construction Activities: Developing Pollution Prevention Plans and Best Management Practices.
    - .2 EPA NCEA-C-1282-2002, Methods for the Determination of Total Organic Carbon (TOC) in Soils and Sediments (Walkley Black Method).

### **1.4 SUBMITTALS**

- .1 Submit required documents and samples in accordance with Section 01 33 00 – Submittal Procedures.
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- .2 Data product
  - .1 Submit data sheets, as well as manufacturer's instructions and printed product literature for topsoil, peat moss, fertilizer, sand, limestone and compost, including chemical composition and sizes.
- .3 Test and evaluation reports
  - .1 Submit soil and soil amendment reports.
  - .2 Submit agronomic test reports for compost, in accordance with The Compost Quality Alliance.
    - .1 Test results include analysis of pH, C:N ratio, moisture, particle size, soluble salts and sodium.

## 1.5 DELIVERY, STORAGE AND HANDLING

- .1 Deliver, store and handle materials in accordance with Section 01 61 00 – Common Product Requirements and the manufacturer's written instructions.
- .2 Delivery and acceptance: bags of fertilizer labelled with mass in kg, mixture components and percentages, date of bagging, supplier's name and lot number.
- .3 Storage and handling
  - .1 Store materials in a clean, dry, well-ventilated area, in accordance with manufacturer's recommendations.
  - .2 Replace defective or damaged materials with new materials.

## PART 2 - PRODUCT

### 2.1 TOPSOIL

- .1 Topsoil for planting beds/seeded areas: mixture of particulates, micro-organisms and organic matter that provides a suitable medium for supporting intended plant growth.
  - .1 Potting soil to be placed at the bottom of planter:
    - .1 Potting soil made from peat soil, coarse sand, dead earth and loam, cattle and horse manure, as well as vegetable compost.
    - .2 Composition:
      - 4-8% organic matter (OM)
      - Cation exchange capacity (CEC) > 10
      - Phosphorus ppm > 40
      - Potassium ppm > 45
      - Calcium ppm < 4,000
      - Aluminium ppm > 100
      - Manganese ppm > 100
      - pH 5.5-7.0
    - .3 Mixed, crushed and screened at 3/4 inch or 20 mm, absence of rocks > 5 mm. The mixture must be free of wood debris and contain a minimum of weed seeds or rhizomes.
    - .4 Potting soil must be easy to apply and must have a relatively normal moisture content (8-15%).

- .5 Grain size of mineral portion of potting soil.

Size (mm)	% passed
0.080	15-35
0.160	35-65
0.315	50-85
0.630	80-95
1.25	90-97
2.50	98-100

- .2 Potting soil for top layer intended for planting:

- .1 Thickness: 300 mm
- .2 Superior potting soil made from peat moss, peat soil, sandy loam, composted manure, compost, and coarse sand.
- .3 Composition:  
20-40% organic matter (OM)  
Cation exchange capacity (CEC) > 20.  
Phosphorus ppm > 40  
Potassium ppm > 45  
Calcium ppm < 4,000  
Aluminium ppm > 100  
Manganese ppm > 100  
pH 5.5-7.2
- .4 Mixed, crushed and screened at 1/2 inch or 12.50 mm, absence of rocks > 3 mm. The mixture must be free of wood debris and contain a minimum of weed seeds or rhizomes.
- .5 Potting soil must be easy to apply and place and must have a relatively normal moisture content (7-14%).
- .6 Grain size of mineral portion of potting soil.

Size (mm)	% passed
0.080	15-35
0.160	35-65
0.315	50-85
0.630	80-95
1.25	90-97
2.50	98-100

## 2.2 SOURCE QUALITY CONTROL

- .1 Advise the Departmental Representative of proposed supply sources for top soil at least 5 days in advance for testing purposes.
- .2 The Contractor is responsible for determining soil amendment needs so as to supply topsoil as specified.
- .3 Soil testing must be done by a recognized testing laboratory for pH, phosphorus, potassium, and organic matter levels, as well as texture (sand, silt, clay) in percentages.
- .4 All required testing will be carried out by the testing laboratory designated by the Departmental Representative. Soil sampling, testing and analyses must be done in accordance with provincial standards and will be at TPSGC's expense.

## **PART 3 EXECUTION**

### **3.1 EXAMINATION**

- .1 Verification of conditions: verify that the condition of the substrate previously installed under other sections or contracts is acceptable and permits the spreading of top soil in accordance with manufacturer's written instructions.
  - .1 Visually inspect the substrate in the presence of the Departmental Representative.
  - .2 Inform the Departmental Representative of any unacceptable conditions immediately upon discovery.
  - .3 Proceed with the installation only after the unacceptable conditions have been remedied and after receipt of written approval to proceed from the Departmental Representative

### **3.2 ACCEPTANCE**

- .1 The Departmental Representative will inspect and test topsoil and determine acceptability of material, depth of topsoil, and final grading.

### **3.3 CLEANING**

- .1 Progress cleaning: Clean in accordance with Section 01 74 11 - Cleaning.
  - .1 Leave work area clean at the end of each working day.
- .2 Final cleaning: Upon completion remove surplus materials, rubbish, tools and equipment in accordance with Section 01 74 11 - Cleaning.
  - .1 Clean and return to their original condition all areas affected by the work.
- .3 Waste management: Separate waste materials for reuse/recycling, in accordance with Section 01 74 21 – Construction/Demolition Waste Management and Disposal.
  - .1 Remove recycling containers and bins from site and dispose of materials at appropriate facility.

## **END OF SECTION**

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## **PART 1 - GENERAL**

### **1.1 RELATED SECTIONS**

- .1 Section 31 32 19.02; 32 91 19.14

### **1.2 REFERENCES**

- .1 Definitions
  - .1 Mycorrhiza: Symbiotic association between fungus and plants roots. This symbiosis enhances plant establishment in newly landscaped and imported soils.
- .2 References
  - .1 Agriculture and Agri-Food Canada (AAFC).
    - .1 Plant Hardiness Zones in Canada-2000.
  - .2 Canadian Nursery Landscape Association - CNLA
    - .1 Canadian Standards for Nursery Stock-2006.
  - .3 Health Canada/Workplace Hazardous Materials Information System (WHMIS).
    - .1 Material Safety Data Sheets (MSDS).
  - .4 U.S. Environmental Protection Agency (EPA) / Office of Water
    - .1 EPA 832/R-92-005, Storm Water Management for Construction Activities: Developing Pollution Prevention Plans and Best Management Practices.

### **1.3 ADMINISTRATIVE PROCEDURE**

- .1 Submit work schedule to the Departmental Representative, for examination, seven (7) days prior to the delivery of plants.
- .2 The work schedule must indicate the following information:
  - .1 Type and number of plants.
  - .2 Delivery dates.
  - .3 Arrival dates at the site.
  - .4 Planting dates.

### **1.4 SUBMITTALS**

- .1 Submit required documents and samples in accordance with Section 01 33 00 – Submittal Procedures.
- .2 Product data
  - .1 Submit data sheets, as well as manufacturer's instructions and printed product literature for trees, shrubs, ground cover plants, fertilizers, mycorrhiza, anti-dessicant agents, anchoring material, and mulch. The data sheets must indicate product characteristics, performance criteria, physical size, limitations and finishes.  
Submit two (2) copies of data sheets required under the WHMIS, in accordance with Section 01 35 29.06 – Health and Safety.
- .3 Samples
  - .1 Submit samples of mulch, mycorrhiza, and guying assembly (or nylon pipe).

## 1.5 QUALITY ASSURANCE

- .1 Competencies
  - .1 Landscape contractor: Must be a member in good standing of the horticultural trade association FIHOQ (Fédération interdisciplinaire de l'horticulture ornementales du Québec) and APPQ (Association des paysagistes professionnels du Québec).
  - .2 Plantation supervisor: Landscaping technician certified in planting.
  - .3 Landscape maintenance supervisor: Landscaping technician certified in landscape maintenance.

## 1.6 DELIVERY, STORAGE AND HANDLING

- .1 Deliver, store and handle materials in accordance with Section 01 61 00 – Common Product Requirements.
- .2 Delivery and acceptance: Deliver materials to the site in their original factory packaging, which must bear a label indicating the manufacturer's name and address.
  - .1 Protect plants from frost, excessive heat, wind and sun during delivery.
  - .2 Protect plants from damage during transportation.
    - .1 When the delivery distance is less than 30 km and the truck is travelling under 80 km/h, tie tarpaulins around plants or over truck box.
    - .2 When the delivery distance is greater than 30 km or the truck is travelling over 80 km/h, use an enclosed truck, if possible.
    - .3 Protect foliage and root balls using anti-desiccants and tarpaulins, where use of enclosed truck is impractical due to size and weight of plants.
- .3 Storage and handling
  - .1 Immediately store and protect plants that will not be planted within one (1) hour, in accordance with the supplier's written recommendations and after arrival on site, in storage location approved by the Departmental Representative.
  - .2 Protect stored plant material from frost, wind and sun and as follows:
    - .1 For plants with bare roots, preserve moisture around roots by heeling-in or burying roots in sand or topsoil and watering to full depth of root zone.
    - .2 For plants in containers, maintain moisture level in containers. Heel-in fibre pots.
    - .3 For balled and burlapped root balls in wire baskets, place them so as to protect branches from damage. Maintain moisture level in root zones.
  - .3 Store and manage hazardous materials in accordance with manufacturer's written instructions.
- .4 Packaging waste management: Separate waste for reuse and recycling of pallets, cases, padding, other packaging materials by their manufacturer, according to the construction materials management plan, in accordance with Section 01 74 21 – Construction/Demolition Waste Management and Disposal.

## 1.7 MEASUREMENT FOR PAYMENT

- .1 Planting will be paid in units of plants installed in accordance with planting details.
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## **1.8 WARRANTY**

- .1 The plants shall be covered by a warranty as soon as they are planted, up to 12 months after substantial completion, which will happen at the end of the last phase.
- .2 The contractor hereby guarantees that the plants as itemized on plant list will remain free of defects, in accordance with General Conditions in article CG 12.3 of General Conditions of the CCDC, for one full growing season, with plants being subject to one verification, provided adequate maintenance has been provided.
- .3 End-of-warranty inspection will be conducted by the Departmental Representative.
- .4 The Departmental Representative reserves the right to extend Contractor's liability for an additional one year if, at end of the initial warranty period, leaf development and growth is not sufficient to ensure future survival.

## **PART 2 - PRODUCT**

### **2.1 PLANTS**

- .1 Type of root preparation, sizing, grading and quality: compliant with Canadian Standards for Nursery Stock.
  - .1 Source of plants: grown in zone 5 and less, in accordance with Plant Hardiness Zones in Canada.
  - .2 Plants must belong to species suited to the in which they will be planted.
  - .3 Plants must belong to species suited to the location in which they will be planted.
- .2 Plants: free of disease, insects, defects or injuries and structurally sound with strong fibrous root system.
- .3 Trees: with straight trunks, well and characteristically branched for species.
- .4 Indigenous stock: maximum 40 mm in diameter, with well-developed crowns and characteristically branched; no more than 40% of overall height.
  - .1 During harvest, ensure that not more than 10% of a seed crop (or plant) is harvested within a numerous and healthy population, and among several plants of the same species.
  - .2 Leave the remaining plants for natural dispersion and as food for dependent organisms.

### **2.2 WATER**

- .1 Free of impurities that could inhibit plant growth.

### **2.3 STAKES**

- .1 T-bar, steel, 40 mm x 40 mm x 5 mm x 2,440 mm, painted green. See details.

### **2.4 WIRE TIGHTENER**

- .1 Type 1: 3-mm diameter steel wire.
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## **2.5 GUYING WIRE**

- .1 Tubes: plastic reinforced with nylon, 13-mm diameter.

## **2.6 TRUNK PROTECTION**

- .1 Bottom drain made in corrugated polyethylene.

## **2.7 MULCH**

- .1 Mulch composed of ramial shredded chips: varying in size from 25 mm to 125 mm in length, from coniferous trees.

## **2.8 FERTILIZERIS**

- .1 Commercial chemical fertilizers as recommended by manufacturer.
  - .1 Ensure that new roots are in contact with mycorrhiza.
  - .2 Use mycorrhiza according to manufacturer's written recommendations.

## **2.9 ANTI-DESICCANT**

- .1 Wax-like emulsion.

## **2.10 SOURCE QUALITY CONTROL**

- .1 Prior to planting, submit plants to the Departmental Representative for examination.

# **PART 3 - EXECUTION**

## **3.1 EXAMINATION**

- .1 Verification of conditions: Before planting, verify that the condition of the substrate previously installed under other sections or contracts is acceptable and permits the achievement of the work in accordance with manufacturer's written instructions.
  - .1 Visually inspect the substrate in the presence of the Departmental Representative.
  - .2 Inform the Departmental Representative of any unacceptable conditions immediately upon discovery.
  - .3 Proceed with the installation only after the unacceptable conditions have been remedied and after receipt of written approval to proceed from the Departmental Representative.

## **3.2 SITE WORK**

- .1 Proceed with work only after having received written approval from the Departmental Representative with regard to plants.
  - .2 Cut damaged roots and branches from plants.
  - .3 Apply anti-dessicant agent to conifers and to the foliage of deciduous trees in leaf in accordance with manufacturer's instructions.
  - .4 Identify and protect public utility conduits.
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### 3.3 PREPARATION OF PLANTING BEDS

- .1 Establish the drainage layer in clean stone and the other layers of potting soil based on the Departmental Representative's details and recommendations.
- .2 Prepare planting beds as specified in Section 32 91 19.14 – Topsoil placement on green roofs.
- .3 Add required amendments as requested in planting details.
- .4 Planting holes
  - .1 Submit planters to the Departmental Representative for examination prior to proceeding with planting.
  - .2 Excavate to depth and width indicated (if required).

### 3.4 PLANTING

- .1 For burlapped root balls, cut away top one-third (1/3) of burlap without damaging root ball.
  - .1 Do not remove the burlap or the cord under the ball.
- .2 For container plants or root balls wrapped in non-degradable material, remove entire container or wrapping without damaging the root ball.
- .3 Plant vertically in indicated locations.
  - .1 Orient plants to obtain the best appearance in relation to surrounding structure, such as buildings, roads, and walkways.
- .4 Trees and shrubs
  - .1 Backfill soil in 150-mm layers.
    - .1 Tamp down each layer to eliminate air pockets.
    - .2 When two-thirds (2/3) of the depth of the planting hole has been backfilled, fill remaining space with water.
    - .3 After water has penetrated the soil, backfill to final grade.
  - .2 Form a watering saucer as indicated.
- .5 For ground covering plants, backfill soil evenly to final grade and tamp down to eliminate air pockets.
- .6 Water plants thoroughly.
- .7 Once soil has settled, fill with soil to final grade.

### 3.5 TRUNK PROTECTION

- .1 Install trunk protection on deciduous trees as indicated.
- .2 Install trunk protection prior to installation of stakes, when used.

### 3.6 STAKES

- .1 Install stakes as indicated.
  - .2 Use only one (1) stake for deciduous trees less than 3 m tall and evergreens less than 2 m tall. Install two (2) stakes for multi-trunk trees, attaching to either side of the tree.
    - .1 Place stake on prevailing wind side, 150 mm from trunk.
    - .2 Drive stake to a depth that will not damage the root-repelling membrane, but deep enough to hold the stake.
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- .1 Ensure stake is secure, vertical, and intact.
- .3 Install 150-mm long guying collar 1,500 mm above grade.
- .4 Thread type 1 guying wire through guying collar; twist wire around the tree to form a collar.
  - .1 Twist wire to secure firmly to stake, cut off excess wire.
- .5 After having installed stakes, remove broken branches using clean, sharp tools.

### 3.7 MULCHING

- .1 Ensure soil settlement has been corrected prior to mulching.
- .2 Spread mulch as indicated.

### 3.8 MAINTENANCE DURING ESTABLISHMENT PERIOD

- .1 Perform the following maintenance operations from time of planting to acceptance by the Departmental Representative.
  - .1 Water to maintain soil moisture level conducive to optimum establishment, growth and health of plants, without causing erosion.
    - .1 For evergreen plants, water thoroughly in late fall prior to frost to saturate soil around root system.
    - .2 Remove weeds monthly.
    - .3 Replace or respread disturbed mulch.
    - .4 For non-mulched areas, cultivate as required to keep top layer of soil friable.
    - .5 If required to control insects, fungus and disease, use appropriate methods in accordance with federal, provincial and municipal regulations. Obtain product approval from the Departmental Representative prior to application.
    - .6 Cut away dead or broken branches.
    - .7 Keep trunk protection and guy wires properly repaired and adjusted.
    - .8 Remove and replace dead or diseased plants in the manner specified for original plantings.

### 3.9 MAINTENANCE DURING WARRANTY PERIOD

- .1 From time of acceptance by the Departmental Representative to the end of the warranty period, perform the following maintenance operations.
  - .1 Water to maintain soil moisture level conducive to optimum growth and health of plants, without causing erosion.
  - .2 Reform damaged watering saucers.
  - .3 Remove weeds monthly.
  - .4 Replace or respread disturbed mulch.
  - .5 For non-mulched areas, cultivate monthly to keep top layer of soil friable.
  - .6 If required to control insects, fungus and disease, use appropriate control methods in accordance with federal, provincial and municipal regulations. Obtain product approval from the Departmental Representative prior to application.
  - .7 Apply fertilizer in early spring, depending on results of soil test.
  - .8 Cut away dead, broken or hazardous branches.
  - .9 Keep trunk protection and tree supports in proper repair and adjustment.
  - .10 Remove trunk protection and tree supports, and level watering saucers at the end of the warranty period.
  - .11 Remove and replace dead or diseased plants in the manner specified for original plantings.
  - .12 Submit monthly written reports to the Departmental representative identifying:
    - .1 Maintenance work carried out.

- .2 Development and condition of plants.
- .3 Preventative or corrective measures required that are outside of the contractor's responsibilities.

### **3.10 CLEANING**

- .1 Progress cleaning: clean in accordance with Section 01 74 11 - Cleaning.
  - .1 Leave work site clean at the end of each working day.
- .2 Final cleaning: Upon completion remove surplus materials, rubbish, tools and equipment in accordance with Section 01 74 11 - Cleaning.

### **3.11 ACTIVITIES RELATED TO COMPLETION**

- .1 Submit maintenance reports for trees, shrubs and other plants.

**END OF SECTION**

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