



# City of Maple Ridge Street Tree Specifications

“Certified Professional” in this document refers to a Certified Arborist, a Certified Landscape Technician, or a Landscape Architect.

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## 1. General

### 1.1. Street Tree Planting Requirement

Street tree planting is a requirement of subdivision and development servicing of land in Zones identified in Schedule "A" of Maple Ridge Subdivision and Development Servicing By Law No. 4800-1993. Developers of such land shall prepare a street tree planting plan and install street trees in accordance with these specifications. The Developer shall provide a refundable deposit to the municipality for the cost to install, inspect and maintain the trees in accordance with these specifications.

### 1.2. Street Tree Planting Plan

The Developer of land shall submit to the City of Maple Ridge, a plan drawn to a legible scale of the proposed street tree design. Design of this plan shall be prepared by either a Landscape Architect registered with the British Columbia Society of Landscape Architects (BCSLA) or Landscape Designer being a person whose major professional occupation and training is in landscape and planting design.

The street tree planting plan shall show:

- a) The location of the proposed plant material with reference to:
  - Curbs
  - Sidewalks
  - Underground utilities
  - Overhead utilities
  - Driveways
  - Mailboxes
  - Street lights
  - Fire hydrants
  - Utility kiosks
  - Street and lane intersections
  - Personnel access holes
  - Valve boxes
  - All existing trees and shrubs within 6.0m of the front and exterior property lines.

In Commercial, Industrial, and Institutional zones include the following:

- Building projections, overhangs,
  - Awnings, canopies,
  - Doorways, and signs
- b) A detailed drawing as per the municipal street tree planting detail Schedule "A".
  - c) Plant list showing quantity, botanical name, common name, and size of proposed trees.
  - d) Detail of boulevard planting medium.

- e) Notation on drawing that "Final location and species selection shall be to the satisfaction of the City of Maple Ridge".
- f) All additional information requested by the City of Maple Ridge upon review of plans submitted.

## **2. Design Criteria for Street Tree Planting**

### **2.1. Plant Spacing**

Street trees shall be spaced depending on the species used in the design and the design of the streets and boulevards.

#### **Minimum Tree Planting Clearances**

Trees should be planted a minimum distance of:

- 6.0 metres from lamp standards
- 3.0 metres from utility poles
- 2.0 metres from sidewalk crossings, driveways, hydrants
- 1.2 metres from valve box, services, manholes
- 1.5 metres from sewer services
- 7.5 metres from street corners
- 3.0 metres from building for columnar trees
- 5.0 metres from building for spreading trees

Trees may be placed above a utility provided the utility has a minimum 0.9m cover.

**Variations to these distances may be accepted depending on species of tree and space constraints.**

### **2.2. Species Selection**

Street tree selection shall be made from the list of street trees listed in Schedule "B". Substitutions to this list will be considered by the City Arborist. If total number of trees is over 30 for any one development, there must be more than one species used, with no more than 50% of total number, of any one species.

Where trees are proposed to be planted within 5.0 metres of overhead conductors they shall have a maximum mature height of 6.0 metres or less. See Schedule 'B' overhead wires section.

### **2.3. Origin**

All plant material shall be nursery grown stock.

All plant material shall comply with the B.C.S.L.A./B.C.N.T.A. (British Columbia Nursery Trades Association) Landscape standard.

## **2.4. Tree Size and Structure**

Each tree shall be a minimum 6.0 centimetres calliper, 2.0 metres standard and not less than 3.5 metres in overall height. Each tree shall have a sturdy straight trunk with single predominant leader. Minimum branch height on trees shall be considered in street tree designs so as to not obstruct pedestrian movement. All measurement methods shall be as per the landscape standards in 3.8.2.3.

## **2.5. Root system**

Trees shall be ball and burlap, container grown stock, or bare root. The root system shall be strong, fibrous, free of disease, insects, defects, girdling, or injuries and shall be sufficiently developed to guarantee successful transplanting.

## **2.6. Condition**

All plant material shall be of good health and vigor with no visible signs of disease, insect pests, damage or other objectionable disfigurements. All trees are to be inspected by a Certified Arborist or Certified Landscape Technician before planting. The City Arborist may be called to inspect the trees once they are on site and before planting, to ensure they will not be rejected.

## **2.7. Mulch**

Shall be composted bark mulch, free of chunks and sticks, free of stones, roots, weed seeds and other extraneous matter. The mulch applied around the tree base is not to be deeper than 5 cm (2 inches); and shall not be mounded up around the base of the tree.

## **3. Construction**

### **3.1. Installation**

All installation shall comply with BCNTA/BCSLA landscape standards, latest edition.

### **3.2. Time of Planting**

Planting work is to be completed during normal planting seasons as dictated by weather conditions. Planting in frozen ground or with a frozen root ball is not acceptable.

Planting is not permitted during extremely hot, dry weather, or when rain has accumulated in the tree pit

All necessary precautions shall be taken to protect the plant material from severe weather conditions during transportation and planting.

### **3.3. Location of Planting**

Street trees shall be located within the road right of way a minimum of 1 metre from property line. Actual tree numbers, spacing and locations will vary according to existing site conditions and species selected. Locations shall be staked by the Landscape Architect/Designer or Developer's contractor and the Developer shall request a review of the stake locations by the City Arborist prior to planting. Minor alterations in location can be made by the Developer if obstructions are encountered. Obstructions requiring major alteration to the planting plan are to be reported to the City Arborist for resolution. (604-467-7499)

### **3.4 Preparation of Planting Area**

#### **Soil Medium:**

The area in which the trees are to be planted must be properly prepared with a minimum of 30 cm depth of quality topsoil in a continuous strip of at least 2 meters width, or the width of the separated boulevard. The subgrade of this planting strip must be pervious to water.

#### **Separated Boulevards:**

In separated boulevards, the entire length and width of the separated boulevard is to be prepared with a minimum depth of 100 cm of good quality top soil or structural soil. Root barriers shall be installed along the sidewalk edge to a depth of 45 cm; and a width of 5 metres centred at tree.

#### **Structural Soils:**

Where the planting area is less than 4 metres long and has driveways or other paved surfaces within that distance, structural soils shall be used beneath the paved surfaces to ensure proper tree root development. Structural soils shall be used beneath sidewalks in separated boulevards where street trees are planted.

### **3.5 Tree planting procedures**

All trees shall be planted as per Schedule A unless otherwise noted.

- a) All planting pits should be dug by hand with care as underground services may exist near proposed street tree locations. The planting pits shall be large enough to accommodate the entire root ball and with an additional 30 cm of loosened native soil around the inserted rootball. If present, the top third of the burlap shall be folded back, top wire bent back below soil level, and ties removed.
- b) The trees must be planted at the proper depth with the root collar at surface level. Cut all circling girdling roots that are obvious.
- c) The planting pit shall be back filled with the surrounding soil, and packed lightly to secure the tree and eliminate air pockets.

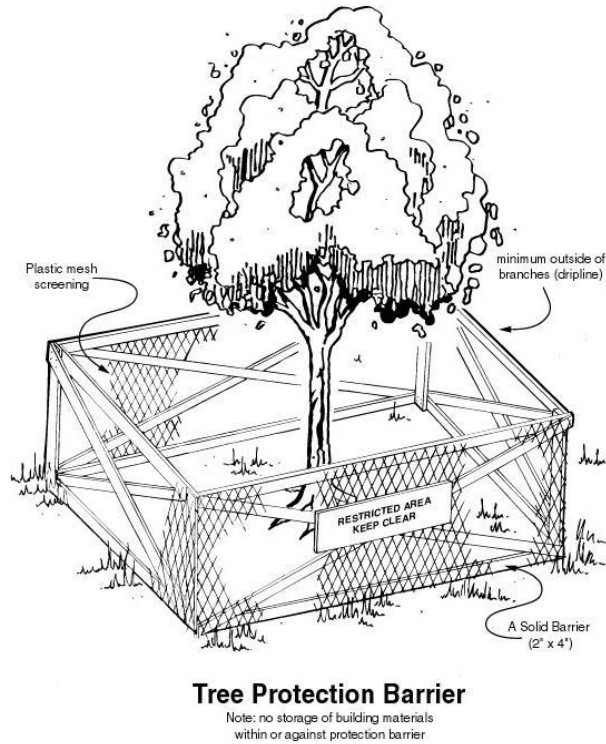
Refer to the B.C.N.T.A. Standards for procedures when planting trees from containers and wire baskets.

- d) Upon installation, trees are to be securely staked as per Schedule A.
- e) Trees shall be watered as required to minimize stress to the trees during hot weather.
- f) All excess soil, rock and debris shall be removed from the site on completion of planting.
- g) After clean up, the planting area shall be mulched with composted bark mulch (see 2.7 above). The mulch shall not be piled at the base of the tree trunk, and shall not be more than 5 cm in depth.

### **3.6 Tree Protection Fencing**

If planting of trees is to be carried out while there is still active building construction on site or before construction on the site has begun, then each planted tree within a construction zone must have protective fencing placed around it, as per the following:

- a) A protection barrier or temporary fence of at least 1.2 meters in height shall be placed around the tree at a minimum distance of 1.2 m from the trunk. This barrier must be in place before any demolition, excavation or construction work begins, and the barrier must remain intact throughout the entire period of construction.
- b) Protection barriers shall be inspected by the Project Certified Arborist, the registered Landscape Architect, or the City Arborist, before any work shall begin.
- c) Tree protection fencing shall consist of a suitable barrier material (eg plastic or wire mesh fence, wood snow fencing) attached securely to wood stakes spaced no further than 3 meters apart.
- d) The Protection Zone within the barrier fencing is off limits for all construction activity including storage, dumping, parking and machinery operation.
- e) Any required excavation in and around the Protection Zone shall be indicated on the plan and must be done by hand. (eg. underground servicing, footings, etc.)
- f) Grades within the Protection Zone shall be maintained as original. Re-grading outside the protection zone shall not negatively affect the drainage or the health of the tree.
- g) Trees within the Protection Zone shall be adequately cared for throughout the construction process.
- h) If trees within the Protection Zone are damaged beyond repair, they shall be replaced at the Developer/Owner's expense; and to the value as determined by the Certified Arborist and ISA guidelines and/or the Maple Ridge Tree Protection Replacement Schedule.
- i) The Tree Protection Barrier shall not be manipulated or removed without the consent of the Project Arborist or the City Arborist.



### 3.7 Plant Maintenance

The Developer shall maintain all trees in a healthy condition for a minimum one year period, as specified in the BCSLA/BCNTA landscape standard. Once installation is complete, the Developer or Contractor shall submit a copy of Schedule C (Installation Review) including the original Street Tree Plan with noted changes, to the City Arborist. This Schedule is to be **completed by a Certified Professional that did not do the planting**. The maintenance period shall begin upon issuance of the Street Tree Planting Certificate (Schedule D) by the City Arborist.

**Maintenance work shall include but not be limited to:**

- **Watering**
- **Repair or replacement of vandalized, dead and dying trees**
- **Removal of tree staking materials at the end of the warranty period**

The Municipality reserves the right to extend the Developer's maintenance responsibility for an additional year if, at the end of the initial period, leaf development, growth or overall vigor is not sufficient to ensure tree survival, or if trees were replaced near the end of the maintenance period.

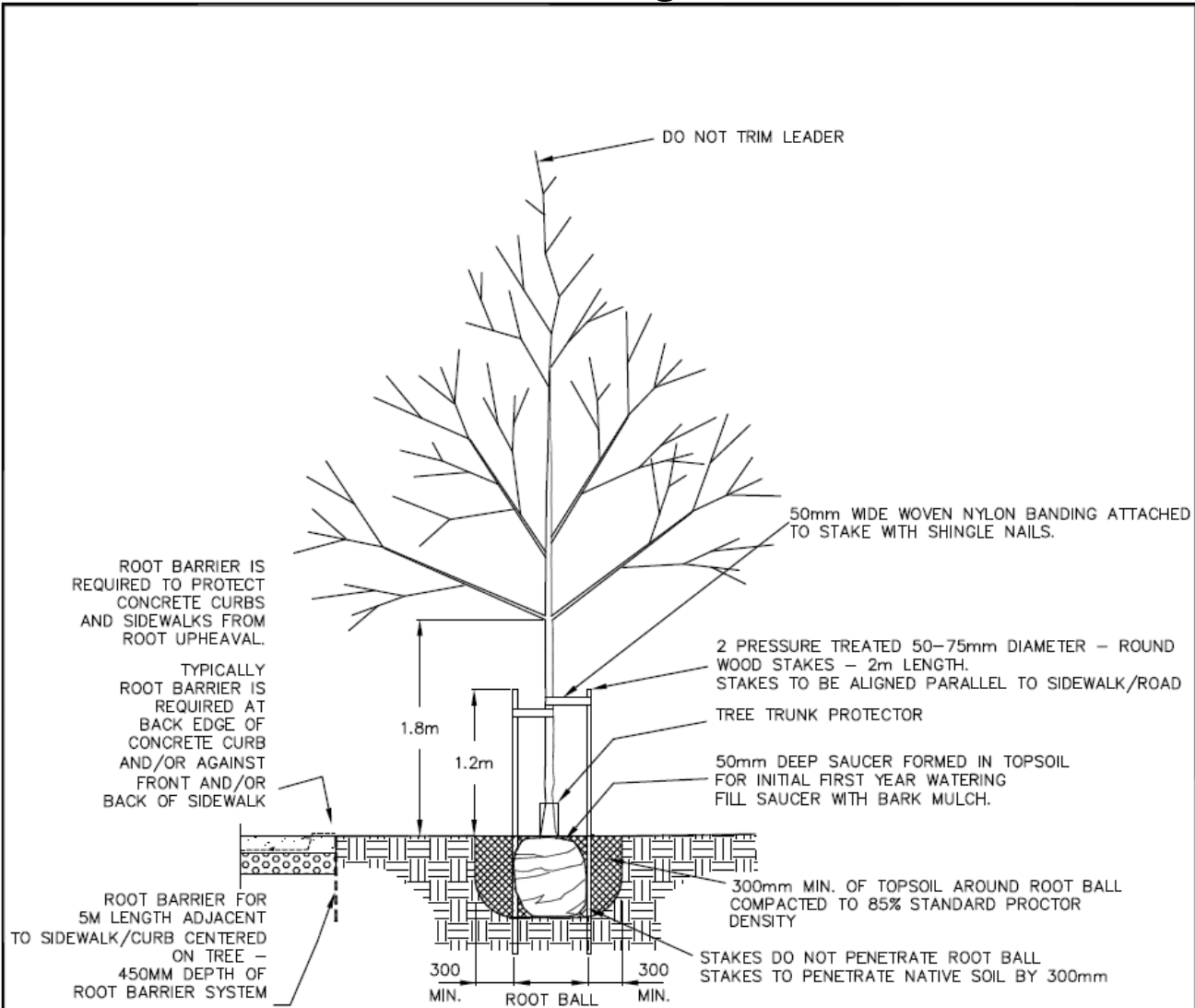
### **3.8 Replacements and Maintenance Period**

1. During the warranty period, the Developer shall replace all trees that die, are damaged or have failed to grow satisfactorily as determined by the Certified Arborist.
2. All replacements shall be with trees of the same species, variety, and size as the original planting, unless otherwise approved by the City Arborist.
3. The warranty on replacement trees shall extend for a period equal to the original warranty period.
4. The maintenance period ends when the Developer has submitted a Schedule E (Final Review) and the City has approved it. The City will issue a Schedule F (Final Certificate) and the refundable security for the Street Trees will be returned.



# Schedule "A"

## Street Tree Planting Detail



**NOTES**

- 1) SACKING/BURLAP TO BE LOOSENED AND DROPPED TO THE BOTTOM OF THE PLANTING HOLE. ALL STRING, TWINE, ETC. TO BE REMOVED.
- 2) ALL WIRE BASKETS SHALL HAVE THE TOP 1/3 OF THE WIRE FOLDED DOWN PRIOR TO PLANTING.
- 3) ALL TREES SHALL BE SINGLE STEMMED.
- 4) INSTALL APPROVED ROOT BARRIER SYSTEM - 'DEEPROOT' MODEL UB 18-2; 'VESPRO' MODEL RS-18; OR 'NDS' MODEL EP-1850. INSTALL AS PER MANUFACTURERS SPECIFICATIONS

### TREE PLANTING DETAIL

TREE PLANTING DETAIL					
CORPORATION OF THE DISTRICT OF MAPLE RIDGE ENGINEERING DEPARTMENT		NO. DATE		REVISION	
STANDARD DRAWINGS		DESIGN: JB		DRAWN: BS	
		DATE: JULY/07		SCALE: N.T.S.	
				DWG No. <b>SD L1</b>	

## Schedule "B" Street Tree Species List

### B.1. Trees for Wide Streets and No Overhead Wires: (more than 10 meters tall)

*Acer pseudoplatanus* *Atropurpureum* – *Spaethii* Maple

*Acer rubrum* – Maple – var: October Glory, Red Sunset, Redpointe, Sun Valley

*Acer X freemanii* Jeffersred – Autumn Blaze Maple

*Acer X truncatum* Keithsform - Norwegian Sunset Maple

*Acer X truncatum* Warrenred - Pacific Sunset Maple

*Aesculus arnoldiana* Autumn Splendour – Autumn Splendour Horse Chestnut

*Aesculus carnea* *briotii* – Red Horse Chestnut

*Betula nigra* BNMTF – Dura-Heat River Birch

*Betula populifolia* Whitespire – Whitespire Birch

*Carpinus betulis* Emerald Avenue – Hornbeam

*Carpinus caroliniana* Native Flame – American Hornbeam

*Celtis occidentalis* – Hackberry 35 x 25'

*Cercidiphyllum japonicum* – Katsura Tree

*Fagus sylvatica* – Beech, green, purple or tricolour 40 x 30

*Fraxinus americana* – White Ash –

*Fraxinus pennsylvanica* Cimmaron– Green Ash

*Ginkgo biloba* – Maidenhair Tree – male trees only

*Ginkgo biloba* The President - gold maidenhair tree

*Gleditsia tricanthos inermis* – Honey Locust

*Gymnoclades dioicious* – Espresso Kentucky Coffee Tree, seedless

*Liriodendron tulipifera* Arnold – Tulip Tree

*Nyssa sylvatica* – Black Tupelo, varieties – Gum Drop or Afterburner 35 x 20

*Quercus bicolor* – American Dream Oak

*Quercus frainetto* Schmidt – Forest Green Oak

*Quercus macrocarpa* – Bur Oak

*Quercus rubra* – Red Oak

*Tilia tomentosa* Sterling – Sterling Silver Linden

*Ulmus americana* – American Elm

## **B.2. Trees for Narrow Streets and No Overhead Wires:**

*Acer platanoides* – Norway Maple – Columnar varieties (only if no sidewalks)

*Acer miyabei* – State Street Maple – yellow fall color

*Acer rubrum* – Red Maple – varieties: *Armstrongi*, *Armstrong Gold*, *Scarlet Sentinel*

*Carpinus betulus Fastigiata* – European Hornbeam

*Fagus sylvatica fastigiata* – Red Obelisk Beech

*Fraxinus pennsylvanica Rugby* – Prairie Spire Ash

*Gingko biloba Golden Colonade* – columnar, gold

*Liriodendron tulipifera Arnold* – Tulip Tree *Emerald City* – 55 x 25

*Nyssa sylvatica Firestarter* – Tulepo, good fall color, seedless – 35 x 18

*Parrotia persica* – Ironwood, varieties - *Vannessa* or *Persian Spire*

*Pyrus calleryana Chanticleer* – Ornamental Pear

*Quercus x robur* - *Streetspire*, *Regal Prince*, *Skinny Genes*, *Urban Pinnacle*

## **B.3. Trees for Boulevards with Swales: (if overhead wires, < 10 m mature height)**

*Acer circinatum Pacific Fire* – Purple Vine Maple – great fall color

*Betula jacquemontii* – Jacquemonti Birch 12 X 10 m

*Betula nigra BNMTF* – Dura-Heat River Birch

*Betula populifolia Whitespire* – Whitespire Birch

*Carpinus caroliniana* – American Hornbeam 9 x 7 m

*Cercis canadensis* – Redbud

*Chionanthus retusus 'Tokyo Tower'* – Fringe Tree

*Gleditsia triacanthos Impcole* – Imperial Honeylocust 12 x 12 m

*Koelreuteria paniculata* – Goldenrain Tree 10 x 10 m

*Populus* – Mountain Sentinel Aspen 12 x 3 m

*Prunus virginiana Red Canada* – Chokecherry 8 x 7 m

*Styrax Fragrant Fountain* or *Marleys Pink Parasol* 3 x 3 m weeping

#### **B.4. Trees for Streets with Overhead Wires: (less than 10m mature height)**

Acer ginnala Red November – Red November Amur Maple

Acer grandidentatum Schmidt – Rocky Mountain Glow Maple

Acer griseum – Paperbark Maple

Acer platanoides Globosum – Globe Norway Maple

Aesculus carnea briotii – Red Horse Chestnut

Amelanchier x grandiflora – Serviceberry – var: Autumn Brilliance, Princess Diana

Carpinus betulus Globosum – Globe European Hornbeam

Carpinus caroliniana – American Hornbeam

Carpinus japonicas – Japanese Hornbeam

Cornus kousa cultivars – Kousa Dogwood, June Snow or Summer Fun

Crataegus X lavalleyi – Lavalley Hawthorn

Fraxinus pennsylvanica Johnson – Leprechaun Ash

Magnolia grandiflora Little Gem – Little Gem Magnolia

Parrotia persica – Persian Ironwood, varieties Ruby Vase or Vanessa or Persian Spire

Prunus serrulata – Japanese Flowering Cherry varieties: Kwanzan, Pink Perfection, Shirofugen, Snowgoose

Tilia cordata Halka – Summer sprite Linden

Prunus subhirtella – Flowering Cherry – varieties: Autumnalis, Whitcombi

Prunus yeodensis – Flowering Cherry – varieties: Akebono, Yoshino

Styrax japonica – Japanese Snowbell

Zelkova serrata Schmidtlow – Wireless Zelkova

#### **B.5. Trees Not to be Planted in Separated Sidewalk Boulevards:**

Acer platanoides

Prunus – ornamental cherries

Cercidiphyllum - Katsura