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APPENDIX 1

Street Tree Technical Details

BOULEVARD PLANTING GENERAL NOTES

(City of Vaughan, 2007)

1. Provide sample of shredded bark chip mulch prior to construction.
2. Provide topsoil testing results prior to construction.
3. Orient trees for best appearance.
4. No tree pits shall be left open overnight.
5. Any tree replaced during maintenance period requires 2" x 2" wooden stakes (6'0") as opposed to 'T' bars.
6. All trees not meeting City of Vaughan standards will be removed and replaced at no expense to the city.
7. All stakes and accessories shall be removed prior to the inspection for subdivision maintenance.
8. Straighten all leaning trees prior to inspection for subdivision maintenance.
9. Corrective pruning shall be completed prior to inspection for subdivision maintenance in accordance of industry standards, including the removal of:
 - One whorl of branches from the lower crown
 - Dead or broken branches
 - Trunk suckers
 - Co-dominant leaders
10. Top dress any settlement area with topsoil and sod prior to subdivision assumption.

BOULEVARD TREE PLANTING SPECIFICATIONS

(City of Vaughan, 2007)

1. General

The specifications are to be read in conjunction with the standard City boulevard tree planting details and the Canadian Nursery Trades Association Standards for Nursery Stock manual. Trees, topsoil and planting methods must meet the standards and specifications of the CNTA to be accepted by the City.

2. Topsoil Requirements

The City requires the entire planting area, outside the sidewalk, curb and driveway materials, will be filled with topsoil to a depth of 450mm. Prior to provision of the topsoil the Owner must provide a soils report which confirms the topsoil, to be utilized on the site, meets the horticultural standards noted herein. Submissions are to include the name of the development project, 19T or 65M number, streets to be planted in and the location of the topsoil source for viewing by City staff. Two copies of the written report, results and recommendations are to be provided to the City for review and approval.

2.1 All topsoil must be screened, fertile, friable, natural loam containing 4% minimum organic matter for clay loams and 2% minimum organic matter for sandy loams. Acidity of topsoil shall range from 6.0pH to 7.5pH (levels of NPK and Mg are to be noted). It shall be free of any mixture of subsoil, clay lumps, stones and roots over 50mm in diameter as well as any foreign objects, and shall be reasonably free of weeds and weed seeds.

2.2 Test topsoil from source providing 0.5kg samples to an approved testing laboratory, and indicate present use, type of subsoil and quality of drainage. Prepare and ship the samples in accordance with Provincial regulations and testing laboratory requirements.

2.3 The testing must identify if the following are present in harmful levels; atrazine, salts, pre-emergent herbicides growth inhibitors or soil sterilants and heavy metals.

2.4 Should the test results indicate the topsoil is not satisfactory the report shall include recommendations to improve the soil. The City reserves the right to reject topsoil that does not meet the standards.

2.5 In soils with low moisture holding capacities the City may direct the owner to apply Urea based polymers or Hydrogel to the planting soils.

2.6 When excavating the planting area, to install the topsoil, a continuous trench will be created. These trenches and/or planting pits shall not be left open overnight.

3. Stakeout of Boulevard Tree Locations (Forestry Department)

City of Vaughan Forestry Department is to be given 24 hours notice of tree planting stakeout meeting with consultant. Prior to the installation, a stakeout of boulevard tree locations is to be undertaken by the owner, to the approval of the City. The owner shall ensure all underground utilities (existing and proposed) are staked out prior to the boulevard tree stake out. The landscape consultant and the City may, at their discretion, redistribute tree locations, prior to planting, in order to minimize conflicts with utilities, driveways, and intersection visibility. The following distances are to be ensured in the location of trees within the boulevard:

- Not less than 1.0 metre from underground utilities, driveways, sidewalks, curbs, and utility pedestals.
- Not less than 3.0 metres from hydro transformers and fire hydrants.
- Not less than 0.9 metres from underground gas utilities.
- Not less than 3.0 metres from light poles for smaller ornamental/flowering and columnar street tree species. Not less than 5.0 metres from light poles for regular-sized street tree species.
- Not less than 10.0 metres from stop signs, subject to the approval of the City's Engineering Dept.

4. Tree Conditions

4.1 All trees must meet the highest standard of the Canadian Nursery Trades Associations Standard for Nursery Stock.

4.2 All trees shall have only one un-pruned and undamaged central leader. The branching shall be evenly spaced. Minimum Height to first branch 1.8m.

4.3 Trees shall not exhibit any mechanical damage (straight trunk clear of any defects).

4.4 All trees must contain the tags regarding species, variety and source of the plant material by the Nursery.

4.6 All root balls must be firm and securely wrapped in natural fibre and tied with biodegradable twine.

4.7 Trees which adapt only to Spring planting will not be accepted for Fall plantings.

4.8 Trees exhibiting weak graft unions will not be accepted.

4.9 Previous two years twig or shoot elongation must be present as typical for any species.

4.10 All plant material must be wrapped for transport, and must be removed prior to inspection on site.

4.11 Only stock which has been certified, by the Nursery, as having been root pruned within the previous 36 months shall be accepted.

5. Implementation

5.1 All trees to be inspected upon delivery to subdivision by the Forestry Department and acceptability is at their discretion. Request for inspection should be made through Parks Development Department.

5.2 No planting holes will be deeper than the overall soil ball and the tree shall be planted with the rootball 75mm to 100mm above grade. Trees will be placed so that main lateral branches are oriented away from the road.

5.3 All trees must be thoroughly watered(15 to 20 gallons) at planting and on a monthly basis between the 15th of May and the 30th of November each year, until assumption. The water should be applied slowly to prevent erosion and runoff. This shall be certified by the Consultant at the time of request for the commencement of the Guarantee Maintenance period and again at Assumption.

5.4 Deciduous trees are to be wrapped for the first year with burlap strip wrapping. Coniferous trees are to be wrapped for the first year with burlap wrapping. The City may require the wrap to be removed and replaced, by the Owner, during inspection periods.

5.5 All trees are to receive an appropriate Spring and Fall application of slow release granular balanced (18-18-18) fertilizer (25% SCU). Application rate 170 grams per 50mm cal. Tree. This shall be certified by the consulting landscape architect at the time of request for the commencement of the Guarantee Maintenance period and again at Assumption.

5.6 The City may direct the Owner to apply a Chlorosis treatment. This shall be certified by the consulting landscape architect at the time of request for the commencement of the Guarantee Maintenance period and again at Assumption.

5.7 All trees must be covered and kept in a moist condition if delivery and installation exceeds three hours.

5.8 No wound dressing shall be applied to pruning cuts.

5.9 No alteration to planting sites by third parties shall be accepted by the City.

6. Certification Guarantee Maintenance Certification

The consultant is to certify that all:

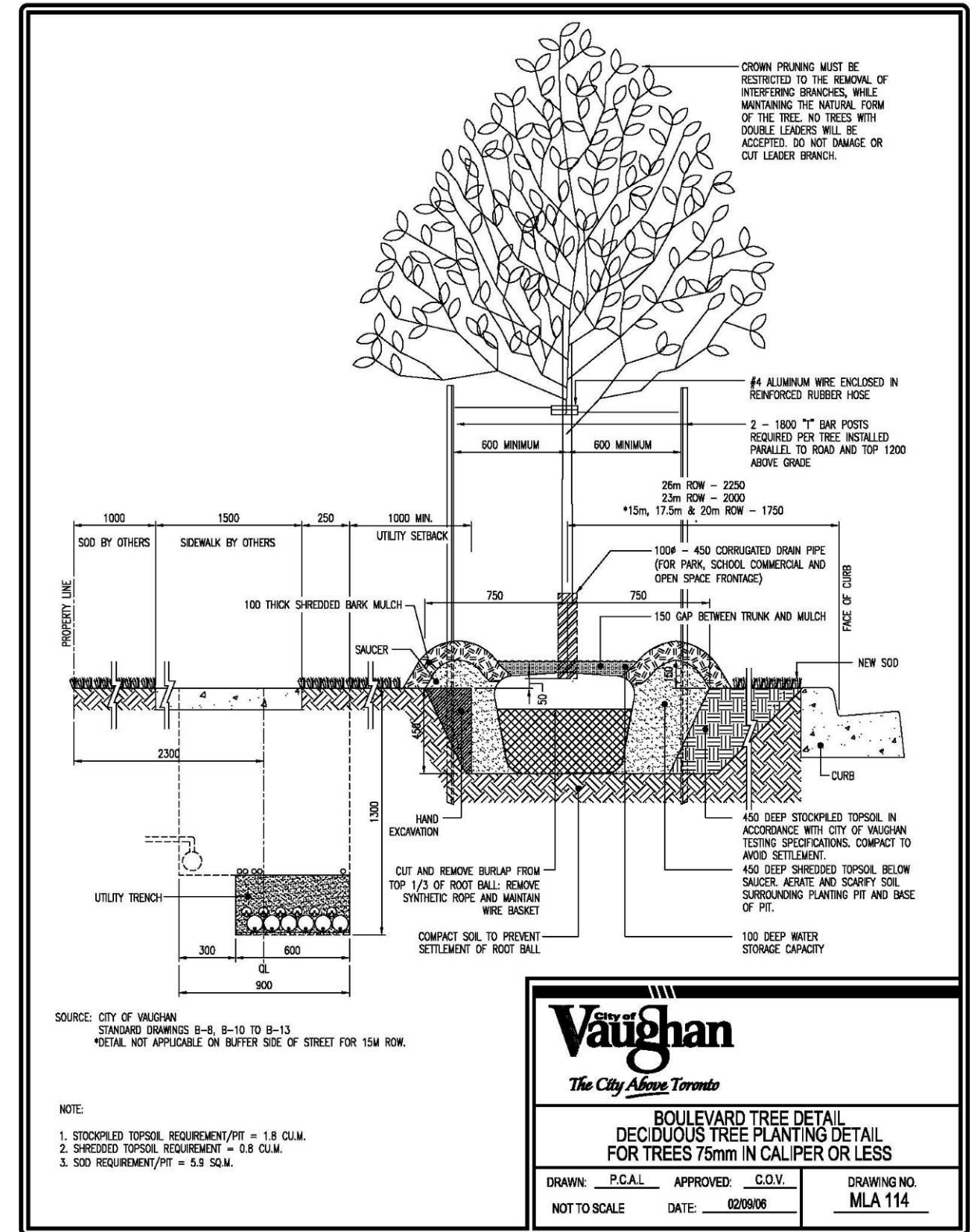
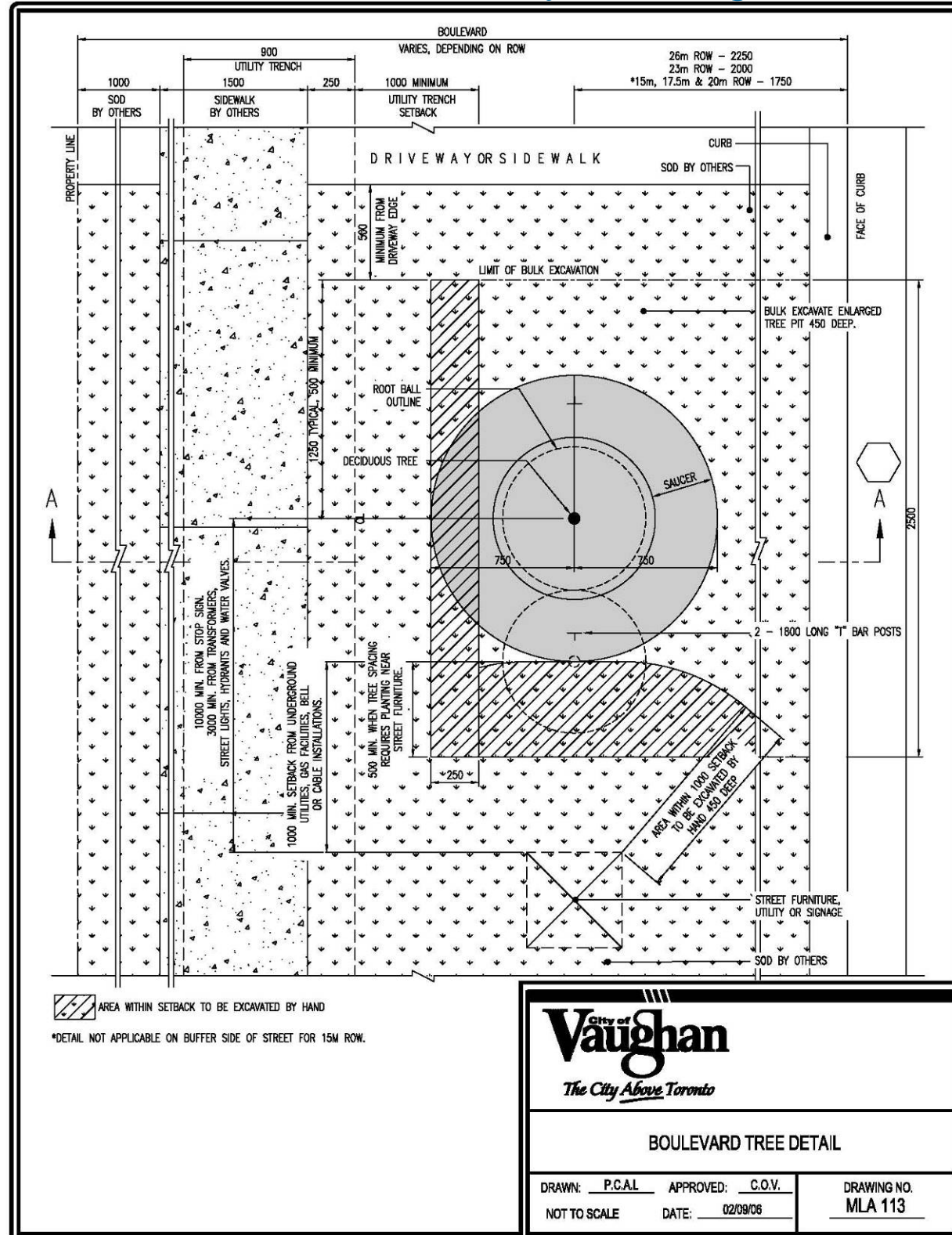
- .plant material was installed as per the details and specifications;
- .plant material is healthy condition for acceptance and in the ground 12 months;
- .landscape elements have been installed as per the details and specifications; and
- .As-builts are supplied (4 sets).

Assumption Certification

Drawings should be certified as previously required at Guarantee Maintenance but the plant material should be in an additional 13 months. Exceptions should be noted.

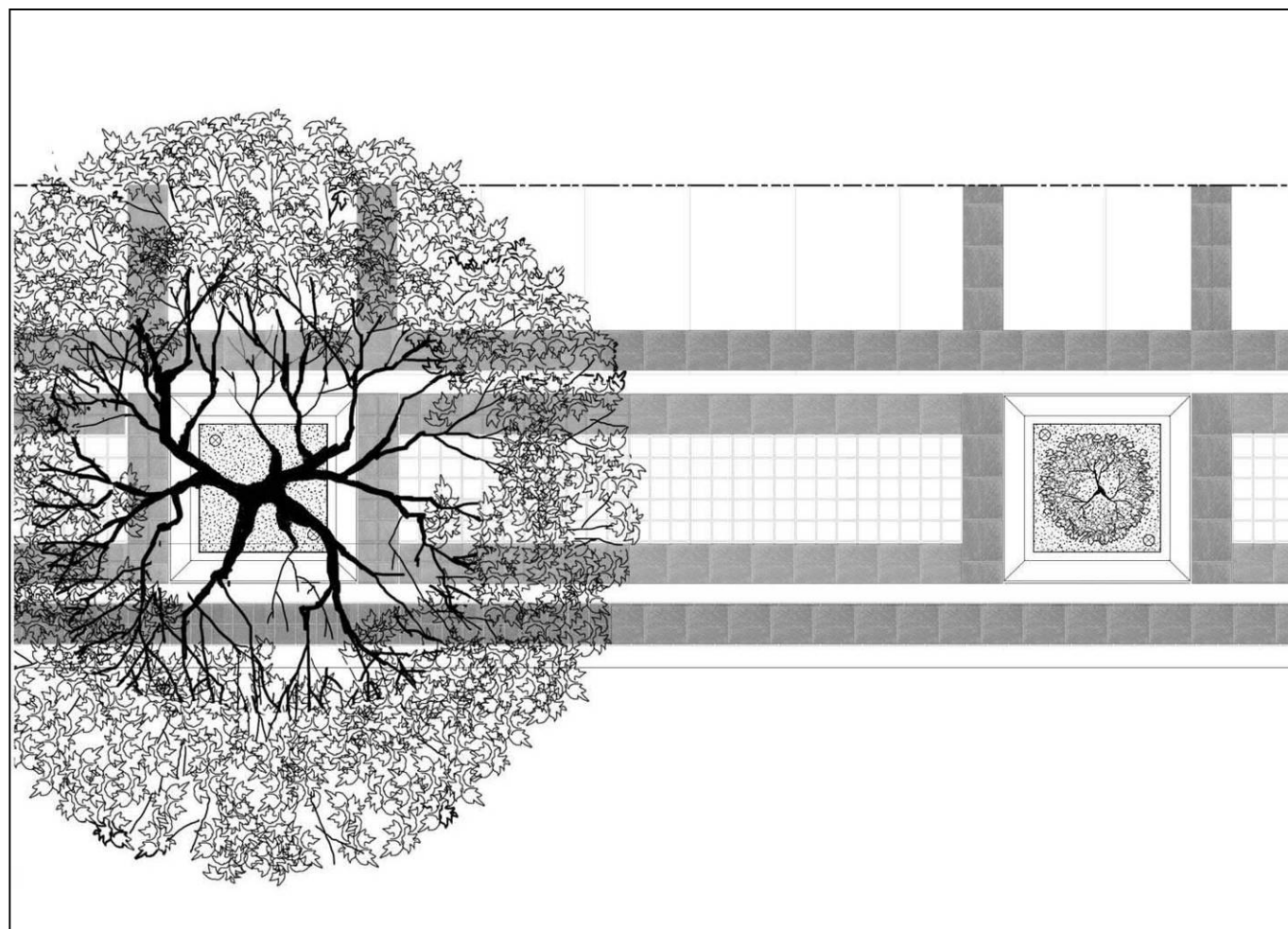
Note: The date of the last consultant inspection will be current within 2 months of the request from engineering to be considered valid.

Street Tree Technical Details - City of Vaughan Standards

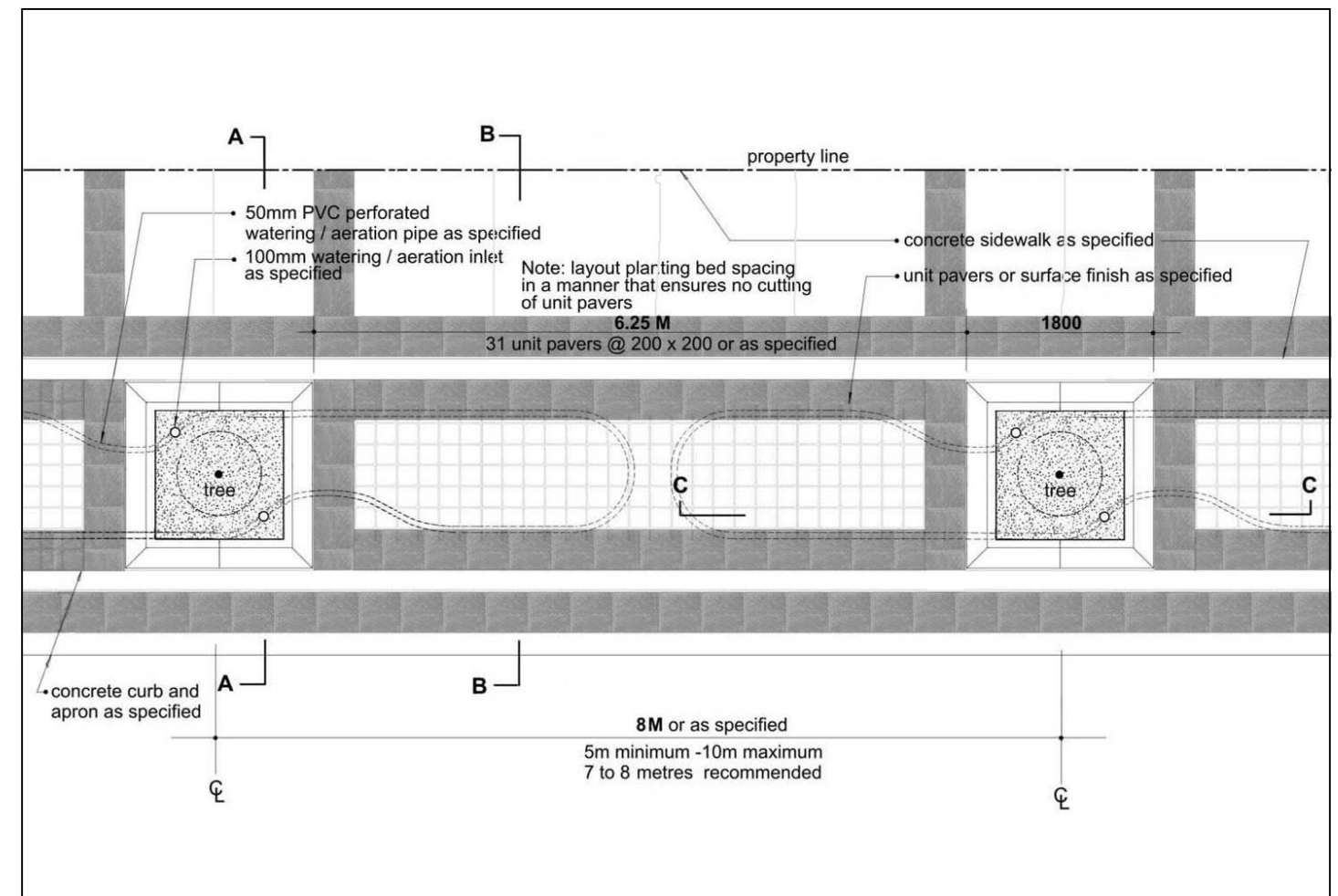


APPENDIX 2 Street Tree Planting Details

2.1 In-ground Planting

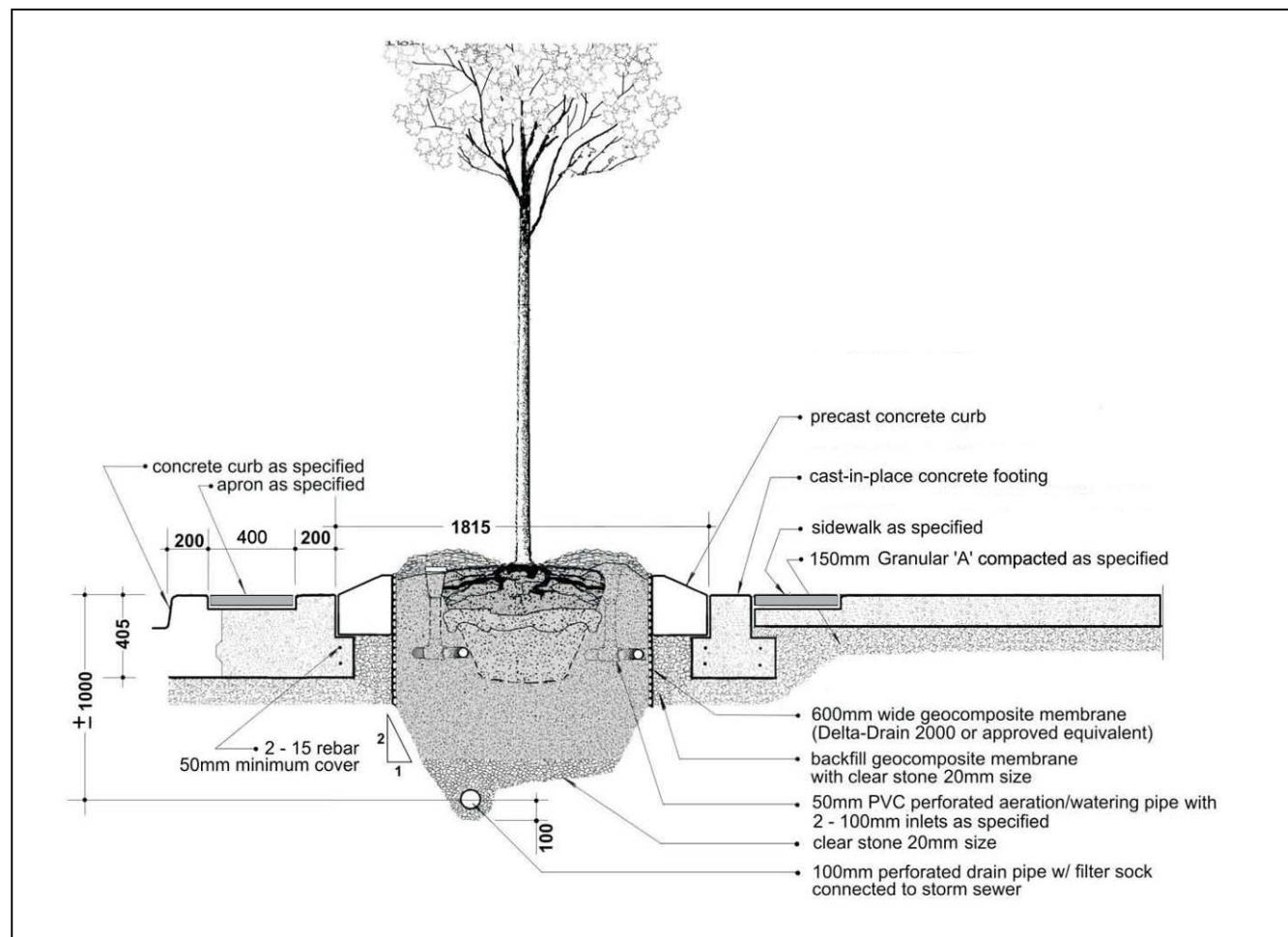


In-Ground Planting—Continuous Soil Trench with In-Ground Tree Planter and Concrete Sidewalk

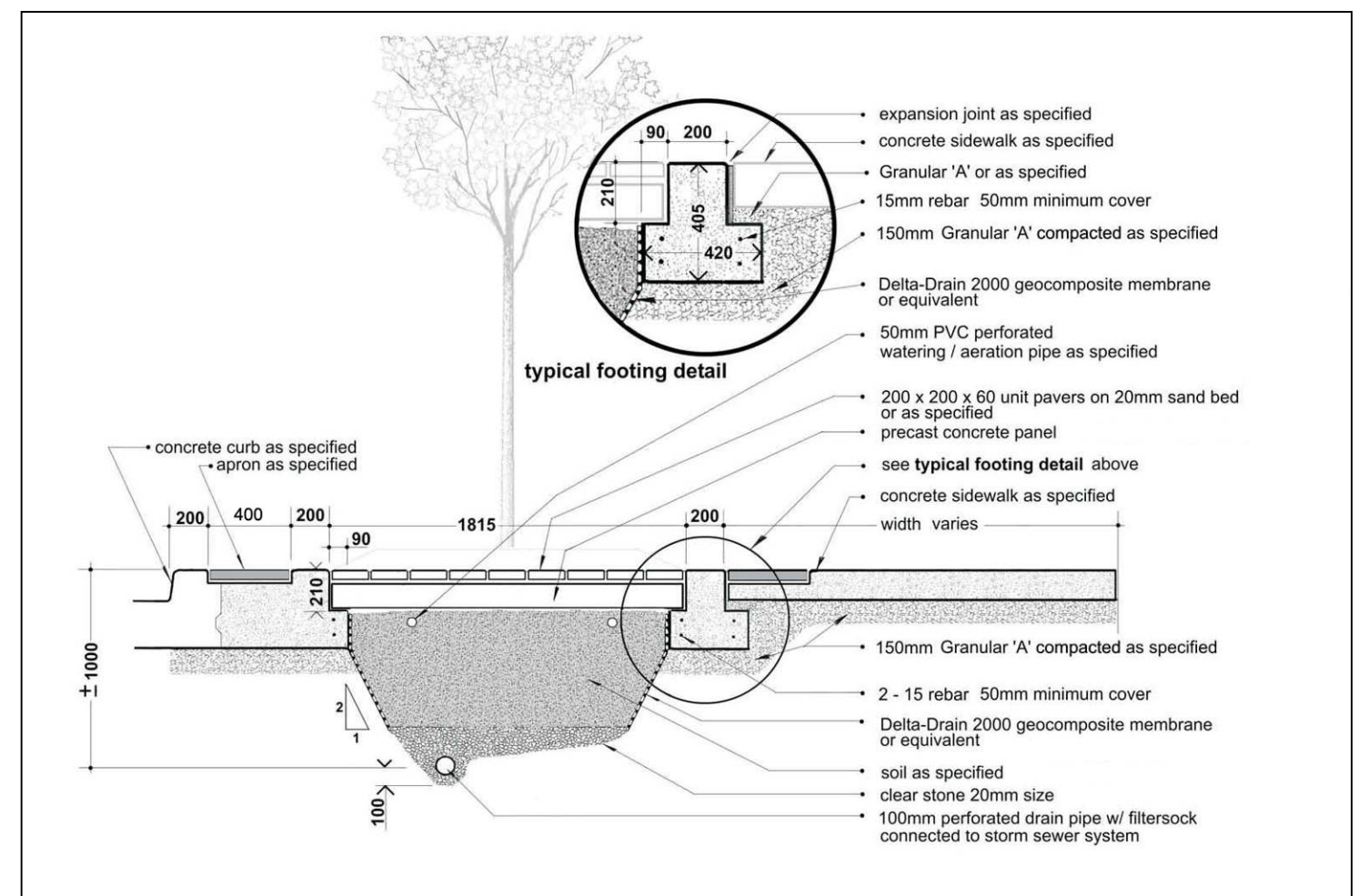


In-Ground Planting—Continuous Soil Trench with In-Ground Tree Planting and Concrete Sidewalk: Plan

NOTE: Adapted from City of Toronto Urban Forestry Streetscape Manual (July 2007); Streetscape Planting Details proposed on the following pages are beyond the Region of York's current standards.

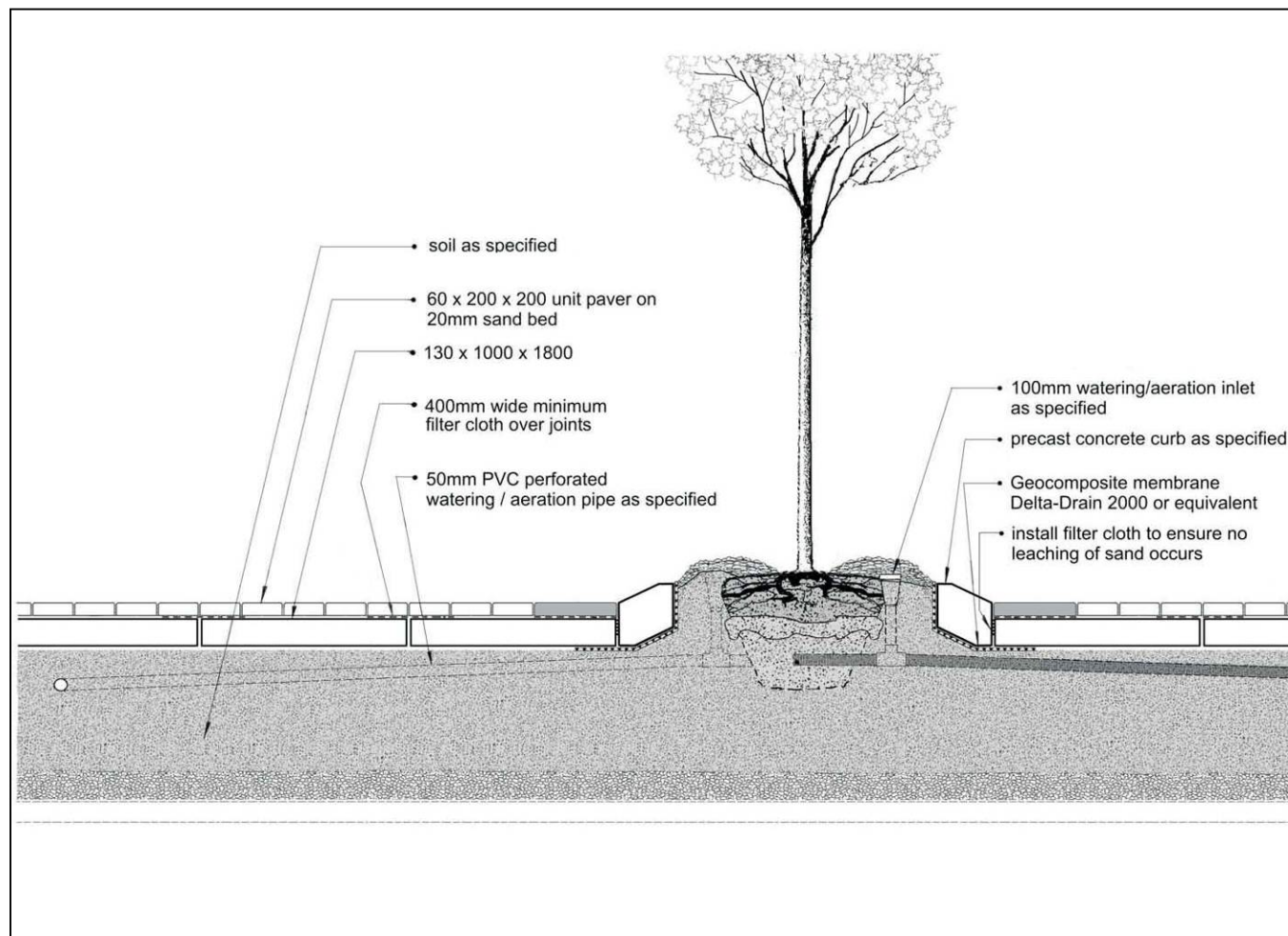


In-Ground Planting—Continuous Soil Trench with In-Ground Tree Planter and Concrete Sidewalk: Section A - A

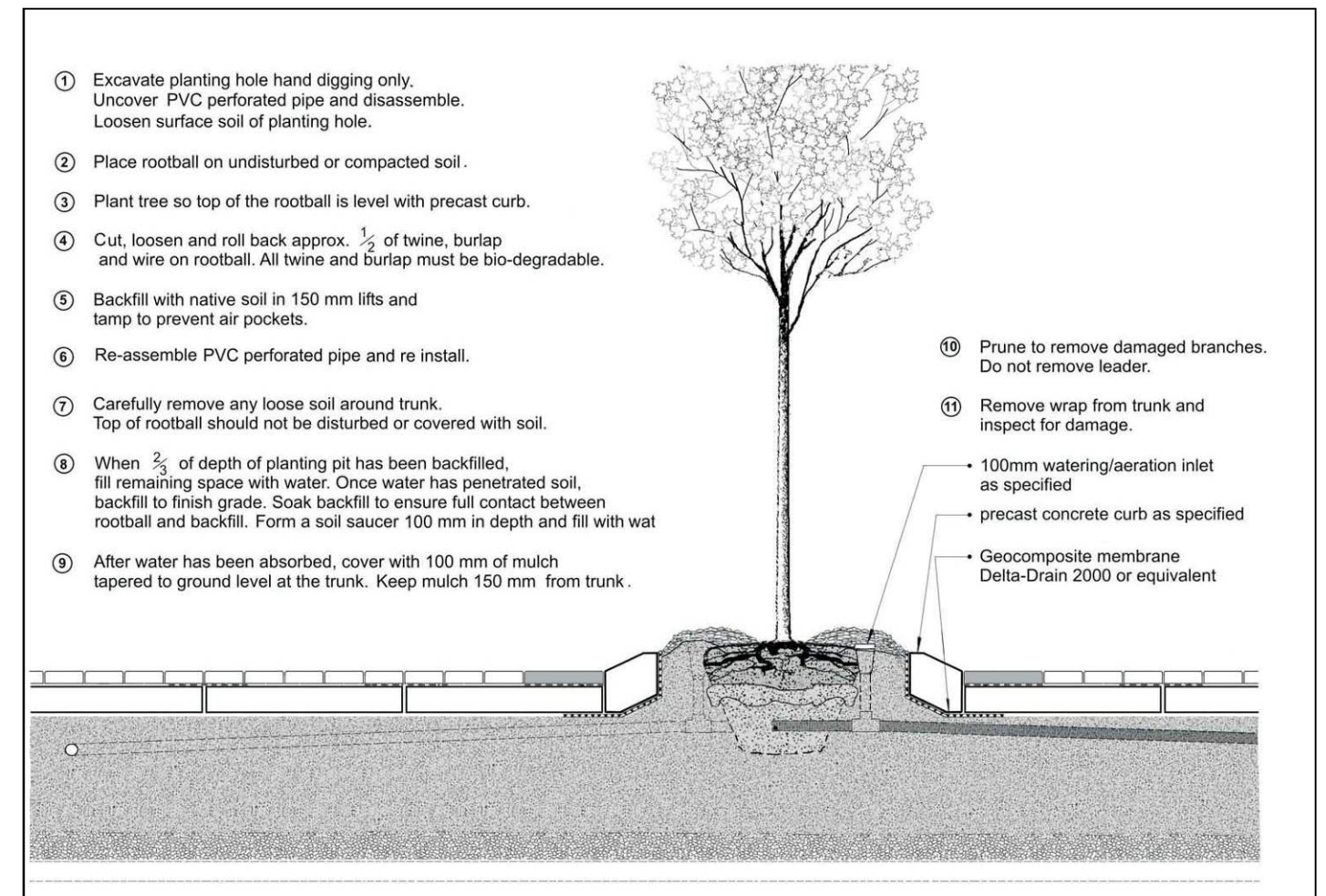


In-Ground Planting—Continuous Soil Trench with In-Ground Tree Planting and Concrete Sidewalk: Section B - B

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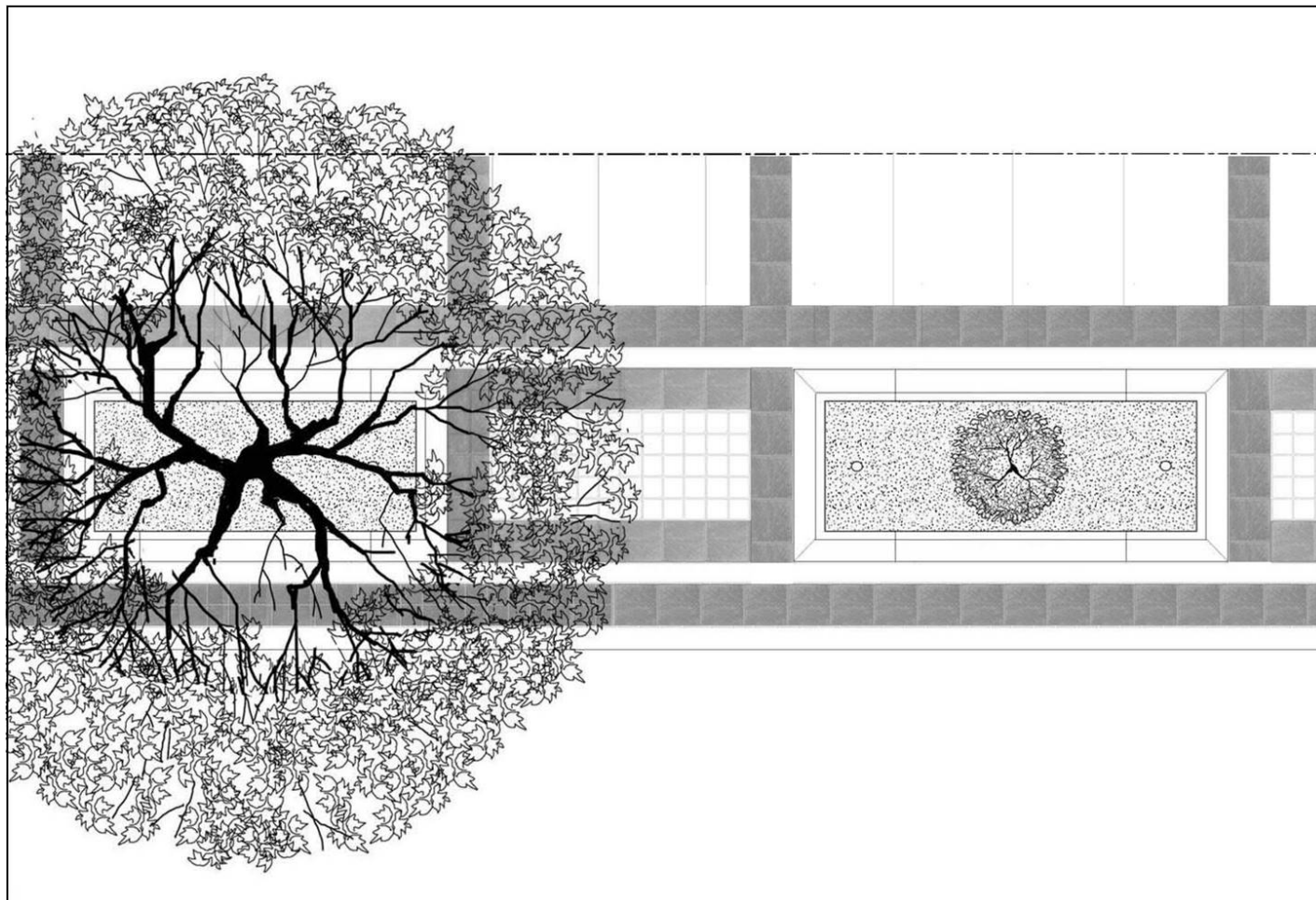
In-Ground Planting—Continuous Soil Trench with In-Ground Tree Planter and Concrete Sidewalk: Section C - C



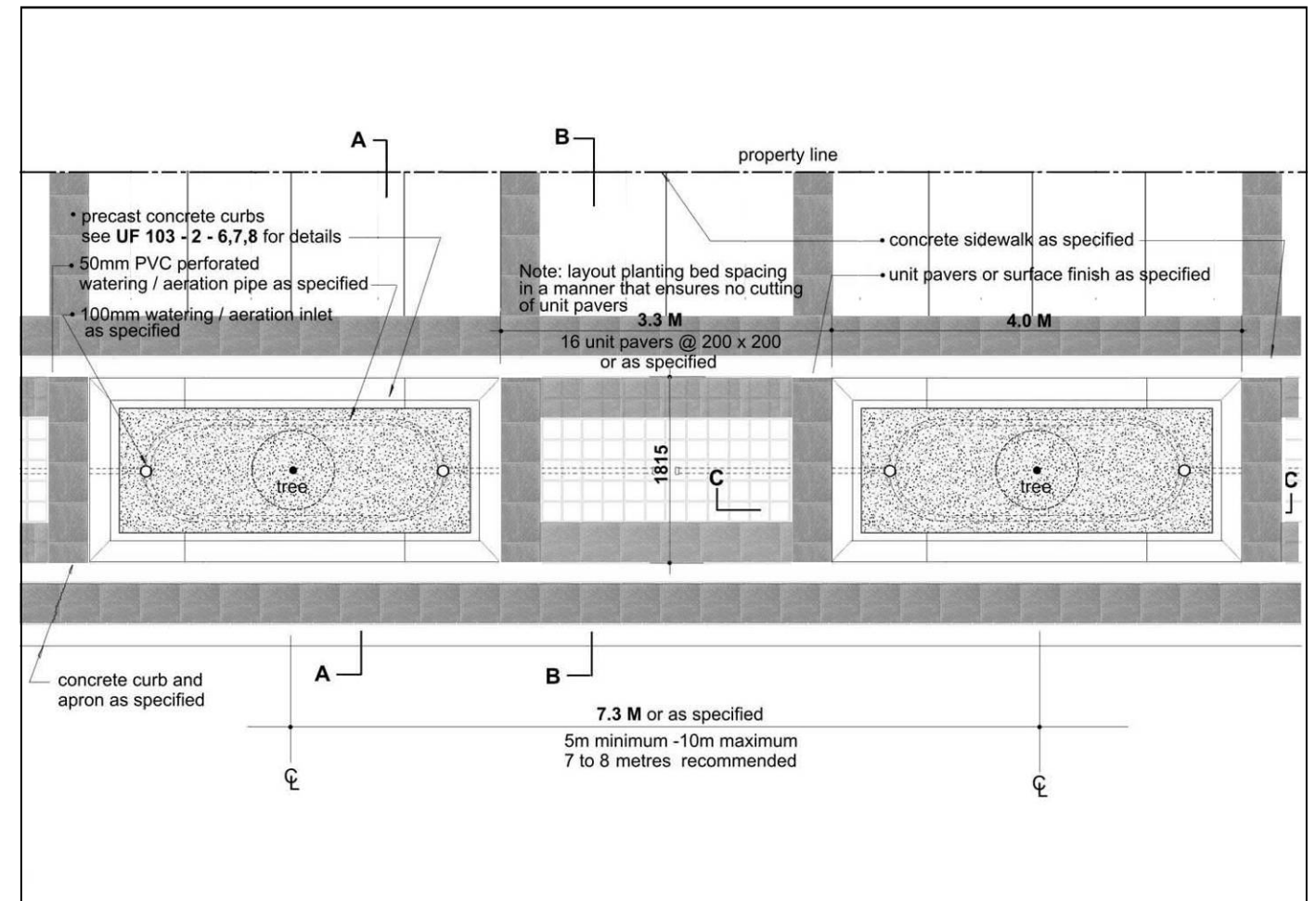
In-Ground Planting—Continuous Soil Trench with In-Ground Tree Planting and Concrete Sidewalk: Tree Planting Specifications

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2.2 Elongated Bed Planting

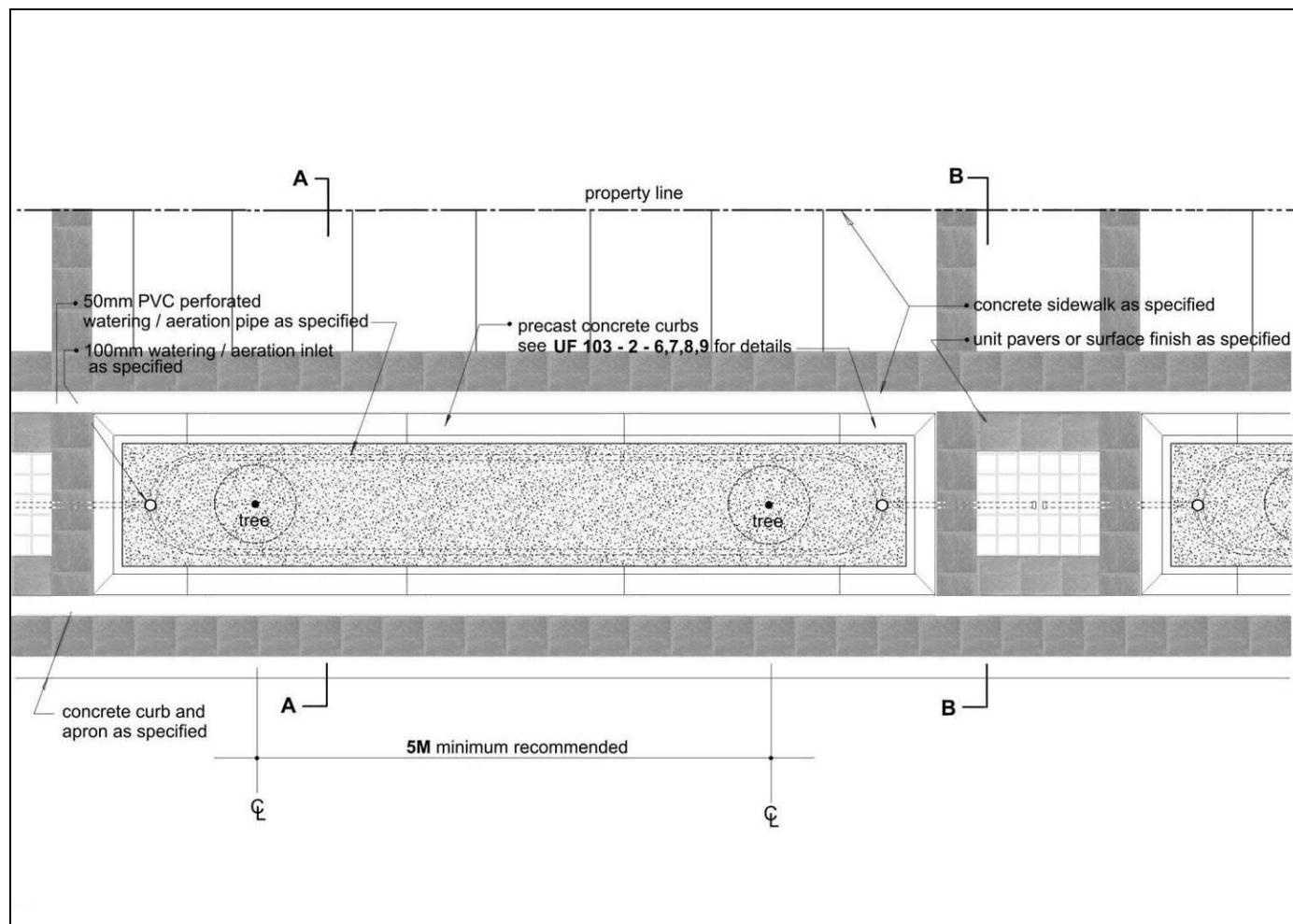


Elongated Bed Planting—Continuous Soil Trench with Planting bed and Concrete Sidewalk

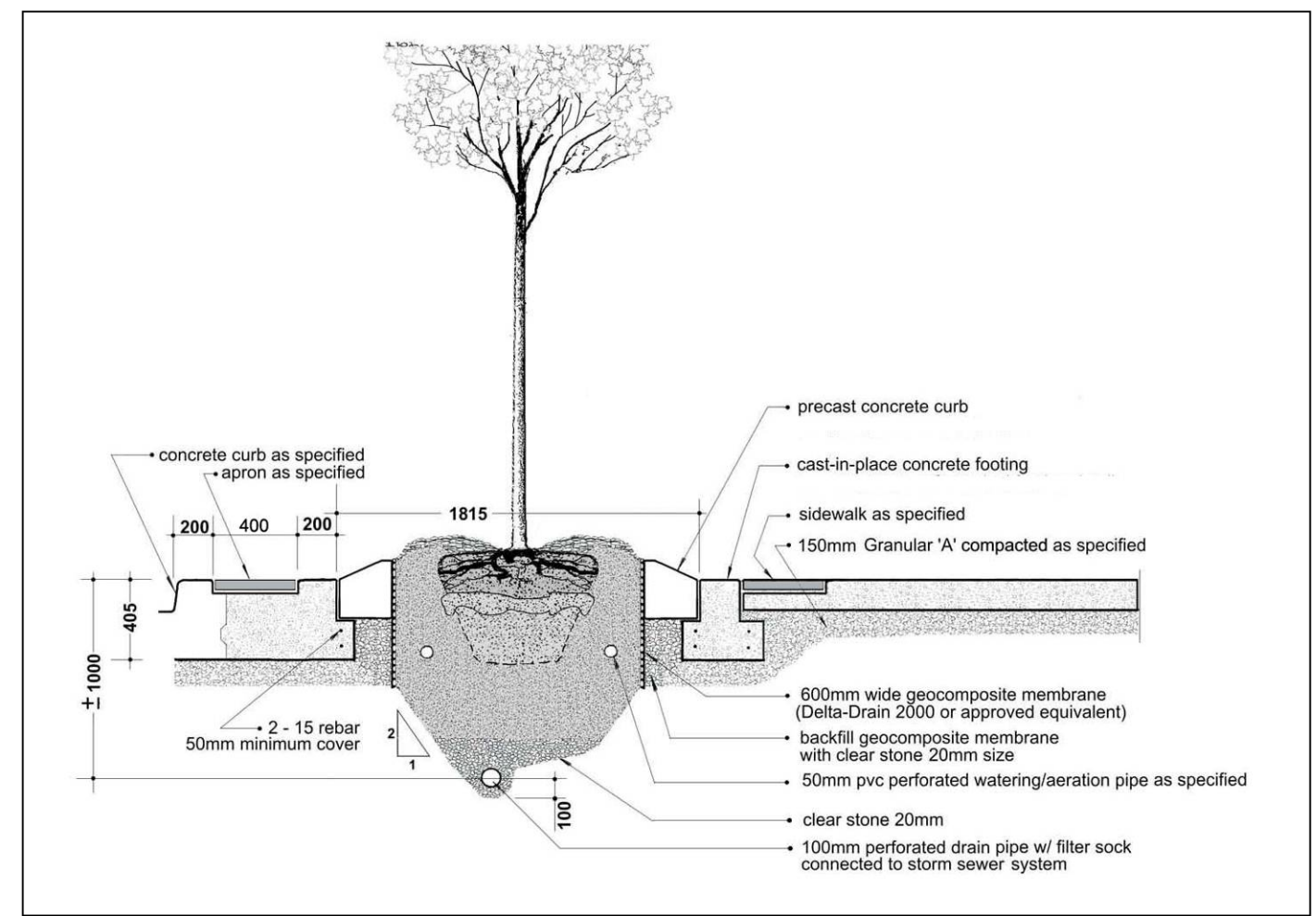


Elongated Bed Planting—Continuous Soil Trench with Planting bed and Concrete Sidewalk: Plan

NOTE: Adapted from City of Toronto Urban Forestry Streetscape Manual (July 2007); Streetscape Planting Details proposed on the following pages are beyond the Region of York's current standards.

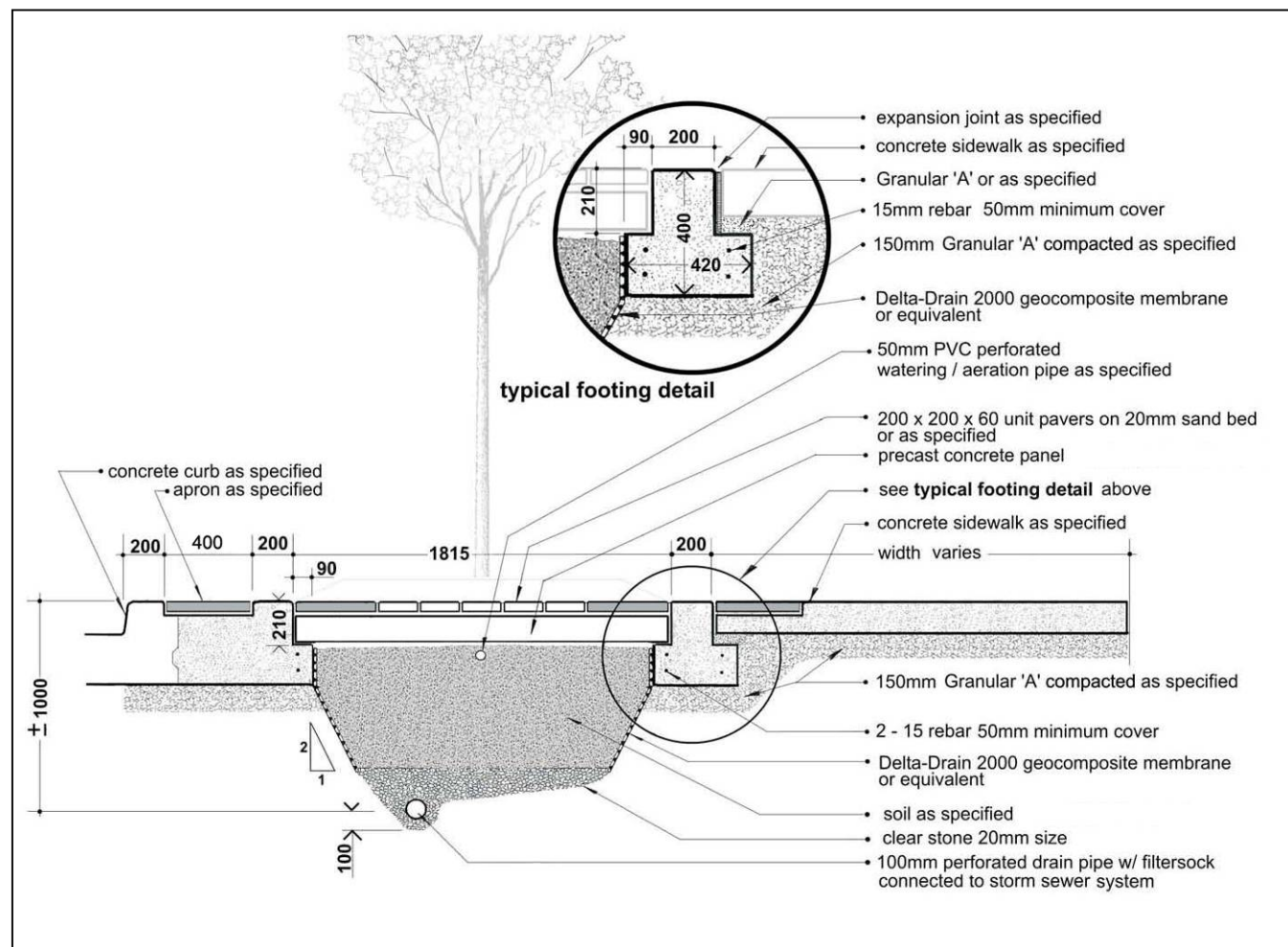


Elongated Bed Planting—Continuous Soil Trench with Extended Planting bed and Concrete Sidewalk: Plan

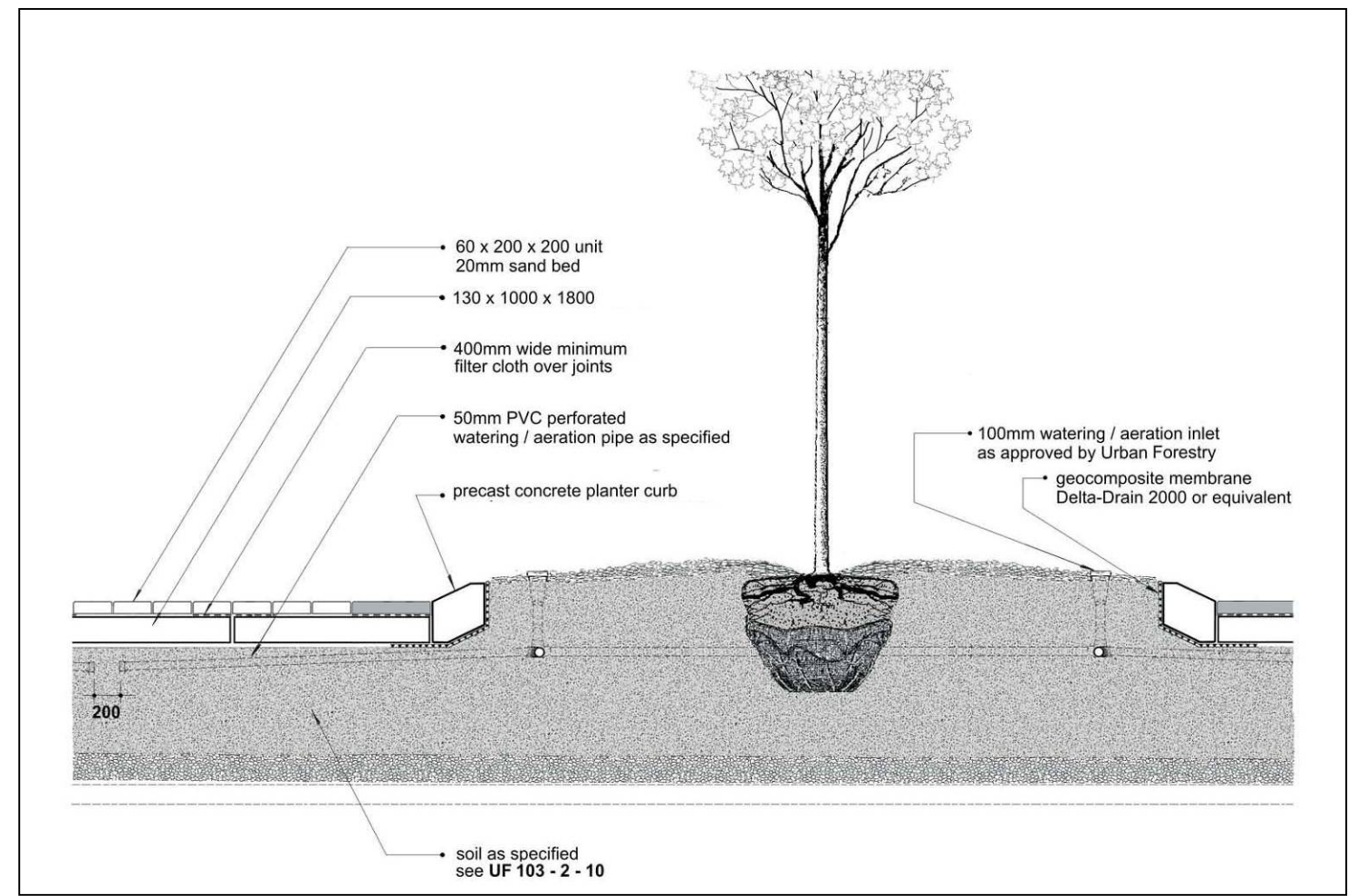


Elongated Bed Planting—Continuous Soil Trench with Planting bed and Concrete Sidewalk: Section A - A

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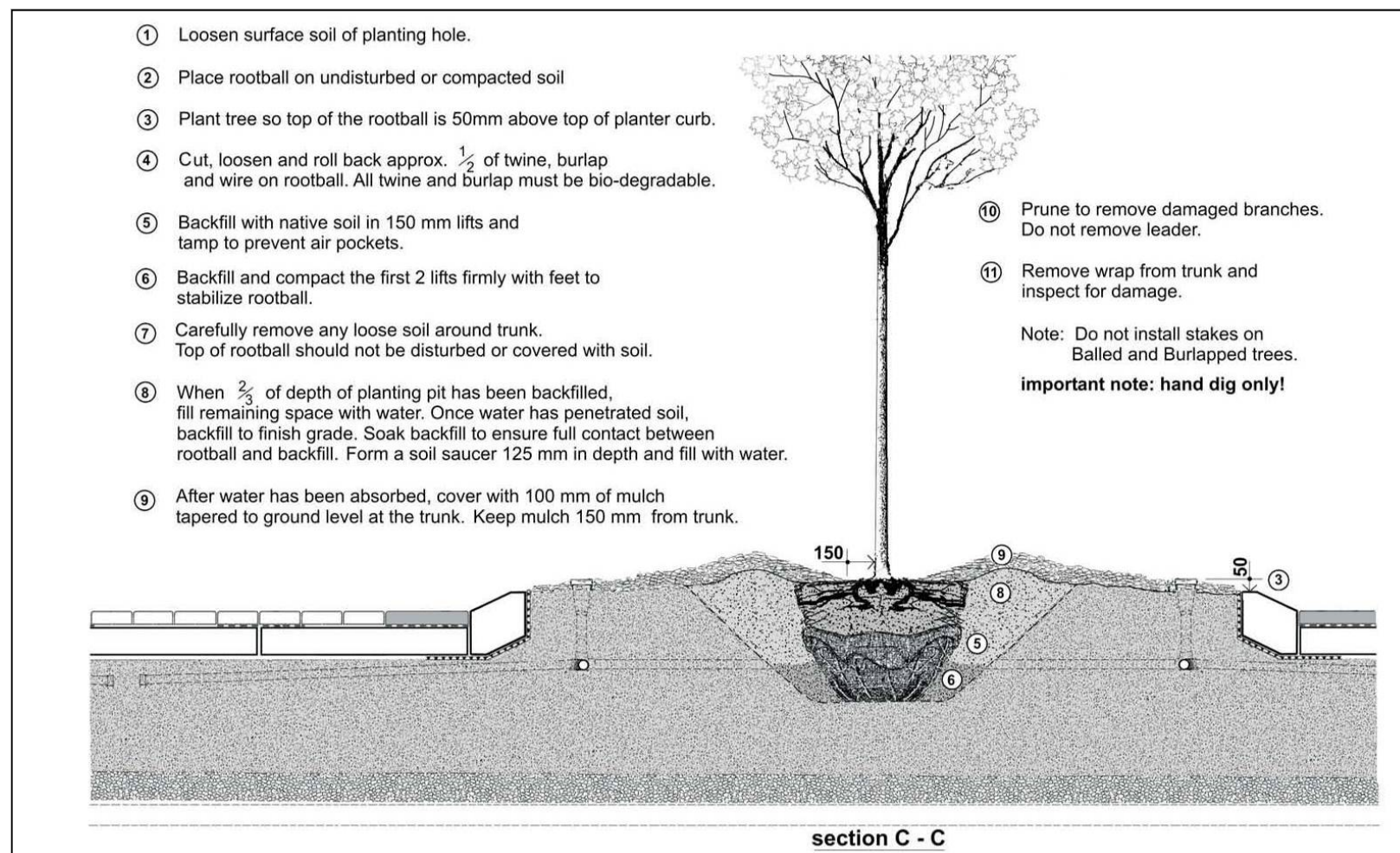


Elongated Bed Planting—Continuous Soil Trench with Planting bed and Concrete Sidewalk: Section B - B



Elongated Bed Planting—Continuous Soil Trench with Planting bed and Concrete Sidewalk: Section C - C

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Elongated Bed Planting—Continuous Soil Trench with Planting bed and Concrete Sidewalk: Tree Planting Specifications












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APPENDIX 3


York Region Acceptable Street Tree Species List

3.1 Full Sized Trees

Common Name	Scientific Name	Time	Native	General Comments
Ohio Buckeye	<i>Aesculus glabra</i>			prefers moist soils
Horse Chestnut	<i>Aesculus hippocastanum</i>	Sp		good spring flower with no seeds/rare/disease susceptible
Black Maple	<i>Acer nigrum</i>	Sp		lots of seed for winter interest/rare/needs moist soil
Norway Maple	<i>Acer platanoides</i>		I	invades native areas/surface roots conflict with turf/girdling roots/aphid problems/dense shade
	'Columnar, Olmsted, Superform'		I	narrow form (height about twice its width)
	'Crimson King, Schwedler, Royal Red'		I	dark red to green susceptible to reflected heat
	'Deborah, Emerald Queen'		I	excellent upright form
Sycamore Maple	<i>Acer pseudoplatanus</i>	Sp		very pollution tolerant/rare
Red Maple	<i>Acer rubrum</i>	Sp		green summer foliage & yellow/red fall colour/tolerates wet soil/some cultivars do not
Silver Maple	<i>Acer saccharinum</i>	Sp		aggressive root system/increased liability with age
Sugar Maple	<i>Acer saccharum</i>			upright form/fall colour varies/prefers good drainage
	'Green Mountain'			upright form/fall colour is a golden yellow/prefers good drainage/forms thick leathery scorch resistant leaves
Bitternut Hickory	<i>Carya cordiformis</i>			Adaptable to wide variety of soils/ might be better as a park tree or could be used in naturalization project/ messy tree
Northern Catalpa	<i>Catalpa speciosa</i>			useful in park planting
Ginkgo 'Maidenhair tree'	<i>Ginkgo biloba</i>	Sp		good yellow fall colour/thin bark/male variety only
Honey Locust	<i>Gleditsia triacanthos</i>			small leaves are difficult for home maintenance/provides a filtered shade/susceptible to defoliation
Kentucky Coffee tree	<i>Gymnocladus dioica</i>	Sp		interesting winter texture/open lawn setting/large leaves/male variety only
Butternut	<i>Juglans cinerea</i>			large tree/prefers moist rich soils/ good for naturalizing or park situations
Black Walnut	<i>Juglans nigra</i>			large tree/prefers moist rich soils/ good for naturalizing or park situations
Tulip Tree	<i>Liriodendron tulipifera</i>	Sp		good flowers & yellow fall color/ moist well drained soil/very large tree
Saucer Magnolia	<i>Magnolia x soulangiana</i>	Sp		good flowers low branching & spreading/scale problems
London Plane Tree	<i>Platanus x acerifolia</i>			frost cracks on trunk/attractive peeling bark/witch's broom is a problem
Ironwood	<i>Ostrya virginiana</i>	Sp		sudden mortality problem/trunk suckers heavy wood/borer problems
Bur Oak	<i>Quercus macrocarpa</i>	Sp		needs acidic soil/fruit maintenance difficult to transplant







Common Name	Scientific Name	Time	Native	General Comments
White Oak	<i>Quercus alba</i>			highly sensitive to disturbance/ slow growing tree/ dead wood sometimes needs to be trimmed
Swamp White Oak	<i>Quercus bicolor</i>			tolerant of wet soils/ difficult to transplant/ slow growing
Pin Oak	<i>Quercus palustris</i>			difficult to transplant/ slow growing
English Oak	<i>Quercus robur</i>	Sp		needs acid soil/fruit maintenance/difficult to transplant
	<i>Quercus robur</i> 'Fastigiata'	Sp		Columnar form, needs acid soil/holds leaves through the winter/difficult to transplant/very upright in form
Red Oak	<i>Quercus rubra</i>	Sp		needs acid soil/fruit maintenance/difficult to transplant/no tap root
Littleleaf Linden	<i>Tilia cordata</i>			showy & fragrant flowers/ Greenglobe may be used under hydro lines/aphid & borer problems/suckers from base/ messy species
Basswood, American Linden	<i>Tilia americana</i>			showy & fragrant light yellow flowers/suckers from base/ messy species
White Elm	<i>Ulmus americana</i>			susceptible to dutch elm and many other disease / problems when planted close to sidewalks/ susceptible to storm breakage
Homestead Elm	<i>Ulmus carpinifolia</i>		I	aggressive species & self-pruning/ can cause root problems/ resistant to Dutch Elm Disease
Balsam Fir	<i>Abies balsamea</i>			little maintenance required
Silver Fir	<i>Abies concolor</i>			little maintenance required
Eastern redcedar	<i>Juniperus virginiana</i>			insect problems with mites and others/ also susceptible to blights and is an alternate host for cedar apple rust
European Larch	<i>Larix decidua</i>			larch case-bearer insect occasionally can seriously disfigure the tree form
Tamarack	<i>Larix laricina</i>			smaller cones than <i>Larix decidua</i> resulting in less debris
Norway Spruce	<i>Picea abies</i>			In hot dry areas mites can be a problem/ little maintenance
White Spruce	<i>Picea glauca</i>			fine-textured juvenile needles, promotes winter dehydration within this species of <i>Picea</i>
Colorado Blue Spruce	<i>Picea pungens</i>			insect and mite may be a serious problem, which can destroy the formal proportion of the tree
Austrian Pine	<i>Pinus nigra</i>			tolerates urban settings better than most <i>Pinus</i> / can be susceptible to disease and insects/ litter can be a problem
Red Pine	<i>Pinus resinosa</i>			little maintenance required

Legend


-  species native to York
- I Invasive species not to be within 100 m of natural areas
- Sp Species which are sensitive to fall transplanting & should only be planted in the spring

3.2 Hydro Species

The York Region Tree Planting Design Guide specifies certain parameters regarding trees being planted where overhead energized wires are present. In these locations, tree species whose mature form is relatively small should be selected. Planting trees that will grow to full size within 3.0 metres of overhead wires should be avoided.

Common Name	Scientific Name	Time	Native	General Comments
Hedge Maple	<i>Acer campestre</i>			compact form/trunk suckers require extra maintenance/ yellow fall colour
Amur Maple	<i>Acer ginnala</i>			compact form/red & yellow fall colour/lots of seeds/tends to sucker/specify single stem
Globe Maple	<i>Acer platanoides</i> 'globosum'			dense canopy, formal globe shape
Tatarian Maple	<i>Acer tataricum</i>			good red & yellow fall color/tends to sucker/lots of seeds
Purpleblow Maple	<i>Acer truncatum</i>		I	this species of maple has similar characteristics as <i>Acer platanoides</i> , yet this tree is smaller in size
European Alder	<i>Alnus glutinosa</i>	Sp		showy flower & fruit/tolerant of wet & dry soil/common to pure stands
Shadblow or Serviceberry	<i>Amelanchier canadensis</i>	Sp		difficult to maintain singlestem/4 season interest/tolerates moist soil
Globe Catalpa	<i>Catalpa bignonioides</i> 'Nanna'			tends to be messy
Sugar Hackberry	<i>Celtis laevigata</i>	Sp		compact form/good in moist soils
Hackberry	<i>Celtis occidentalis</i>	Sp		requires pruning for witches broom and general form/good substitute for Elms/good in container situations
Eastern Redbud	<i>Cercis canadensis</i>			good flower/shade/tolerant/ weak crotches
Flowering Dogwood	<i>Cornus florida</i>			good flower/specimen tree/red fall colour/source trees locally
Turkish Hazel	<i>Corylus colurna</i>	Sp		good form/difficult to transplant/winter interest
Hawthorns	<i>Crataegus</i> spp.	Sp		thornless & disease resistant varieties only. Do not plant near stands of apples or pears
Flowering & Domestic Apple	<i>Malus</i> (most)			good flowers/fruit usually maintenance problems/disease & insect problems/tolerates most soils
Weeping Mulberry	<i>Morus alba</i> 'Pendula'		I	adaptable to different environments, Invasive, small tree
Amur Cork Tree	<i>Phellodendron amurense</i>		I	lots of black berries
Purple Sand Cherry	<i>Prunus cistena</i>			recommended for street tree use/ nice white flowers and purple foliage
Bird Cherry	<i>Prunus padus</i>			highly susceptible to black knot disease/ also subject to insects/low maintenance
Shubert Cherry	<i>Prunus virginiana</i> 'Shubert'	Sp		green spring foliage & red in summer/black knot problems/ upright form/bark tends to split
Cherries	<i>Prunus</i> spp. 'Ornamental Cherry/ Columnar/ Sargent/ Kwanzan'	Sp		excellent flowers with no fruit/ single stem to be specified/ weeping cankers
Ornamental Pear	<i>Pyrus</i> 'Aristocrat/ Capital/ Chanticleer/ Redspire'	Sp		good flowers/may have good fall colour/lush shiny leaves/ Fireblight problems
European Mountain Ash	<i>Sorbus aucuparia</i>			small flower & orange fruit/ disease & insect problems/ weak bark/good in clay soils
Ivory Silk Liliac	<i>Syringa reticulata</i>			good white summer flower/ excellent small specimen
Mugo Pine	<i>Pinus mugo</i>			insect problems (pine shoot moth, mugho pine scale)/ slow growth/ this tree is expected to stay low and compact

Legend

-  species native to York
- I Invasive species not to be within 100 m of natural areas
- Sp Species which are sensitive to fall transplanting & should only be planted in the spring