



COHEN & MASTER

TREE AND SHRUB SERVICES

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TREE PRESERVATION PLAN AND ARBORIST REPORT

Prepared for North Design Office Inc.
9 Madison Avenue Toronto

FEBRUARY 6, 2018

COHEN AND MASTER TREE AND SHRUB SERVICES LTD.

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REPORT TYPE: ARBORIST REPORT AND TREE PRESERVATION PLAN FOR DEVELOPMENT

DATE OF INSPECTION: DECEMBER 18, 2017 AT 10:00AM

ADDRESS: 9 MADISON AVENUE. TORONTO. M5R 2S2

1.0 INTRODUCTION

An on-site inspection was initiated by a qualified arborist on December 18, 2017 for the purpose of creating a Tree Preservation Plan (TPP) and acquiring necessary permits and approvals for land development. All trees located within 6m of the subject development, whose diameter at breast height (DBH) are 30cm or larger were inventoried and assessed. Any species ranked as endangered, threatened or of special concern located on the subject lands were noted and inventoried. Site photos, a tree inventory, specifications for tree protection barriers, a proposed site plan with existing tree locations, and a replant plan are attached (Appendix I, II, III, IV, V & VI).

2.0 METHODOLOGY

- TREE MEASUREMENTS

All relevant trees were sized by measuring their trunk diameter at 1.4 meters above existing grade (diameter at breast height, or DBH) as per accepted arboricultural standards and Tree Protection Zones (TPZs) are recommended accordingly.

- TREE CONDITIONS

A generalized assessment system was employed to describe the overall condition of each inventoried tree. A five-level scale from "Very Good", "Good", "Fair", "Poor", and "Very Poor" was used to quantify the range of the tree's condition. "Very Good" condition was applied to a tree whose health, growth rate, and structural integrity was greater than eighty (80) percent of a perfect specimen. "Very Poor" was applied to a tree whose condition is less than twenty (20) percent of a perfect specimen.

- CATEGORIES (AS PER CITY OF TORONTO GUIDELINES)

1. Trees with diameters of 30cm or more, situated on private property or the subject site.
2. Trees with diameters of 30cm or more, situated on private property within 6m of the subject site.
3. Trees of all diameter situated on City owned parkland within 6m of the subject site.
4. On lands designated under City of Toronto Municipal Code, Chapter 658, Ravine and Natural Feature Protection: Trees of all diameters situated within 12m of any construction activities.
5. Trees of all diameters situated within the City road allowance adjacent to the subject site.

- OUTLINE OF RECOMMENDATIONS

REMOVE: Any tree in the footprint of proposed construction or any tree which will sustain significant injuries directly from the proposed structures or the subsequent movement/storage of materials. These injuries would be unavoidable and likely cause long-term health and structural defects.

PRESERVE WITH INJURY: Any situation where a full TPZ cannot be maintained but the tree will not sustain injuries severe enough to compromise long-term health and structural stability. This includes situations where the movement of machinery or storage of materials would require

disturbance within the TPZ. Measures to mitigate damage to the root zone and canopy (pruning, mulching, fertilizing, etc.) may be recommended.

PROTECT: A full tree protection barrier (based on the TPZ requirements) is constructed and remains unaltered throughout the duration of the construction.

- SPECIFICATIONS FOR TREE PROTECTION BARRIERS

It is necessary to protect all trees designated for preservation during both demolition and construction. This tree protection can be accomplished by installing tree protection barriers (TPBs). The minimum tree protection zone (TPZ) radius is based on the diameter of the tree ($TPZ \approx 0.06m/cm \times DBHcm$). TPZ radii in protected natural feature areas are to be twice as wide ($TPZr \approx 0.12m/cm \times DBHcm$) where feasible. Where the worksite is up-slope from ravine or protected natural feature areas, sediment control fences would be used. The tree protection barriers will be comprised of snow-fencing or 3/4in ply-wood mounted on 2"x4" wood frames in accordance with the City of Toronto document "Tree Protection Policy and Specifications for Construction Near Trees" (see Appendix V).

- REPLANT PLAN

Any private tree that is removed for the purpose of land development will require a replanting ratio of 3 replacement trees for each tree removed. City trees will require 1 replacement tree to be planted on city property. The trees would be transplanted as per Toronto Municipal Code Article III tree planting instructions and per the City's Planting Detail PD-101 for transplanting burlap or balled trees (Appendix IV). These trees must be 50-60mm in caliper and maintained in good condition. Supplemental watering may be required during the drier periods of the year, especially during the first two or three years after the transplant. In situations where poor site conditions (light, soil, space, etc.) make planting a new tree on the development property impossible, a cash in lieu option may be proposed.

3.0 PROPOSED CONSTRUCTION AND SITE DESCRIPTION

Cohen and Master Tree and Shrub Services Ltd. has been hired to provide a tree inventory and arborist report for the trees at 9 Madison Avenue for the purpose of land development.

The development includes:

- demolishing and removing the existing parking lot; and
- constructing a new building.

There are 5 privately owned trees (Tree #3, 4, 7, 8 & 9), 2 neighbour owned trees (Tree #5 & 6) and 2 city owned trees (Tree #1 & 2) that will be within 6m of the proposed development site.

- Tree #2 and #5 will be protected with no TPZ infringement.
- Tree #6 will be preserved with injury because a portion of the canopy will interfere with the proposed construction and will require pruning. The base of this tree is >6m from the property line and there will be no TPZ infringement.
- Tree #1, 3, 4, 7 and 9 are all in the footprint or at an unacceptable proximity to the proposed development and are being recommended for removal.

4.0 TREES TO BE PROTECTED

There is 1 neighbour owned tree and 1 city owned tree within the parameters of this report that will be protected with no infringement of the designated TPZs. All barriers will be installed in accordance with the City of Toronto document “Tree Protection Policy and Specifications for Construction Near Trees” (See Appendix V).

4.1 DESCRIPTION OF TREE PROTECTION BARRIERS (SEE APPENDIX III)

Tree #2 (city owned) will maintain a 1.8m tree protection barrier with no infringement on the north-west side of the property.

Tree #5 (neighbour owned) is 3m from the property line and does not require a barrier as its TPZ is entirely on the property of 478 Huron St. with the canopy leaning over the adjacent parking lot. The existing fence will remain intact and act as a tree protection barrier. If this is not possible, a tree protection barrier will be installed to protect the full TPZ (2.4m). There will be no construction or materials on the neighbouring property.

5.0 TREES TO BE PRESERVED WITH INJURY

There is 1 neighbour owned tree (Tree #6) at 478 Huron St. on north-east of the proposed development that will be designated as “Preserved with Injury”. While the base of the main stem is >6m from the development, the 63cm Siberian Elm will require injury because 1 limb (approximately 20cm in diameter) will interfere with the proposed development area. The existing fence will act as a tree protection barrier and remain intact throughout the duration of construction. If at any time the fence is removed, a tree protection barrier must be installed at the same distance from the tree and in accordance with the City of Toronto document “Tree Protection Policy and Specifications for Construction Near Trees”.

5.1 SIBERIAN ELM (TREE #6) ASSESSMENT

Tree #6 (neighbour owned) is being preserved with injury based on the proximity on the canopy to proposed construction. The 63cm (DBH) Siberian Elm has several defects and its overall condition is “Fair”.

These **defects** are as follows:

- Large failures
 - 6-9 limbs, 3-10cm in diameter
- Large deadwood
 - 8-10 limb, 5-15cm in diameter
- 20% of the total canopy is deadwood
- 15% of natural canopy previously failed

Injury mitigation measures that will be performed or approved by a qualified Arborist utilizing *Good Arboricultural Practices* as defined in Municipal Code 813-3 are as follows:

- ensure the existing fence remains intact and acts as a tree protection barrier or, if this is not possible, install a tree protection barrier to protect the full TPZ (4.8m) in accordance with the City of Toronto document “Tree Protection Policy and Specifications for Construction Near Trees”; and
- pruning 1 limb, approximately 20cm in diameter, on the south-west side of the tree will be required to provide at least 2m of clearance from the proposed structure and prevent damage to the remaining canopy.

6.0 TREES TO BE REMOVED

There are 6 trees that require removal to proceed with the proposed development. Trees #1, 3, 4, & 7-9 are in the footprint or would sustain an unacceptable level of injury due to their proximity to the proposed demolition and development.

6.1 SIBERIAN ELM (TREE #1) ASSESSMENT

Tree #1 (city owned) is being recommended for removal because it is in the footprint of proposed development and would not likely survive additional injury due to current lack of vigor. The 70cm (DBH) Siberian Elm has several defects and its overall condition is “Poor”.

These **defects** are as follows:

- Large failures
 - 6-9 limbs, 3-8cm in diameter
- Included bark from main union to grade
- Large wound with decay at base, from grade to 1.2m up the main stem
- Large wound with decay on significant limb (approx. 20cm in diameter)
 - Limb overhanging sidewalk and road
 - Wound is 1m long, 20% of the diameter of the limb, and on the tension side
- Large wound with decay on significant limb (approx. 25cm in diameter)
 - Wound is 3.5m long from the main union, 10% of the diameter of the limb, with borer holes and signs of insect activity present
- Cavities and decay on large limbs (25cm)
- hanging deadwood
 - 2 limbs, 1-3cm in diameter
- Large deadwood
 - 8-10 limb, 3-5cm in diameter
- 20% of the total canopy is deadwood
- 15% of natural canopy previously failed

6.2 TREE OF HEAVEN (TREE #3) ASSESSMENT

Tree #3 is being recommended for removal because it is in the footprint of the proposed building and would not likely survive additional injury due to current lack of vigor. The 44cm (DBH) Tree of Heaven has several defects and its overall condition is “Poor”.

These **defects** are as follows:

- Large failures
 - 7 limbs, 3-10cm in diameter
- Failed co-dominant stem (approx. 20cm in diameter)
- Cavity formation throughout the canopy
- Damage at the base
- Small root zone from lack of available soft scape
- 20% of the total canopy is deadwood
- 10% of natural canopy previously failed

6.3 TREE OF HEAVEN (TREE #4) ASSESSMENT

Tree #4 is being recommended for removal because it is in the footprint of the proposed building and would not likely survive additional injury due to current lack of vigor. The 32cm (DBH) Tree of Heaven has several defects and its overall condition is “Poor”.

These **defects** are as follows:

- Large failures
 - 10 limbs, 3-5cm in diameter
- Vertical crack on the main stem
 - 2m in length
- Cavity formation throughout the canopy
- Damage at the base
- Small root zone from lack of available soft scape
- 15% of the total canopy is deadwood
- 30% of natural canopy previously failed

6.4 SIBERIAN ELM (TREE #7) ASSESSMENT

Tree #7 is being recommended for removal because it is in the footprint of the proposed building and would not likely survive additional injury due to current lack of vigor. The 37cm (DBH) Siberian Elm has several defects and its overall condition is “Poor”.

These **defects** are as follows:

- Large failures
 - 3-6 limbs, 5-8cm in diameter
- Severe lean to the south west
- Irregular root flare
- Water-sprouting at the base
- Hanging deadwood
- 2 limbs, 1-3cm in diameter
- Large deadwood
 - 8-10 limbs, (3-8cm)
- 30% of the total canopy is deadwood
- 15% of natural canopy previously failed

6.5 SIBERIAN ELM (TREE #8) ASSESSMENT

Tree #8 is being recommended for removal because it is in the footprint of the proposed building and would not likely survive additional injury due to current lack of vigor. The 42cm (DBH) Siberian Elm has several defects and its overall condition is “Very Poor”.

These **defects** are as follows:

- Large failures
 - 5-8 limbs, 1-3cm in diameter
- Severe lean to the north
- Cavities containing decay on the main stem
 - 3 significant
 - fruiting bodies present
- Irregular root flare

- Water-sprouting throughout the canopy
- Hanging deadwood
- 2 limbs, 1-3cm in diameter
- Large deadwood
 - 6-8 limbs, (3-5cm)
- 15% of the total canopy is deadwood
- 10% of natural canopy previously failed

6.6 SIBERIAN ELM (TREE #9) ASSESSMENT

Tree #9 is being recommended for removal because it is in the footprint of the proposed building and would not likely survive additional injury due to current lack of vigor. The 67cm (DBH) Siberian Elm has several defects and its overall condition is “Poor”.

These **defects** are as follows:

- Large failures
 - 10-12 limbs, 3-10cm in diameter
- Included bark and a vertical crack from main union to grade
 - 2.5m in length
- Large wound with decay at base
- Large deadwood
 - 8-10 limb, 3-8cm in diameter
- 15% of the total canopy is deadwood
- 20% of natural canopy previously failed

7.0 REPLANT PLAN

Fifteen trees will be required to replace the 5 privately owned trees being proposed for removal and 1 tree will be planted on city property to replace the city owned tree. Subject to approval, the recommendation is that 6 trees are planted in Paul Martel Park and 1 Red Oak is planted in front of 11 Madison Avenue. Cash-in-lieu of planting be considered for the remaining 9. There is insufficient softscape to allow for city approved trees to be planted on the subject property, however 17 River Birch will be planted in raised beds in the proposed courtyard. Please see attached inventory (Appendix II) and Replant Plan (Appendix VI) for locations, species, and sizes of the replacement trees.

8.0 CONCLUSIONS

To allow for the proposed construction at 9 Madison Avenue., Toronto, 5 privately owned trees (Tree # 3, 4 & 7-9) and 1 city owned tree (Tree #1) will require removal because they are all in the footprint or in unacceptable proximity to the proposed development. Tree #2 and Tree #5 will be protected with no TPZ infringement and the remaining Elm (Tree #6) will be “Preserved with Injury” with no infringement past the existing fence-line. Additional mitigation measures such as, canopy pruning will be applied. Upon approval by the City of Toronto, 6 trees will be planted in the nearby park, 1 tree will be planted at 11 Madison, while cash-in-lieu of planting is being proposed for the remaining 9.

APPENDIX I: SITE PHOTOS

FIGURE 1: TREE #1-2



FIGURE 2: TREE #1



FIGURE 3: TREE #1 CANOPY



FIGURE 4: TREE #1 CANOPY



FIGURE 5: TREE #2 CANOPY



FIGURE 6: TREE #2 MAIN STEM



FIGURE 7: TREE #3-5



FIGURE 8: TREE #3 CANOPY



FIGURE 9: TREE #3 MAIN STEM



FIGURE 10: TREE #4 MAIN STEM



FIGURE 11: TREE #4 CANOPY



FIGURE 12: TREE #6 LIMB TO REMOVE



FIGURE 13: TREE #5-6 MAIN STEMS



FIGURE 14: TREE #5-6 CANOPY



FIGURE 15: TREE #7



FIGURE 16: TREE #7 CANOPY



FIGURE 17: TREE #7-8



FIGURE 18: TREE #8 CANOPY



FIGURE 19: TREE #8 MAIN STEM



FIGURE 20: TREE #9



FIGURE 21: TREE #9 CANOPY



FIGURE 22: TREE #9 MAIN STEM



FIGURE 23: TREE #3



Appendix II: Tree Inventory

Site: 9 Madison Avenue, Toronto
 Date of inspection: December 18, 2017
 Date of Report: February 5, 2018



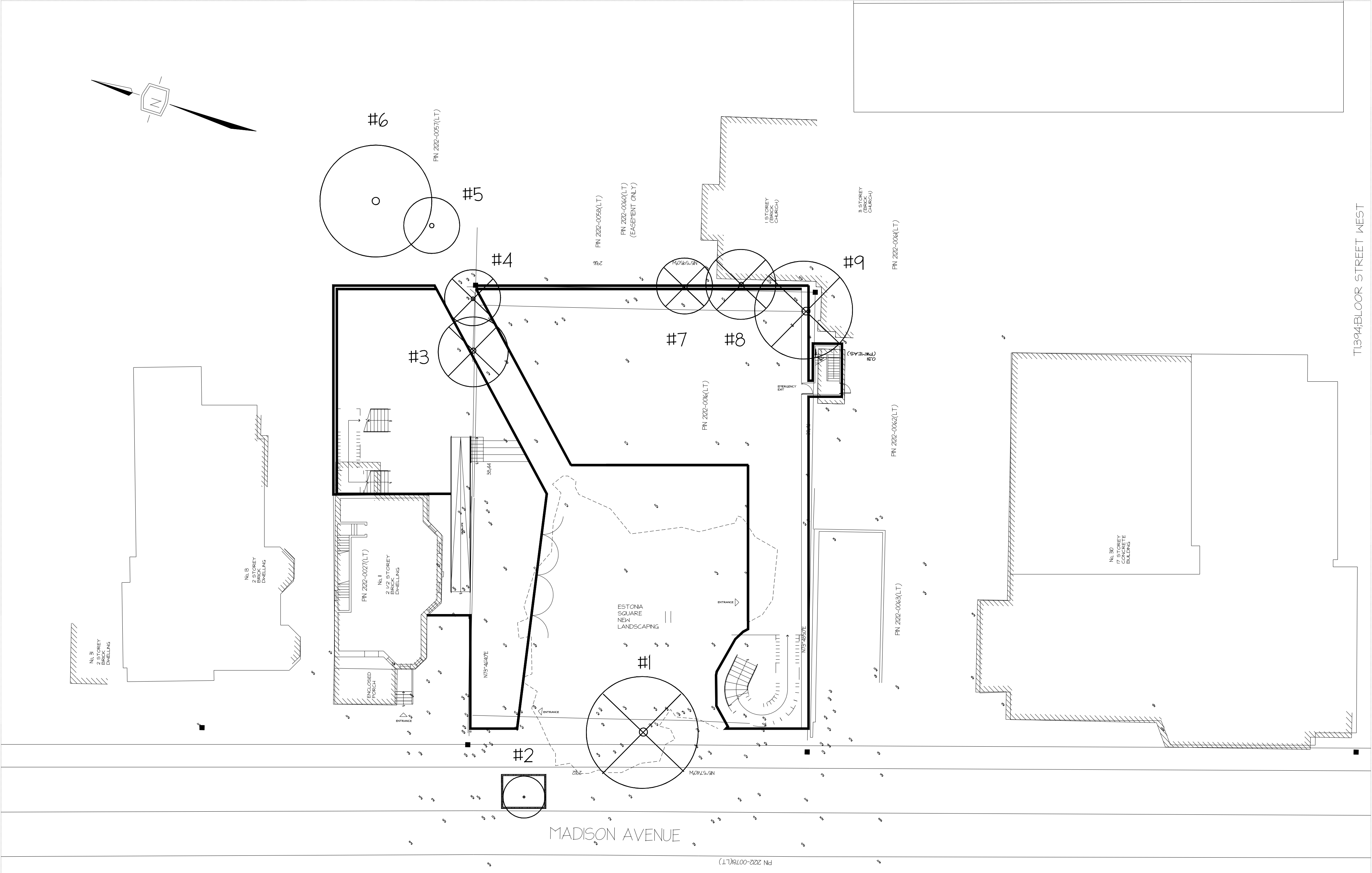
Tree #	Species	Common Name	DBH (cm)	Category	Condition	Comments on Condition	TPZ (m)	Recommendation	Rationale	Injury Mitigation
1	<i>Ulmus pumila</i>	Siberian Elm	70	5	Poor	lg failures, included bark from union to grade, decay at base, cavities and decay on lg limbs (25cm), hanging deadwood, lg deadwood (3-5cm), 20% total deadwood, 15% of natural canopy failed	4.8	Removal	Poor condition, proximity to proposed development	N/A
2	<i>Gleditsia triacanthos 'Skyline'</i>	Honey Locust	16	5	Fair	co-dominant stems with included bark, lean to west, irregular root flare, mechanical damage on the lower limbs, imbalanced canopy from utility wire clearance	1.8	Protect	Maintain full TPZ protection	N/A
3	<i>Ailanthus altissima</i>	Tree of Heaven	44	1	Poor	damage at the base, lg failures, failed co-dominant stem (20cm), cavity formation throughout, limited softscape, 20% total deadwood, 10% of natural canopy failed	3	Removal	Poor condition, in footprint of the proposed structure	N/A
4	<i>Ailanthus altissima</i>	Tree of Heaven	32	1	Poor	damage at the base, lg failures, lg deadwood (3-5cm), cavity formation throughout, limited softscape, vertical crack on the main stem (2m), 15% total deadwood, 30% of natural canopy failed	2.4	Removal	Poor condition, in footprint of the proposed structure	N/A
5	<i>Ulmus pumila</i>	Siberian Elm	38	2	Poor	lean to the south-west, lg failures, lg deadwood (3-5cm), bacteria wetwood, 20% total deadwood, 10% of natural canopy failed	2.4	Protect	Poor condition, in footprint of the proposed structure	
6	<i>Ulmus pumila</i>	Siberian Elm	63	2	Fair	lg failures, lg deadwood (5-15cm), 20% total deadwood, 15% of natural canopy failed	4.8	Injury	>6m from construction, limb will interfere with proposed structure	Limb pruning the provide adequate clearance from construction, 1 limb 20cm in diameter mostly deadwood (figure __)
7	<i>Ulmus pumila</i>	Siberian Elm	37	1	Poor	lg failures, lg deadwood (3-8cm), severe lean, irregular root flare, hanging deadwood, water-sprouting at the base, 30% total deadwood, 10% of natural canopy failed	2.4	Removal	Poor condition, in footprint of the proposed structure	N/A
8	<i>Ulmus pumila</i>	Siberian Elm	42	1	Very Poor	lean to the north, cavities with decay on the main stem, fruiting bodies on the main stem, lg failures, lg deadwood (3-5cm), hanging deadwood (1-3cm), 15% total deadwood, 10% of natural canopy failed	3	Removal	Poor condition, in footprint of the proposed structure	N/A
9	<i>Ulmus pumila</i>	Siberian Elm	67	1	Poor	wound with decay at the base, vertical crack from grade to main union (2.5m long), lg failures, lg deadwood (3-8cm), 15% total deadwood, 10% of natural canopy failed	4.2	Removal	Poor condition, in footprint of the proposed structure	N/A

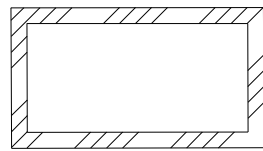
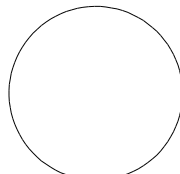
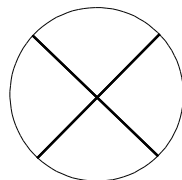
Replant Plan: Refer to Appendix VI for locations

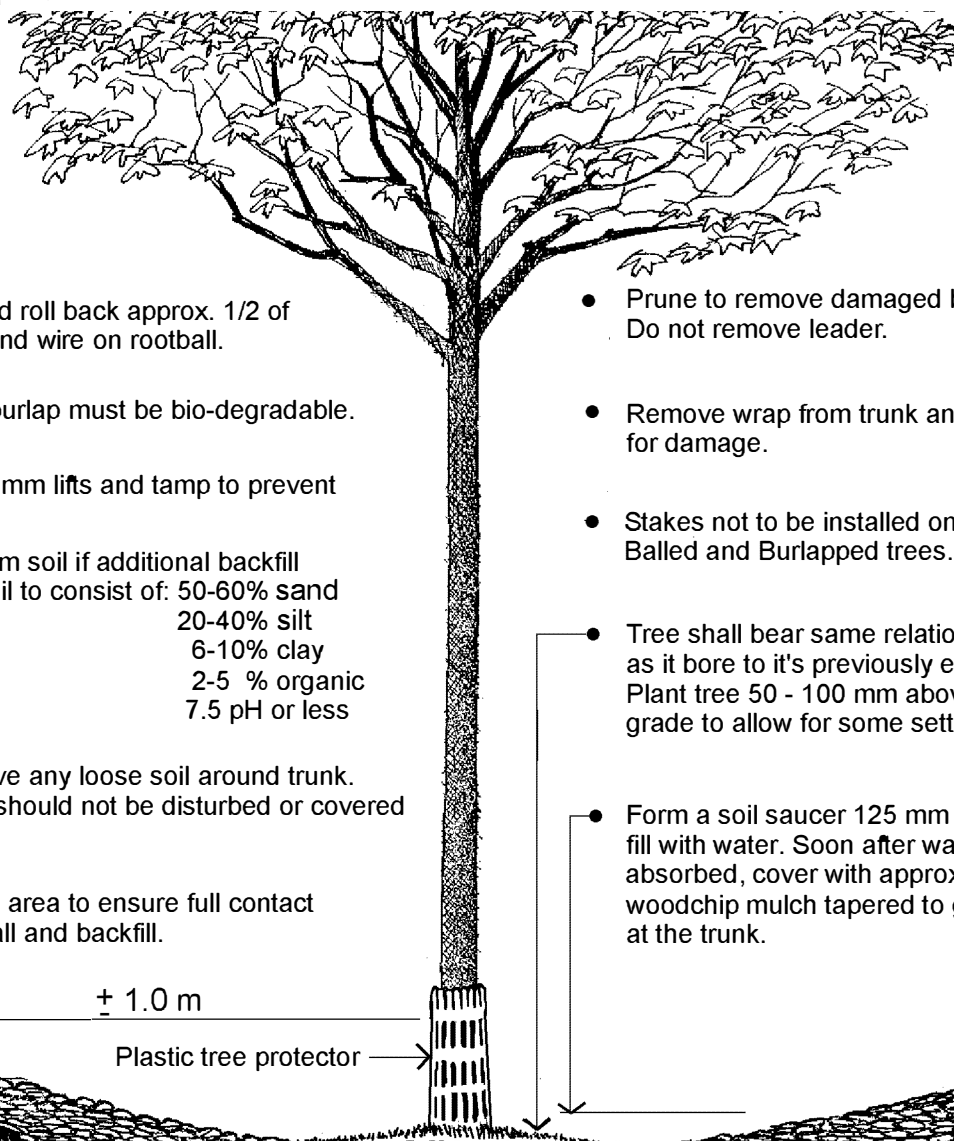
Tree #	Species	Common Name	Size (mm)
1	<i>Ulmus americana "Valley Forge"</i>	Valley Forge Elm	50
2	<i>Ulmus americana "Valley Forge"</i>	Valley Forge Elm	50
3	<i>Gleditsia triacanthos 'skyline'</i>	Skyline Honey Locust	50
4	<i>Gleditsia triacanthos 'skyline'</i>	Skyline Honey Locust	50
5	<i>Catalpa speciosa</i>	Northern Catalpa	50
6	<i>Ginkgo biloba</i>	Ginkgo	50
7	<i>Quercus rubra</i>	Red Oak	50

Summary

Total Trees on Subject Site	9
Total Trees to Remove	6
Total Tree to Protect	2
Total Trees to Injure	1
Total Trees in Naturalize/Ravine Area	0
Required for Replant	16
Total Recommended for Replant	6
Total for Cash in lieu of Planting	10
Percentage of Total Canopy to Remove	67%



Legend Tree Protection Barrier Tree Protection Zone Trees to Remove		Title Appendix III: Tree Preservation Plan	Notes Tree numbers and tree protection parameters were prepared by Cohen and Master Tree and Shrub Services LTD. All other information was provided on the survey provided by the client. This plan is to be read in conjunction with the Arborist Report prepared by Cohen and Master Tree and Shrub Services LTD. dated February 6, 2018	Prepared by Rachael Kowaleski	
		Prepared for Peter North			
		Prepared on February 6, 2018			
		Scale 1:200 (18 x 24)			
		Site 9 Madison Avenue. Toronto, M5R 2S2			



- Cut, loosen and roll back approx. 1/2 of twine, burlap and wire on rootball.
- All twine and burlap must be bio-degradable.
- Backfill in 150 mm lifts and tamp to prevent air pockets.
- Add sandy loam soil if additional backfill is required. Soil to consist of: 50-60% sand
20-40% silt
6-10% clay
2-5 % organic
7.5 pH or less
- Carefully remove any loose soil around trunk. Top of rootball should not be disturbed or covered with soil.
- Soak backfilled area to ensure full contact between rootball and backfill.

- Prune to remove damaged branches. Do not remove leader.
- Remove wrap from trunk and inspect for damage.
- Stakes not to be installed on Balled and Burlapped trees.
- Tree shall bear same relation to grade as it bore to it's previously existing grade. Plant tree 50 - 100 mm above desired grade to allow for some settling.
- Form a soil saucer 125 mm in depth and fill with water. Soon after water has been absorbed, cover with approx. 100 mm of woodchip mulch tapered to ground level at the trunk.

± 1.0 m

Plastic tree protector

± 45°

Loosen surface soil of planting hole.

Place rootball on undisturbed soil.

Planting Detail for Balled and Burlapped Trees in Turf



Urban Forestry Services

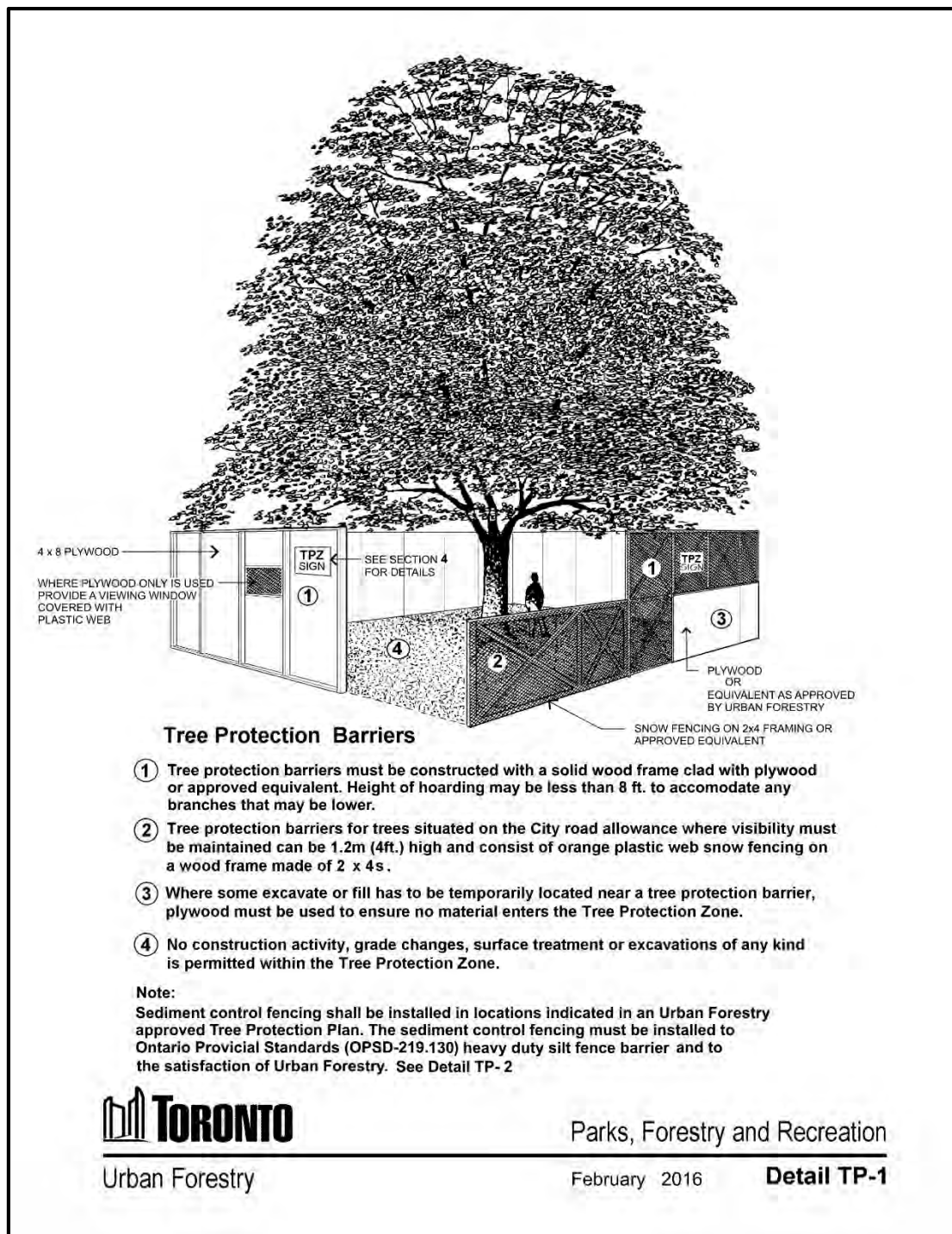
Parks and Recreation Division

June 2002

Detail PD -101

Appendix V: Tree Protection Barrier Specifications

The following diagrams provide details for tree protection barriers and sediment protection barriers:



Urban Forestry Detail TP-1

Appendix VI: Replant Plan

Refer to Appendix II for species and size details

