
Appendix E:

Arborist Report

Section E.1:

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ARBORIST REPORT

Waterfront East LRT – Queens Quay East
Toronto, Ontario

February 28, 2022

Prepared for:

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NB: This Arborist Report has been prepared using the latest drawings and information provided by the client and/or agents and may be intended for inclusion in a site plan approval or similar planning submission. Any subsequent design or site plan changes affecting trees may require revisions to this report. New drawings and information should be provided to UFI prior to report submission to municipal planning authorities.

Links (URLs) provided to web-based resources are current to the date of the report.

EXECUTIVE SUMMARY

Urban Forest Innovations Inc. (UFI) has been retained by DTAH to prepare an arborist report for the proposed Waterfront East LRT development application on Queens Quay East in Toronto, Ontario. The purpose of the arborist report is to document existing tree and site conditions, to evaluate anticipated impacts to site trees which may occur as a result of the proposed development, and to identify required and recommended tree protection measures and regulatory requirements associated with the proposed development.

In total, 235 trees are addressed in this report. Proposed tree removals and injuries requiring permit approval are summarized in Table 1, below. Based upon the results of the present assessment, it has been determined that 42 trees may be retained and 117 trees will require removal. The recommendations for 76 additional trees will be determined upon the receipt of finalized plans. The proposed works will require the implementation of specific tree protection measures to ensure effective tree retention, including tree protection fencing, root-sensitive excavation and root pruning, and arborist site supervision.

Table 1: Summary of regulated tree actions associated with the Waterfront East LRT project, Toronto, ON.

Proposed Action	Municipal Trees	Subtotal	Private Regulated Trees	Subtotal	Total
Injure	#56, 58, 62, 201	4	-	0	4
Remove (Development)	#19-22, 28-47, 59-61, 63-66, 68-71, 89, 90, 94-97, 100-107, 113-133, 209- 225, 232	88	#15, 18, 108-112, 235	8	96
Remove (Condition)	#50, 51	2	-	0	2

INTRODUCTION

Urban Forest Innovations Inc. has been requested by DTAH to prepare an arborist report for the proposed Waterfront East LRT development on Queens Quay East in Toronto, Ontario. The proposed site works include the following activities:

- Demolition of existing landscaping and infrastructure along the roadway.
- Construction of an aboveground LRT line.
- Installation of related servicing, amenities, and landscaping.

This arborist report reviews the potential impacts of the proposed works upon 235 trees within or close to the limits of disturbance, and outlines required and recommended tree protection measures and regulatory requirements associated with the proposed development. General tree maintenance recommendations are also provided where appropriate. The report should be read in conjunction with all other servicing, grading and landscaping plans prepared for the project.

SITE OBSERVATIONS

Field observations were made on December 23 and 28, 2021, by Anna Mernieks, ISA Certified Arborist ON-2224A. There was no construction activity on the site at the time of the field observations. Trees within 6 metres of the potential limits of disturbance are included in the inventory. Trees were located using the latest site drawings and information provided by the client; trees for which no surveyed locations were provided were positioned approximately with the aid of field reference markers. Tree diameter was measured at 1.4 metres above grade (DBH) and trees were assessed for health, structural condition, and risk potential. Tree groups were identified where appropriate. All trees were assessed from the ground level. No trees were tagged as part of the inventory. A full explanation of tree assessment categories is included in Appendix 2 – Tree Inventory Attributes.

RESULTS AND DISCUSSION

This section of the report outlines the key issues related to the proposed works from an arboricultural and tree preservation perspective. Specific recommendations regarding tree protection are outlined. General recommendations are also provided in Appendix 5.

By-laws and Legislation

By-laws and legislation enacted by the City of Toronto, the Toronto Region Conservation Authority, and/or the Province of Ontario regulate the injury or destruction of trees depending upon their location, size and other factors.

City of Toronto – Private Trees (Category 1 and 2)

14 inventoried trees (#3, 15, 18, 108-112, 173, 177, 226, 228, 229, and 235) are regulated pursuant to the City of Toronto private tree by-law, officially known as City of Toronto Municipal Code, Chapter 813, Article III – ‘Private Tree Protection’. This by-law regulates the injury and destruction of all trees equal to or greater than 30 cm diameter at breast height (DBH, or 1.4 m above grade) located on private property.

City of Toronto – Park Trees (Category 3)

30 inventoried trees (#52-58, 91-93, 96-101, 162-166, 203-207, 230, 231, 233, and 234) are regulated pursuant to the City of Toronto parks by-law, officially known as City of Toronto Municipal Code Chapter 608 – ‘Parks’, and specifically pursuant to Article VII – ‘Trees’. This by-law regulates injury or destruction of any trees located within municipal parks.

City of Toronto – Ravine Trees (Category 4)

No inventoried trees are regulated pursuant to the City of Toronto ravine and natural feature protection (RNFP) by-law, officially known as City of Toronto Municipal Code Chapter 658 – ‘Ravine and Natural Feature Protection.’ This by-law regulates a number of activities within specially-designated areas, including injury or destruction of trees of *any* diameter.

City of Toronto – Street Trees (Category 5)

159 inventoried trees (#19-51, 59-66, 68-90, 94, 95, 102-107, 113-161, 167-172, 178-189, 201, 208-225, and 232) are regulated pursuant to the City of Toronto street tree by-law, officially known as City of Toronto Municipal Code, Chapter 813, Article II – ‘Trees on City Streets’. This by-law regulates injury and destruction of all trees within the municipal road right-of-way.

City of Toronto – Unregulated Trees

32 inventoried trees (#1, 2, 4-14, 16, 17, 67, 174-176, 191-200, 202, and 227) are not regulated pursuant to any municipal tree protection by-laws.

Toronto Region Conservation Authority – Ontario Regulation 166/06

Pursuant to *Ontario Regulation 166/06*, the injury or destruction of any tree located within areas regulated by Toronto Region Conservation Authority (TRCA) may require review and permit approval from TRCA.

41 trees (#1-18, 63-66, 108-112, 190-200, 233-235) are located within lands regulated by Toronto Region Conservation Authority.

More information about *Ontario Regulation 166/06* can be found online at:

<https://trcaca.s3.ca-central-1.amazonaws.com/app/uploads/2016/02/17185355/OntarioRegulation166-06.pdf>

Boundary Trees – Ontario Forestry Act, R.S.O. 1990

The Provincial *Forestry Act, R.S.O. 1990* states:

10. (2) Every tree whose trunk is growing on the boundary between adjoining lands is the common property of the owners of the adjoining lands. 1998, c. 18, Sched. I, s. 21.

(3) Every person who injures or destroys a tree growing on the boundary between adjoining lands without the consent of the land owners is guilty of an offence under this Act. 1998, c. 18, Sched. I, s. 21.

5 inventoried trees (#190-194) appear to be growing on the boundary between the subject site and the adjacent properties.

Endangered, Rare or Protected Species – Endangered Species Act, 2007

The Provincial *Endangered Species Act, 2007* (ESA) provides for the conservation of endangered or threatened species in Ontario. The ESA identifies Species at Risk (SAR) based on the best available scientific information, protects SAR and their habitats, promotes the recovery of species that are at risk, and promotes stewardship activities to assist in the protection and recovery of SAR.

No endangered, rare or otherwise protected tree species were observed within the limits of proposed works.

Tree Removal

Tree removal will be necessary to facilitate the proposed works. Recommendations for tree removal are based upon consideration of the anticipated impacts upon trees due to implementation of the proposed works, the immediate and forecasted health and structural condition of the tree, and the ability of the tree to make continued contributions to the newly modified landscape.

Project Works

The proposed works will require the removal of 117 trees:

- 8 by-law regulated, privately-owned trees: #15, 18, 108, 109, 110, 111, 112, and 235
- 4 by-law regulated, City-owned park trees: #96, 97, 100, 101
- 84 by-law regulated, City-owned street trees: #19, 20, 21, 22, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 47, 59, 60, 61, 63, 64, 65, 66, 68, 69, 70, 71, 89, 90, 94, 95, 102, 103, 104, 105, 106, 107, 113, 114, 115, 116, 117, 118, 119, 120, 121, 122, 123, 124, 125, 126, 127, 128, 129, 130, 131, 132, 133, 209, 210, 211, 212, 213, 214, 215, 216, 217, 218, 219, 220, 221, 222, 223, 224, 225, 232
- 19 unregulated, privately-owned trees: #4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 16, 17, 195, 196, 197, 198, 199, 200

Condition

Two inventoried trees are recommended for removal for reasons unrelated to the proposed works:

- Trees #50 and 51, two (6, 7 cm diameters) poplar species (*Populus* sp.), located on City property, was assessed as standing dead at the time of field observations. The trees should be inspected by City of Toronto forestry staff for recommended removal prior to the commencement of site works.

Tree Retention

All other trees addressed in this report are proposed for retention. This section outlines specific tree preservation and protection measures for retained trees. General tree protection recommendations and specifications are found in Appendix 5.

All trees to be retained within or adjacent to the limits of project works are designated for Preservation, Protection, or Injury.

Tree Preservation

No specific tree protection measures are recommended for 5 trees (#2, 3, 24, 25, and 26), which are located beyond anticipated construction limits and/or are protected by existing landscape features.

Tree Protection

Retained trees in proximity to the proposed works shall be protected by restricting access and land use within tree protection zones (TPZs), as through the installation of tree preservation fencing (or hoarding) that satisfies the minimum required distance (TPZ) for each tree, where possible. Minimum required TPZ distances are specified in Appendix 1, and recommended fencing configurations are illustrated in Appendix 4. Fencing is to be established in advance of all proposed works, including but not limited to material and equipment delivery, staging and storage, demolitions, excavation and grading work, and new construction activity.

Specifications for the establishment of protection fencing and signage are outlined further in Appendix 5 – Section 5.2.1.1.

Tree Injury

During site works, retained trees may undergo injury, which is understood to be the encroachment of established tree protection zones (TPZs), regardless of the extent of actual physical damage sustained by the retained tree.

In addition to tree protection fencing, trees designated for injury at Queens Quay East require the implementation of the following supplemental tree protection measures:

- **Tree-Sensitive Demolition** – The tree protection zones of 5 inventoried trees (#56, 58, 62, 201, and 202) will be impacted by the demolition of the existing hardscapes, resulting in injury to by-law regulated trees #56, 58, 62, and 201. In order to minimize root zone disturbance, demolition of the hardscapes must be undertaken in a tree-sensitive manner within the TPZs of the above-listed trees. All works within TPZs should be supervised by a Certified Arborist to ensure potential root disturbance is minimized, and to enable timely root pruning if required to prevent root damage. Specifications for tree-sensitive demolition are outlined in Appendix 5 – Section 5.2.1.3.
- **Root-Sensitive Excavation and Root Pruning** – The tree protection zones of 5 inventoried trees (#56, 58, 62, 201, and 202) will be impacted by excavation to enable the proposed works, resulting in injury to by-law regulated trees #56, 58, 62, and 201. All excavation within TPZs shall be accomplished by root-sensitive excavation utilizing hand-digging, hydrovac or pneumatic soil excavation (e.g., Airspade). Excavations must be supervised by a Certified Arborist, who must be enabled to stop works if, during the course of excavation, significant structural or transport roots (greater than approximately 25mm diameter) are encountered, in order to properly prune the roots. Specifications for root-sensitive excavation and root pruning are outlined in Appendix 5 – Sections 5.2.1.4 and 5.2.1.5.

Tree Risk and Required Tree Maintenance

At the time of inspection, there were no immediate risks posed by any trees within the project limits.

By-law and Permit Requirements

A City of Toronto 'Application to Injure or Destroy Trees' must be filled out detailing the proposed injury or removal of 100 regulated trees (Table 2).

Table 2: Bylaw regulated trees proposed for removal or injury.

Tree Number	Diameter (cm)	Remove/Injure	City/Private/Boundary/Neighbour
15	30, 15, 15	Remove	Private/Neighbour
18	40	Remove	Private/Neighbour
19	10, 5, 5	Remove	City
20	15, 15	Remove	City
21	15, 5	Remove	City
22	33	Remove	City
28	11	Remove	City
29	12	Remove	City
30	8	Remove	City
31	7	Remove	City
32	7	Remove	City
33	8	Remove	City
34	7	Remove	City
35	8	Remove	City

Tree Number	Diameter (cm)	Remove/Injure	City/Private/Boundary/Neighbour
36	10	Remove	City
37	7	Remove	City
38	6	Remove	City
39	9	Remove	City
40	7	Remove	City
41	8	Remove	City
42	9	Remove	City
43	11	Remove	City
44	8	Remove	City
45	11	Remove	City
46	13	Remove	City
47	12	Remove	City
56	26	Injure	City
58	17	Injure	City
59	22	Remove	City
60	30	Remove	City
61	33	Remove	City
62	11	Injure	City
63	9	Remove	City
64	7	Remove	City
65	11	Remove	City
66	12	Remove	City
68	8	Remove	City
69	7	Remove	City
70	7	Remove	City
71	7	Remove	City
89	7	Remove	City
90	39	Remove	City
94	8	Remove	City
95	8	Remove	City
96	10	Remove	City
97	9	Remove	City
100	10	Remove	City
101	10	Remove	City
102	6	Remove	City
103	7	Remove	City
104	7	Remove	City
105	6	Remove	City
106	7	Remove	City
107	7	Remove	City
108	39	Remove	Private/Neighbour
109	47	Remove	Private/Neighbour

Tree Number	Diameter (cm)	Remove/Injure	City/Private/Boundary/Neighbour
110	35	Remove	Private/Neighbour
111	40	Remove	Private/Neighbour
112	35	Remove	Private/Neighbour
113	8	Remove	City
114	8	Remove	City
115	7	Remove	City
116	7	Remove	City
117	7	Remove	City
118	6	Remove	City
119	6	Remove	City
120	6	Remove	City
121	6	Remove	City
122	6	Remove	City
123	6	Remove	City
124	6	Remove	City
125	6	Remove	City
126	6	Remove	City
127	6	Remove	City
128	2	Remove	City
129	2	Remove	City
130	9	Remove	City
131	15	Remove	City
132	7	Remove	City
133	7	Remove	City
201	7	Injure	City
209	28	Remove*	City
210	23	Remove*	City
211	21	Remove*	City
212	27	Remove*	City
213	23	Remove*	City
214	23	Remove*	City
215	23	Remove	City
216	21	Remove	City
217	24	Remove	City
218	23	Remove	City
219	25	Remove	City
220	21	Remove	City
221	25	Remove	City
222	26	Remove	City
223	23	Remove	City
224	26	Remove	City
225	31	Remove	City

Tree Number	Diameter (cm)	Remove/Injure	City/Private/Boundary/Neighbour
232	15, 15, 15	Remove	City
235	45	Remove	Private/Neighbour

*Trees #209-214 will be removed by others before the commencement of site works.

Permit applications must be submitted and approved prior to commencement of site works.

An 'Application to Injure or Destroy Trees' form and instructions for permit application submissions can be found online at:

[http://wx.toronto.ca/inter/clerks/fit.nsf/0/b8c764c03d39912c852584d500725c4f/\\$File/Application%2Bto%2BInjure%2Bor%2BDestroy%2BTrees%2BJan%2B2020%2B.pdf](http://wx.toronto.ca/inter/clerks/fit.nsf/0/b8c764c03d39912c852584d500725c4f/$File/Application%2Bto%2BInjure%2Bor%2BDestroy%2BTrees%2BJan%2B2020%2B.pdf)

Compensation Planting

The approval of a permit to injure or destroy trees may be subject to the planting of replacement trees or payment of equivalent cash-in-lieu, which is currently valued at \$583 per tree. The final compensation planting ratios or value of cash-in-lieu payments will be determined by the City of Toronto upon review of this report and associated project plans.

Toronto Region Conservation Authority – Ontario Regulation 166/06

Pursuant to *Ontario Regulation 166/06*, 31 tree removals may require permit approval from TRCA. A 'Permit Application for Development, Interference with Wetlands and Alterations to Shorelines and Watercourses can be found online at:

<https://trcaca.s3.ca-central-1.amazonaws.com/app/uploads/2021/10/08115745/4048-Permit-Application-for-DPP-Sept2021-fillable.pdf>

CONCLUSION

There are 235 trees associated with the proposed Waterfront East LRT development on Queens Quay East in Toronto, Ontario. The proposed works will require the implementation of specific tree protection measures to ensure effective tree preservation. 96 by-law regulated trees will require removal and 4 by-law regulated trees will require injury to enable the proposed works. The removal of 2 by-law regulated trees is recommended due to poor condition. Recommendations for 68 by-law regulated trees will be determined upon the receipt of finalized plans. A 'Permit to Injure or Destroy Trees' from the City of Toronto and permission from the TRCA will likely be required to enable the proposed removals and injuries.

With the implementation of the recommendations provided in this report, no significant adverse effects are anticipated as a result of the proposed works upon the long-term health and condition of inventoried trees that have been designated for retention. It is important that good arboricultural practices be undertaken during the entire course of construction. No material storage or construction access shall take place within tree protection zones (TPZs); sensitive excavation and root pruning shall be undertaken, as required; and any necessary branch and/or root pruning shall be undertaken by an ISA Certified Arborist.

APPENDIX 1 – TREE INVENTORY

Table 3: Tree inventory, Waterfront East LRT – Queens Quay East, Toronto, Ontario. Tree assessments are based upon field observations undertaken on December 23 and 28, 2021, by Anna Mernieks, ISA Certified Arborist ON-2224A. Attribute definitions are provided in Appendix 2.

Tree	Common Name	Scientific Name	DBH	CW	TI	CS	CV	TPZ	Cat.	Loc.	Rec.	Comments	TAG
1	Honey Locust	<i>Gleditsia triacanthos</i>	28	8	G	G	G	1.8	-	S/N	P	TRCA	
2	Siberian Elm	<i>Ulmus pumila</i>	17, 13, 12	6	G	F	G	1.8	-	S/N	-	TRCA	
3	Siberian Elm	<i>Ulmus pumila</i>	46, 12	12	G	G	G	3.0	1	S/N	-	TRCA	
4	Tree-of-heaven	<i>Ailanthus altissima</i>	20, 15, 10	5	F	F	G	1.8	-	S/N	R	DBH estimated; TRCA	
5	Tree-of-heaven	<i>Ailanthus altissima</i>	12, 10	5	F	F	G	1.8	-	S/N	R	TRCA	
6	Tree-of-heaven	<i>Ailanthus altissima</i>	20	5	G	G	G	1.8	-	S/N	R	DBH estimated; TRCA	
7	Tree-of-heaven	<i>Ailanthus altissima</i>	10, 10	6	F	F	G	1.8	-	S/N	R	TRCA	
8	Tree-of-heaven	<i>Ailanthus altissima</i>	15	5	G	G	G	1.8	-	S/N	R	TRCA	
9	Tree-of-heaven	<i>Ailanthus altissima</i>	25, 20, 15	5	F	F	G	1.8	-	S/N	R	DBH estimated; growing in fence; TRCA	
10	Tree-of-heaven	<i>Ailanthus altissima</i>	15	3	G	G	G	1.8	-	S/N	R	DBH estimated; TRCA	
11	Tree-of-heaven	<i>Ailanthus altissima</i>	15, 15	5	G	F	G	1.8	-	S/N	R	DBH estimated; TRCA	
12	Tree-of-heaven	<i>Ailanthus altissima</i>	11	3	F	F	G	1.8	-	S/N	R	TRCA	
13	Tree-of-heaven	<i>Ailanthus altissima</i>	10, 5	3	G	F	G	1.8	-	S/N	R	DBH estimated; TRCA	
14	Tree-of-heaven	<i>Ailanthus altissima</i>	15	5	G	G	G	1.8	-	S/N	R	DBH estimated; TRCA	
15	Manitoba Maple	<i>Acer negundo</i>	30, 15, 15	8	F	F	G	2.4	1	S/N	R	TRCA	
16	Manitoba Maple	<i>Acer negundo</i>	20	5	G	G	G	1.8	-	S/N	R	DBH estimated; TRCA	
17	Siberian Elm	<i>Ulmus pumila</i>	28, 12, 8	5	G	F	G	1.8	-	S/N	R	TRCA	
18	Siberian Elm	<i>Ulmus pumila</i>	40	5	G	F	-	2.4	1	S/N	R	DBH estimated at 1.0 m; TRCA	
19	Siberian Elm	<i>Ulmus pumila</i>	10, 5, 5	5	F	F	G	1.8	5	M	R	DBH estimated.	
20	Siberian Elm	<i>Ulmus pumila</i>	15, 15	6	F	F	G	1.8	5	M	R	DBH estimated.	
21	Tree-of-heaven	<i>Ailanthus altissima</i>	15, 5	5	G	F	G	1.8	5	M	R		
22	Honey Locust	<i>Gleditsia triacanthos</i>	33	8	G	G	G	2.4	5	M	R		
23	Honey Locust	<i>Gleditsia triacanthos</i>	5	3	G	G	G	1.2	5	M	P	DBH estimated.	
24	Honey Locust	<i>Gleditsia triacanthos</i>	5	3	G	G	G	1.2	5	M	-	DBH estimated.	
25	Honey Locust	<i>Gleditsia triacanthos</i>	5	3	G	G	G	1.2	5	M	-	DBH estimated.	
26	Honey Locust	<i>Gleditsia triacanthos</i>	5	3	G	G	G	1.2	5	M	-		
27	Honey Locust	<i>Gleditsia triacanthos</i>	6, 1	3	G	G	G	1.2	5	M	P		
28	Quaking Aspen	<i>Populus tremuloides</i>	11	5	G	G	G	1.8	5	M	R		
29	Poplar Species	<i>Populus</i> sp.	12	5	G	G	G	1.8	5	M	R		
30	Poplar Species	<i>Populus</i> sp.	8	3	G	G	G	1.2	5	M	R		
31	Poplar Species	<i>Populus</i> sp.	7	3	G	G	G	1.2	5	M	R		
32	Poplar Species	<i>Populus</i> sp.	7	3	G	G	G	1.2	5	M	R		
33	Poplar Species	<i>Populus</i> sp.	8	3	G	G	G	1.2	5	M	R		
34	Poplar Species	<i>Populus</i> sp.	7	3	G	G	G	1.2	5	M	R		
35	Poplar Species	<i>Populus</i> sp.	8	3	G	G	G	1.2	5	M	R		
36	Poplar Species	<i>Populus</i> sp.	10	3	G	G	G	1.8	5	M	R		
37	Poplar Species	<i>Populus</i> sp.	7	3	G	G	G	1.2	5	M	R		
38	Poplar Species	<i>Populus</i> sp.	6	3	G	G	G	1.2	5	M	R		
39	Poplar Species	<i>Populus</i> sp.	9	3	G	G	G	1.2	5	M	R		

Tree	Common Name	Scientific Name	DBH	CW	TI	CS	CV	TPZ	Cat.	Loc.	Rec.	Comments	TAG
40	Poplar Species	<i>Populus</i> sp.	7	3	F	G	G	1.2	5	M	R		
41	Poplar Species	<i>Populus</i> sp.	8	3	G	G	G	1.2	5	M	R		
42	Poplar Species	<i>Populus</i> sp.	9	4	G	G	G	1.2	5	M	R		
43	Poplar Species	<i>Populus</i> sp.	11	4	G	G	G	1.8	5	M	R		
44	Poplar Species	<i>Populus</i> sp.	8	4	G	G	G	1.2	5	M	R		
45	Poplar Species	<i>Populus</i> sp.	11	4	G	G	G	1.8	5	M	R		
46	Poplar Species	<i>Populus</i> sp.	13	4	G	G	G	1.8	5	M	R		
47	Poplar Species	<i>Populus</i> sp.	12	4	G	G	G	1.8	5	M	R		
48	Honey Locust	<i>Gleditsia triacanthos</i>	18	6	G	G	G	1.8	5	M	P		
49	Honey Locust	<i>Gleditsia triacanthos</i>	9	4	G	G	G	1.2	5	M	P		
50	Poplar Species	<i>Populus</i> sp.	6	2	G	G	-	1.2	5	M	R (Cond.)		
51	Poplar Species	<i>Populus</i> sp.	7	2	G	G	-	1.2	5	M	R (Cond.)		
52	Norway Maple	<i>Acer platanoides</i>	17	8	G	G	G	1.8	3	M	P		
53	Norway Maple	<i>Acer platanoides</i>	24	8	G	G	G	1.8	3	M	P		
54	Norway Maple	<i>Acer platanoides</i>	19	8	G	G	G	1.8	3	M	P		
55	Norway Maple	<i>Acer platanoides</i>	24	8	G	G	G	1.8	3	M	P		
56	Norway Maple	<i>Acer platanoides</i>	26	8	G	G	G	1.8	3	M	I		
57	Red Oak	<i>Quercus rubra</i>	22	8	G	G	G	1.8	3	M	P		
58	Linden	<i>Tilia cordata</i>	17	8	G	G	G	1.8	3	M	I		
59	Ash Species	<i>Fraxinus</i> sp.	22	5	G	G	G	1.8	5	M	R		
60	Ash Species	<i>Fraxinus</i> sp.	30	5	G	G	G	2.4	5	M	R		
61	Ash Species	<i>Fraxinus</i> sp.	33	6	G	G	G	2.4	5	M	R		
62	Honey Locust	<i>Gleditsia triacanthos</i>	11	3	G	G	G	1.8	5	M	I		
63	Honey Locust	<i>Gleditsia triacanthos</i>	9	3	G	G	G	1.2	5	M	R	TRCA	
64	Honey Locust	<i>Gleditsia triacanthos</i>	7	3	G	G	G	1.2	5	M	R	TRCA	
65	Honey Locust	<i>Gleditsia triacanthos</i>	11	3	G	G	G	1.8	5	M	R	TRCA	
66	Honey Locust	<i>Gleditsia triacanthos</i>	12	3	G	G	G	1.8	5	M	R	TRCA	
67	Honey Locust	<i>Gleditsia triacanthos</i>	9	3	G	G	G	1.2	-	S/N	P		
68	Honey Locust	<i>Gleditsia triacanthos</i>	8	3	G	G	G	1.2	5	M	R		
69	Honey Locust	<i>Gleditsia triacanthos</i>	7	3	P	G	F	1.2	5	M	R		
70	Honey Locust	<i>Gleditsia triacanthos</i>	7	3	G	G	G	1.2	5	M	R		
71	Honey Locust	<i>Gleditsia triacanthos</i>	7	3	G	G	G	1.2	5	M	R		
72	Honey Locust	<i>Gleditsia triacanthos</i>	9	3	G	G	G	1.2	5	M	P		
73	Ash Species	<i>Fraxinus</i> sp.	32	6	G	G	G	2.4	5	M	P		
74	Honey Locust	<i>Gleditsia triacanthos</i>	7	3	G	G	G	1.2	5	M	TBD		
75	Ginkgo	<i>Ginkgo biloba</i>	22	5	G	G	G	1.8	5	M	TBD		
76	Bradford Pear	<i>Pyrus calleryana</i>	5	2	G	G	G	1.2	5	M	TBD		
77	Bradford Pear	<i>Pyrus calleryana</i>	5	2	G	G	G	1.2	5	M	TBD		
78	Bradford Pear	<i>Pyrus calleryana</i>	5	2	G	G	G	1.2	5	M	TBD		
79	Ginkgo	<i>Ginkgo biloba</i>	13	5	G	F	G	1.8	5	M	TBD		
80	Honey Locust	<i>Gleditsia triacanthos</i>	7	3	G	G	G	1.2	5	M	TBD		
81	Honey Locust	<i>Gleditsia triacanthos</i>	11	4	G	G	G	1.8	5	M	TBD		

Tree	Common Name	Scientific Name	DBH	CW	TI	CS	CV	TPZ	Cat.	Loc.	Rec.	Comments	TAG
82	Honey Locust	<i>Gleditsia triacanthos</i>	9	4	G	G	G	1.2	5	M	TBD		
83	Elm Species	<i>Ulmus</i> sp.	11	4	G	F	G	1.8	5	M	TBD		
84	Honey Locust	<i>Gleditsia triacanthos</i>	10	4	G	G	G	1.8	5	M	TBD		
85	Honey Locust	<i>Gleditsia triacanthos</i>	11	4	G	G	G	1.8	5	M	TBD		
86	Linden	<i>Tilia cordata</i>	6	2	G	F	G	1.2	5	M	TBD		
87	Elm Species	<i>Ulmus</i> sp.	5	2	F	G	F	1.2	5	M	TBD		
88	Ginkgo	<i>Ginkgo biloba</i>	5	2	G	F	G	1.2	5	M	TBD		
89	Honey Locust	<i>Gleditsia triacanthos</i>	7	4	G	F	G	1.2	5	M	R		
90	Ash Species	<i>Fraxinus</i> sp.	39	8	G	F	G	2.4	5	M	R		
91	Ash Species	<i>Fraxinus</i> sp.	36	6	G	G	G	2.4	3	M	P		
92	Ash Species	<i>Fraxinus</i> sp.	31	6	G	F	G	2.4	3	M	P		
93	Ash Species	<i>Fraxinus</i> sp.	28	6	G	F	G	1.8	3	M	P		
94	Honey Locust	<i>Gleditsia triacanthos</i>	8	3	G	G	G	1.2	5	M	R		
95	Honey Locust	<i>Gleditsia triacanthos</i>	8	3	G	F	G	1.2	5	M	R		
96	Freeman's Maple	<i>Acer x freemanii</i>	10	3	G	F	G	1.8	3	M	R		
97	Freeman's Maple	<i>Acer x freemanii</i>	9	4	G	G	G	1.2	3	M	R		
98	Freeman's Maple	<i>Acer x freemanii</i>	11	4	G	G	G	1.8	3	M	P		
99	Freeman's Maple	<i>Acer x freemanii</i>	9	4	G	G	G	1.2	3	M	P		
100	Freeman's Maple	<i>Acer x freemanii</i>	10	4	G	G	G	1.8	3	M	R		
101	Freeman's Maple	<i>Acer x freemanii</i>	10	4	G	G	G	1.8	3	M	R		
102	Honey Locust	<i>Gleditsia triacanthos</i>	6	3	G	G	G	1.2	5	M	R		
103	Honey Locust	<i>Gleditsia triacanthos</i>	7	3	G	G	G	1.2	5	M	R		
104	Honey Locust	<i>Gleditsia triacanthos</i>	7	3	G	F	G	1.2	5	M	R		
105	Honey Locust	<i>Gleditsia triacanthos</i>	6	3	G	G	G	1.2	5	M	R		
106	Honey Locust	<i>Gleditsia triacanthos</i>	7	3	G	G	G	1.2	5	M	R		
107	Honey Locust	<i>Gleditsia triacanthos</i>	7	3	G	F	G	1.2	5	M	R		
108	Linden	<i>Tilia cordata</i>	39	5	G	G	G	2.4	1	S/N	R	TRCA	
109	Linden	<i>Tilia cordata</i>	47	6	G	F	G	3.0	1	S/N	R	TRCA	
110	Linden	<i>Tilia cordata</i>	35	5	G	G	G	2.4	1	S/N	R	DBH estimated; TRCA	
111	Linden	<i>Tilia cordata</i>	40	6	G	F	G	2.4	1	S/N	R	TRCA	
112	Linden	<i>Tilia cordata</i>	35	5	G	G	G	2.4	1	S/N	R	TRCA	
113	London Plane-tree	<i>Platanus x acerifolia</i>	8	3	G	F	G	1.2	5	M	R		
114	London Plane-tree	<i>Platanus x acerifolia</i>	8	3	G	F	G	1.2	5	M	R		
115	London Plane-tree	<i>Platanus x acerifolia</i>	7	3	G	G	G	1.2	5	M	R		
116	London Plane-tree	<i>Platanus x acerifolia</i>	7	3	G	G	G	1.2	5	M	R		
117	London Plane-tree	<i>Platanus x acerifolia</i>	7	3	G	G	G	1.2	5	M	R		
118	Accolade Elm	<i>Ulmus japonica</i> 'Morton'	6	3	G	G	G	1.2	5	M	R		
119	Accolade Elm	<i>Ulmus japonica</i> 'Morton'	6	3	G	G	G	1.2	5	M	R		
120	Red Oak	<i>Quercus rubra</i>	6	3	G	G	G	1.2	5	M	R		
121	Red Oak	<i>Quercus rubra</i>	6	3	G	G	G	1.2	5	M	R		
122	Red Oak	<i>Quercus rubra</i>	6	3	G	G	G	1.2	5	M	R		
123	Red Oak	<i>Quercus rubra</i>	6	3	G	G	G	1.2	5	M	R		

Tree	Common Name	Scientific Name	DBH	CW	TI	CS	CV	TPZ	Cat.	Loc.	Rec.	Comments	TAG
124	Red Oak	<i>Quercus rubra</i>	6	3	G	G	G	1.2	5	M	R		
125	Red Oak	<i>Quercus rubra</i>	6	3	G	G	G	1.2	5	M	R		
126	Accolade Elm	<i>Ulmus japonica</i> 'Morton'	6	3	G	G	G	1.2	5	M	R		
127	Accolade Elm	<i>Ulmus japonica</i> 'Morton'	6	3	G	G	G	1.2	5	M	R		
128	London Plane-tree	<i>Platanus x acerifolia</i>	2	2	G	G	G	1.2	5	M	R		
129	London Plane-tree	<i>Platanus x acerifolia</i>	2	2	G	G	G	1.2	5	M	R		
130	Red Oak	<i>Quercus rubra</i>	9	3	G	G	G	1.2	5	M	R		
131	Red Oak	<i>Quercus rubra</i>	15	4	G	G	G	1.8	5	M	R		
132	Red Oak	<i>Quercus rubra</i>	7	3	G	G	G	1.2	5	M	R		
133	Red Oak	<i>Quercus rubra</i>	7	3	G	G	F	1.2	5	M	R		
134	Red Oak	<i>Quercus rubra</i>	14	4	G	G	G	1.8	5	M	TBD		
135	Elm Species	<i>Ulmus</i> sp.	14	4	G	G	G	1.8	5	M	TBD		
136	Elm Species	<i>Ulmus</i> sp.	15	4	G	F	G	1.8	5	M	TBD	DBH estimated.	
137	Honey Locust	<i>Gleditsia triacanthos</i>	7	4	G	G	G	1.2	5	M	TBD	Broken branch	
138	Honey Locust	<i>Gleditsia triacanthos</i>	7	3	G	G	G	1.2	5	M	TBD		
139	Honey Locust	<i>Gleditsia triacanthos</i>	6	3	G	G	G	1.2	5	M	TBD		
140	Swamp White Oak	<i>Quercus bicolor</i>	13	3	G	G	G	1.8	5	M	TBD		
141	Honey Locust	<i>Gleditsia triacanthos</i>	6	3	G	G	G	1.2	5	M	TBD		
142	Honey Locust	<i>Gleditsia triacanthos</i>	6	3	G	G	G	1.2	5	M	TBD		
143	Honey Locust	<i>Gleditsia triacanthos</i>	6	3	G	G	P	1.2	5	M	TBD		
144	Honey Locust	<i>Gleditsia triacanthos</i>	6	3	G	G	G	1.2	5	M	TBD		
145	Honey Locust	<i>Gleditsia triacanthos</i>	6	3	G	G	G	1.2	5	M	TBD		
146	Honey Locust	<i>Gleditsia triacanthos</i>	7	3	G	G	G	1.2	5	M	TBD		
147	Elm Species	<i>Ulmus</i> sp.	13	3	G	G	G	1.8	5	M	TBD		
148	Elm Species	<i>Ulmus</i> sp.	12	3	G	F	G	1.8	5	M	TBD		
149	Honey Locust	<i>Gleditsia triacanthos</i>	10	1	G	G	-	1.8	5	M	TBD	DBH estimated.	
150	Swamp White Oak	<i>Quercus bicolor</i>	11	3	G	G	G	1.8	5	M	TBD		
151	Elm Species	<i>Ulmus</i> sp.	16	3	G	G	G	1.8	5	M	TBD		
152	Elm Species	<i>Ulmus</i> sp.	17	4	G	G	G	1.8	5	M	TBD		
153	Elm Species	<i>Ulmus</i> sp.	17	4	G	G	G	1.8	5	M	TBD		
154	Elm Species	<i>Ulmus</i> sp.	15	4	G	G	G	1.8	5	M	TBD		
155	Elm Species	<i>Ulmus</i> sp.	17	4	G	F	G	1.8	5	M	TBD		
156	Elm Species	<i>Ulmus</i> sp.	17	4	G	F	G	1.8	5	M	TBD		
157	Elm Species	<i>Ulmus</i> sp.	19	5	G	F	G	1.8	5	M	TBD		
158	Elm Species	<i>Ulmus</i> sp.	17	5	G	F	G	1.8	5	M	TBD		
159	Elm Species	<i>Ulmus</i> sp.	13	3	G	F	G	1.8	5	M	TBD		
160	Elm Species	<i>Ulmus</i> sp.	11	3	G	F	G	1.8	5	M	TBD		
161	Elm Species	<i>Ulmus</i> sp.	19	5	G	G	G	1.8	5	M	TBD		
162	Ginkgo	<i>Ginkgo biloba</i>	6	1	G	G	-	1.2	3	M	TBD	DBH estimated.	
163	Ginkgo	<i>Ginkgo biloba</i>	13	3	G	G	G	1.8	3	M	TBD		
164	Ginkgo	<i>Ginkgo biloba</i>	11	3	G	G	G	1.8	3	M	TBD		
165	Ginkgo	<i>Ginkgo biloba</i>	11	3	G	F	G	1.8	3	M	TBD		

Tree	Common Name	Scientific Name	DBH	CW	TI	CS	CV	TPZ	Cat.	Loc.	Rec.	Comments	TAG
166	Ginkgo	<i>Ginkgo biloba</i>	12	3	G	F	G	1.8	3	M	TBD		
167	Honey Locust	<i>Gleditsia triacanthos</i>	10	3	P	G	-	1.8	5	M	TBD	DBH estimated.	
168	Swamp White Oak	<i>Quercus bicolor</i>	14	3	G	G	G	1.8	5	M	TBD		
169	Swamp White Oak	<i>Quercus bicolor</i>	14	3	G	F	G	1.8	5	M	TBD		
170	Unidentified Species		10	3	P	G	-	1.8	5	M	TBD	DBH estimated.	
171	Swamp White Oak	<i>Quercus bicolor</i>	15	4	G	G	G	1.8	5	M	TBD		
172	Siberian Elm	<i>Ulmus pumila</i>	60	10	G	F	G	3.6	5	M	TBD	DBH estimated.	
173	Poplar Species	<i>Populus</i> sp.	30, 15	10	F	F	G	2.4	1	S/N	TBD	DBH estimated; growing in fence	
174	European Beech	<i>Fagus sylvatica</i>	8	1	G	G	G	1.2	-	S/N	TBD		
175	Siberian Elm	<i>Ulmus pumila</i>	10	3	F	F	G	1.8	-	S/N	TBD		
176	Manitoba Maple	<i>Acer negundo</i>	10, 10, 10	3	F	F	G	1.8	-	S/N	TBD	DBH estimated.	
177	Siberian Elm	<i>Ulmus pumila</i>	35	10	F	G	F	2.4	1	S/N	TBD		
178	Siberian Elm	<i>Ulmus pumila</i>	35	8	G	F	G	2.4	5	M	TBD		
179	Siberian Elm	<i>Ulmus pumila</i>	30	8	G	F	P	2.4	5	M	TBD		8298
180	Siberian Elm	<i>Ulmus pumila</i>	33	10	G	F	G	2.4	5	M	TBD		8297
181	Siberian Elm	<i>Ulmus pumila</i>	24	6	G	F	G	1.8	5	M	TBD		8296
182	Siberian Elm	<i>Ulmus pumila</i>	44	10	G	F	G	3.0	5	M	TBD		8295
183	Siberian Elm	<i>Ulmus pumila</i>	34	10	G	F	G	2.4	5	M	TBD		
184	Siberian Elm	<i>Ulmus pumila</i>	25	8	G	F	G	1.8	5	M	TBD		
185	Siberian Elm	<i>Ulmus pumila</i>	36	8	G	F	G	2.4	5	M	TBD		
186	Siberian Elm	<i>Ulmus pumila</i>	31	8	G	F	G	2.4	5	M	TBD	DBH measured at 1.0 m.	
187	Siberian Elm	<i>Ulmus pumila</i>	35	8	G	F	G	2.4	5	M	TBD		8290
188	Siberian Elm	<i>Ulmus pumila</i>	50	12	G	F	G	3.0	5	M	TBD		
189	Siberian Elm	<i>Ulmus pumila</i>	51	12	G	G	G	3.6	5	M	TBD		
190	Siberian Elm	<i>Ulmus pumila</i>	23, 22, 20	6	G	F	G	1.8	-	B	TBD	TRCA	
191	Manitoba Maple	<i>Acer negundo</i>	20	6	G	F	G	1.8	-	B	TBD	DBH estimated; TRCA	
192	Manitoba Maple	<i>Acer negundo</i>	15	6	F	F	G	1.8	-	B	TBD	DBH estimated; TRCA	
193	American Mountain-Ash	<i>Sorbus americana</i>	10, 10, 10	6	F	F	G	1.8	-	B	TBD	DBH estimated; growing in fence; TRCA	
194	Siberian Elm	<i>Ulmus pumila</i>	25, 15, 15	6	F	F	G	1.8	-	B	TBD	DBH estimated; growing in fence; TRCA	
195	Tree-of-heaven	<i>Ailanthus altissima</i>	10	4	G	G	G	1.8	-	S/N	R	TRCA	
196	Tree-of-heaven	<i>Ailanthus altissima</i>	15	4	G	G	G	1.8	-	S/N	R	DBH estimated; TRCA	
197	Tree-of-heaven	<i>Ailanthus altissima</i>	10, 5	4	F	F	G	1.8	-	S/N	R	DBH estimated; TRCA	
198	Tree-of-heaven	<i>Ailanthus altissima</i>	15	4	G	F	G	1.8	-	S/N	R	DBH estimated; TRCA	
199	Tree-of-heaven	<i>Ailanthus altissima</i>	10	4	G	G	G	1.8	-	S/N	R	DBH estimated; TRCA	
200	Tree-of-heaven	<i>Ailanthus altissima</i>	10	4	G	G	G	1.8	-	S/N	R	DBH estimated; TRCA	
201	Swamp White Oak	<i>Quercus bicolor</i>	7	2	G	G	G	1.2	5	M	I		
202	American Beech	<i>Fagus grandifolia</i>	13	3	G	G	G	1.8	-	S/N	I		
203	Norway Maple	<i>Acer platanoides</i>	19	5	G	G	G	1.8	3	M	P		
204	Norway Maple	<i>Acer platanoides</i>	25	5	G	G	G	1.8	3	M	P		
205	Norway Maple	<i>Acer platanoides</i>	9	2	G	G	G	1.2	3	M	P		
206	Norway Maple	<i>Acer platanoides</i>	24	5	G	G	G	1.8	3	M	P		
207	Norway Maple	<i>Acer platanoides</i>	19	5	G	G	G	1.8	3	M	P		

Tree	Common Name	Scientific Name	DBH	CW	TI	CS	CV	TPZ	Cat.	Loc.	Rec.	Comments	TAG
208	Red Oak	<i>Quercus rubra</i>	19	5	G	F	G	1.8	5	M	P		
209	Sugar Maple	<i>Acer saccharum</i>	28	5	G	F	G	1.8	5	M	R	To be removed by others before the commencement of the project	
210	Sugar Maple	<i>Acer saccharum</i>	23	5	G	F	G	1.8	5	M	R	To be removed by others before the commencement of the project	
211	Sugar Maple	<i>Acer saccharum</i>	21	5	G	F	G	1.8	5	M	R	To be removed by others before the commencement of the project	
212	Sugar Maple	<i>Acer saccharum</i>	27	5	G	F	G	1.8	5	M	R	To be removed by others before the commencement of the project	
213	Sugar Maple	<i>Acer saccharum</i>	23	5	G	F	G	1.8	5	M	R	To be removed by others before the commencement of the project	
214	Ash Species	<i>Fraxinus</i> sp.	23	5	F	F	G	1.8	5	M	R	To be removed by others before the commencement of the project	
215	Ash Species	<i>Fraxinus</i> sp.	23	6	G	G	G	1.8	5	M	R		
216	Ash Species	<i>Fraxinus</i> sp.	21	6	G	F	G	1.8	5	M	R		
217	Ash Species	<i>Fraxinus</i> sp.	24	5	G	G	G	1.8	5	M	R		
218	Ash Species	<i>Fraxinus</i> sp.	23	5	F	G	G	1.8	5	M	R		
219	Ash Species	<i>Fraxinus</i> sp.	25	5	G	G	G	1.8	5	M	R		
220	Ash Species	<i>Fraxinus</i> sp.	21	5	G	F	G	1.8	5	M	R		
221	Ash Species	<i>Fraxinus</i> sp.	25	5	G	F	G	1.8	5	M	R		
222	Ash Species	<i>Fraxinus</i> sp.	26	5	G	G	G	1.8	5	M	R		
223	Ash Species	<i>Fraxinus</i> sp.	23	5	G	G	G	1.8	5	M	R		
224	Ash Species	<i>Fraxinus</i> sp.	26	6	G	G	G	1.8	5	M	R		
225	Ash Species	<i>Fraxinus</i> sp.	31	5	G	G	G	2.4	5	M	R		
226	Norway Maple	<i>Acer platanoides</i>	35	5	F	F	G	2.4	1	S/N	P		90
227	Eastern White Cedar	<i>Thuja occidentalis</i>	15	3	G	F	G	1.8	-	S/N	P		91
228	Eastern White Cedar	<i>Thuja occidentalis</i>	38	6	G	F	G	2.4	1	S/N	P		92
229	Norway Maple	<i>Acer platanoides</i>	48	10	G	F	G	3.0	1	S/N	P		93
230	Freeman's Maple	<i>Acer x freemanii</i>	7	3	G	G	G	1.2	3	M	P		
231	Freeman's Maple	<i>Acer x freemanii</i>	9	3	G	G	G	1.2	3	M	P	DBH measured at 1.0 m.	
232	Manitoba Maple	<i>Acer negundo</i>	15, 15, 15	12	F	F	G	1.8	5	M	R	Clump	
233	Freeman's Maple	<i>Acer x freemanii</i>	28	8	G	F	G	1.8	3	M	P	TRCA	
234	Freeman's Maple	<i>Acer x freemanii</i>	29	8	G	F	G	1.8	3	M	P	TRCA	
235	Siberian Elm	<i>Ulmus pumila</i>	45	8	G	F	G	3.0	1	S/N	R	DBH estimated; TRCA	

APPENDIX 2 – TREE INVENTORY ATTRIBUTES

Species	The common and scientific names are provided for each tree.
Diameter at Breast Height (DBH)	The diameter of each tree, in centimetres, at breast height (1.4 m above grade).
Canopy Width (CW)	An estimation of the average diameter of the tree canopy, in metres.
Trunk Integrity (TI)	An assessment of the tree's trunk for any externally-visible defects or weaknesses. It is rated on an ascending scale of Poor-Fair-Good.
Canopy Structure (CS)	An assessment of the tree's main scaffold branches and the canopy of the tree for defects or weaknesses visible from ground level. It is also rated on an ascending scale of Poor-Fair-Good.
Canopy Vitality (CV)	An assessment of the general health and vigour of the tree, derived partly through a comparison of deadwood and live growth relative to a 100% healthy tree. The size and colour of foliage are also considered in this category. During the leaf-off season, the number and distribution of buds is an important determinant of canopy vitality. This indicator is also rated on an ascending scale of Poor-Fair-Good.
Tree Protection Zone (TPZ)	The tree protection zone, in metres, as measured from the base of the subject tree's stem.
Category (Cat.)	<p>By-laws respecting trees provide for the protection of trees situated on both private and City property. The following five categories are outlined in the City of Toronto 'Guidelines for Completion of an Arborist Report'.</p> <ol style="list-style-type: none"> 1. Trees with diameters of 30 cm or greater, situated on private property on the subject site. 2. Trees with diameters of 30 cm or greater, situated on private property, within 6 m of the subject site. 3. Trees of all diameters situated on City-owned parkland within 6 m of the subject site. 4. Trees of all diameters situated within lands designated under City of Toronto Municipal Code, Chapter 658, Ravine and Natural Feature Protection. 5. Trees of all diameters situated within the City road allowance adjacent to the subject site.
Location (Loc.)	The location of the tree relative to the subject site: on the subject site (S), on neighbouring property (N), on municipal property (M), or on a property boundary (B).
Recommendation (Rec.)	The recommendation for each tree: Protect (P), Injure (I), or Remove (R). Trees to be preserved with no active tree protection are denoted with a dash (-).
Comments	Comments pertaining to the tree provided as needed.

APPENDIX 3 – SELECTED FIGURES



Figure 1: Trees #4-11 and 196-200 are recommended for removal.



Figure 2: Trees #17, 18, 235 are recommended for removal.



Figure 3: Trees #39-47 are recommended for removal.



Figure 4: Trees #53-55 are recommended for protection; tree #56 is recommended for retention with injury.



Figure 5: Trees #102-104 are recommended for removal.



Figure 6: Trees #108, 109 are recommended for removal.



Figure 7: Trees #124-131 are recommended for removal.

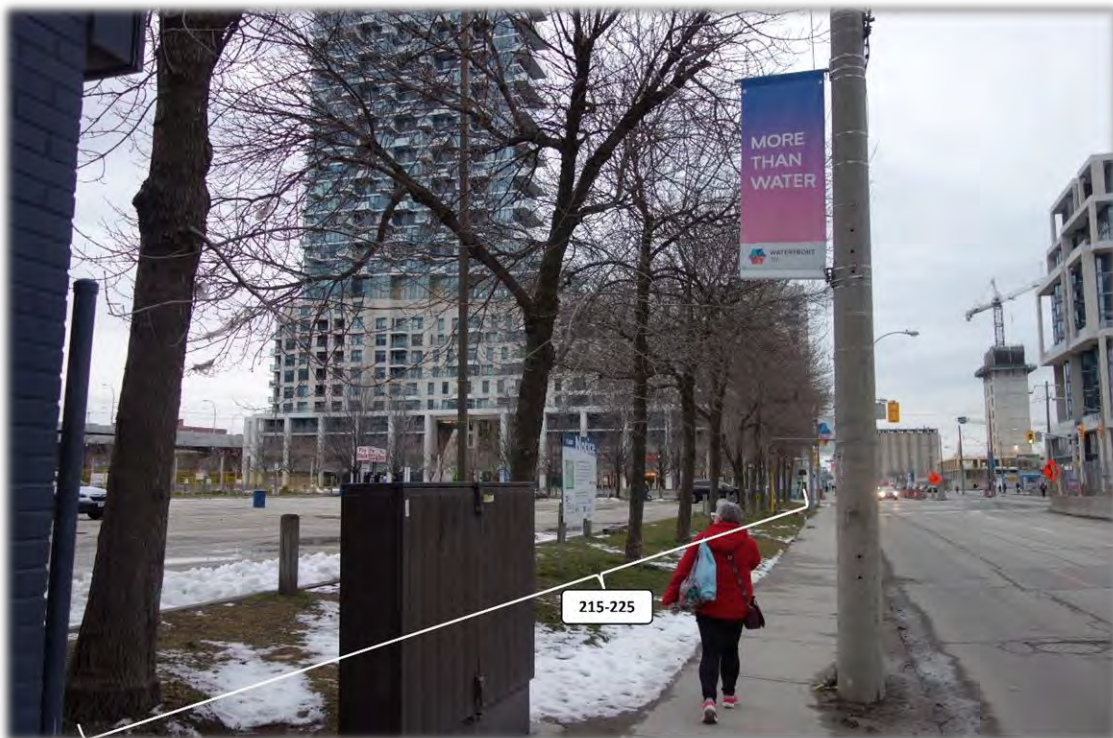


Figure 8: Trees #215-225 are recommended for removal.



Figure 9: Tree #229 is recommended for protection.

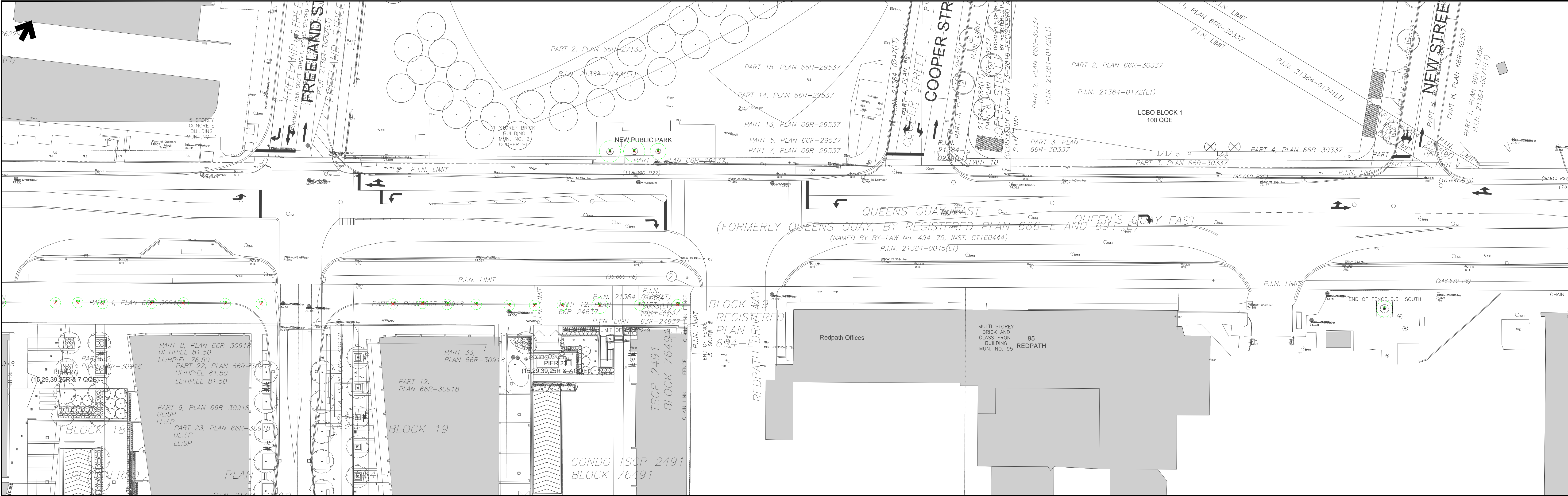
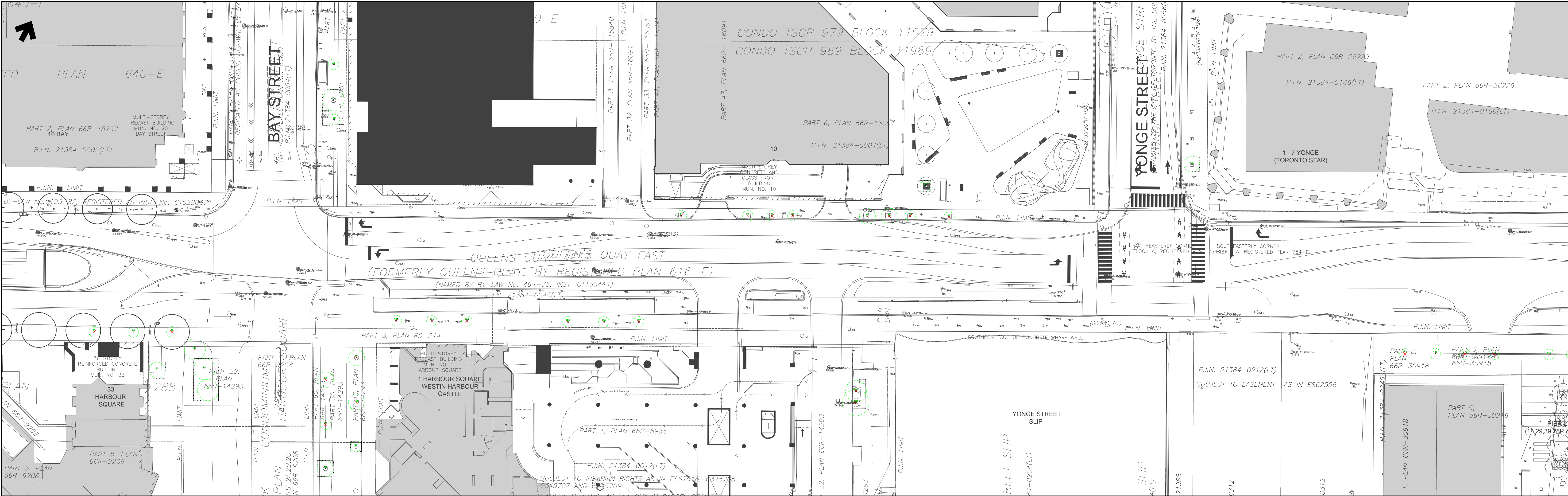


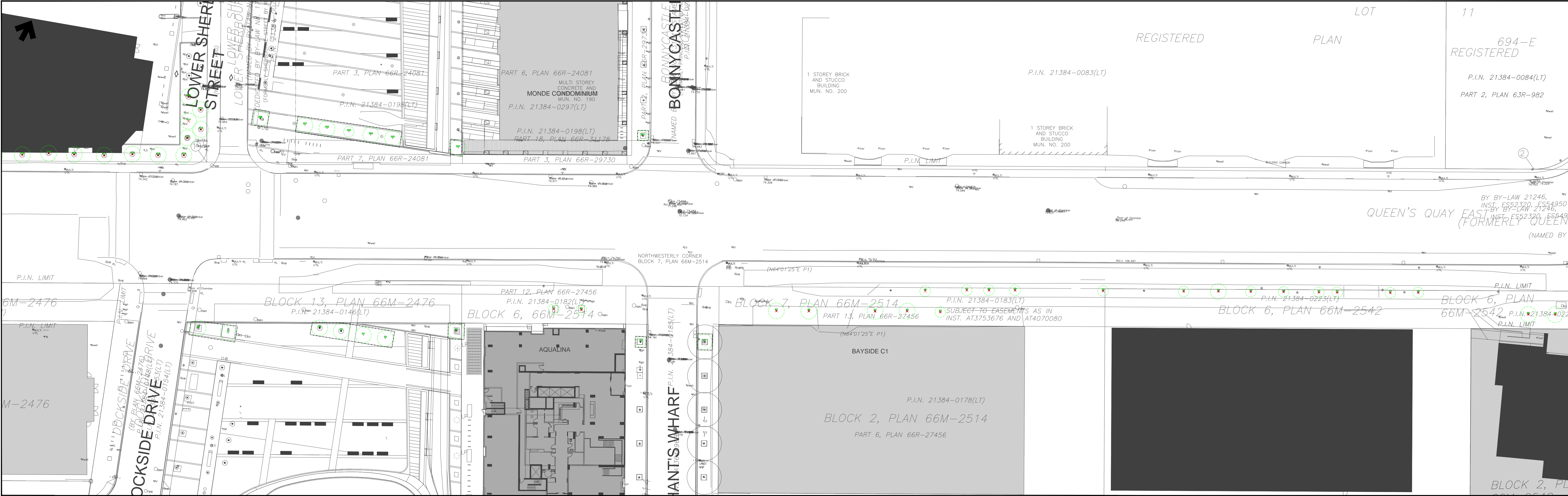
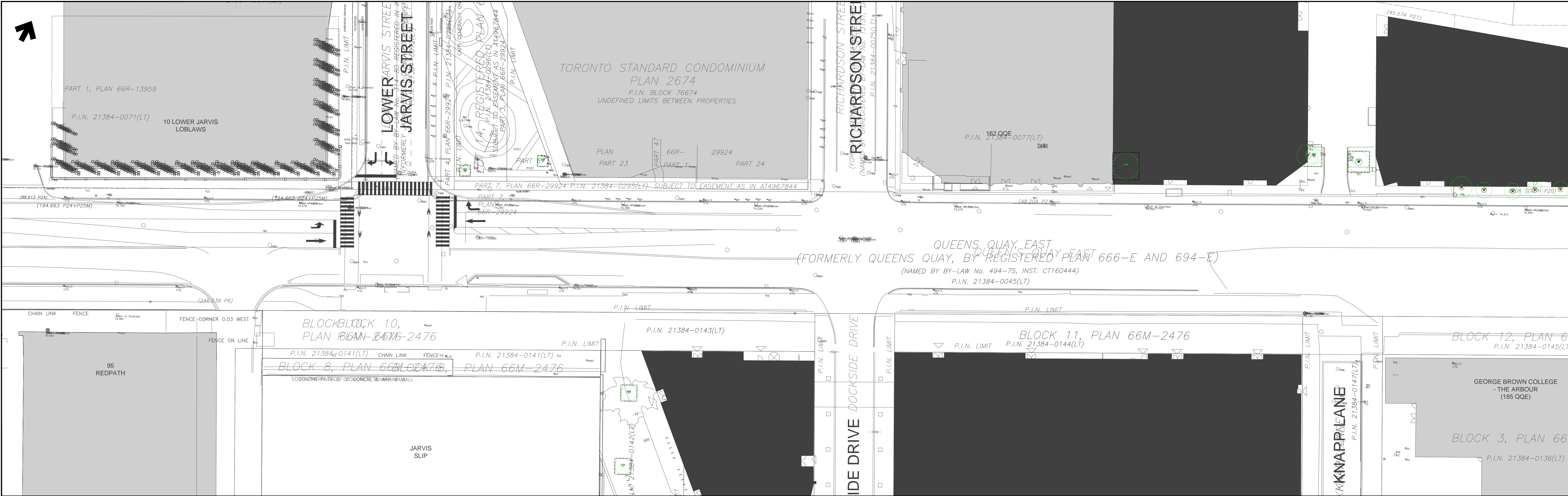
Figure 10: Trees #233 and 234 are recommended for protection.

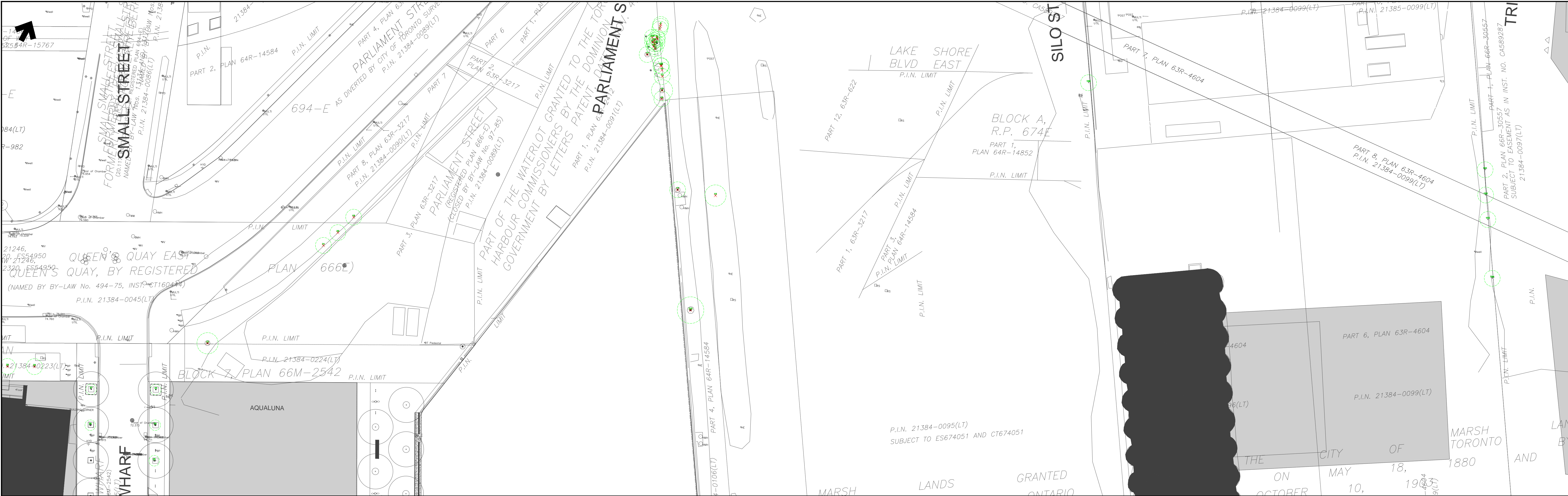
APPENDIX 4 – TREE-RELATED PLANS

Inclusions:


1. Tree Protection Plan (3 pages)










LEGEND


 EXISTING TREE TO BE RETAINED

 EXISTING TREE TO BE REMOVED

 TREE PROTECTION ZONE (TPZ)

 TREE HOARDING/FENCING

No.	DATE	REVISIONS	BY:	CHKD.
1	28/02/2022	ISSUED FOR ARBORIST REPORT	SJ	--



URBAN FOREST INNOVATIONS INC.
1331 Northaven Drive
Mississauga, Ontario L5G 4E8
T: 905-274-1022
F: 905-274-2170

TREE PROTECTION PLAN

WATERFRONT EAST LRT - QUEENS QUAY EAST

SCALE

1:400

DATE

28/02/2022

FIGURE

TP-3

APPENDIX 5 – TREE PROTECTION SPECIFICATIONS

5.1 Scope and Purpose

This section outlines specifications for tree protection, and **not all recommendations may apply to the subject project**. Refer to the main body of the arborist report for tree-by-tree protection recommendations.

5.2 General Provisions

5.2.1 Tree Protection

Four important tree protection measures should be undertaken on the project site if trees are to be preserved in a manner which will maintain their health over the long term. These include:

1. Establishment of tree protection fencing and/or hoarding around adequately-sized Tree Protection Zones (TPZs) prior to the commencement of any construction activity;
2. Installation of root zone compaction protection where compaction may be caused by construction traffic or materials/equipment storage and staging;
3. Implementation of root-sensitive excavation wherever Tree Protection Zones (TPZs) or significant rooting areas may be encroached upon by excavation and/or grading, and;
4. Root pruning in advance of conventional excavation, on an as-needed basis.

5.2.1.1 Tree Protection Zones (TPZs)

The purpose of a Tree Protection Zone (TPZ) is to prevent root damage, soil compaction and soil contamination, and workers and machinery must not encroach upon Tree Protection Zones in any way.

To prevent access and ensure that the TPZ is effective, the following steps shall be implemented in the establishment of TPZ fencing and/or hoarding.

1. The locations of TPZs should be clearly identified on the project Site Plan and associated tree-related plans. Typically, TPZs are to be shown as circles around tree location points, and drawn to scale in accordance with the minimum required TPZ radius, as specified in Appendix 1.
2. No groundbreaking activities or demolition should occur until all tree protection requirements have been met and the consulting arborist has confirmed the establishment of Tree Protection Zone fencing and/or hoarding.
3. Hoarding shall consist of 4' x 8' sheets of plywood laid lengthwise and supported using "L" shaped supports to prevent root damage. Hoarding shall be affixed to the frame in such a manner as to prevent removal of individual sections or movement of the entire hoarding structure. Construction fencing can be used where pedestrian or motorist sightlines may be obscured by solid hoarding. Framed construction fencing can also be used to frame large Tree Protection Zones or tree groups, with expressed prior approval of the municipal arborist or their designate. Framed fencing must be supported by a solid 2' x 4' frame. Fencing and/or hoarding

shall be maintained intact throughout the duration of the construction project, unless otherwise specified.

4. Upon installation, all tree protection fencing and/or hoarding must be approved by the municipal arborist or their designate.
5. All fencing and/or hoarding is to remain in place in good condition throughout the entire duration of the project. No fencing and/or hoarding is to be removed, relocated or otherwise altered without the written permission of the municipal arborist or their designate.
6. No grade change, excavation, or storage of fill, equipment or supplies is permitted within the TPZ at any time. Any encroachment of the TPZ shall not be undertaken without expressed written permission of the municipal arborist or their designate. TPZ encroachment may constitute Tree Injury as defined by various municipal tree protection policies and by-laws, and may subject the responsible parties to prescribed penalties.
7. All contractors and supervisors should be informed of the tree protection requirements, including potential penalties, at a pre-construction meeting.
8. Trees and TPZs should be regularly monitored by a consulting arborist throughout the duration of the project.
9. If TPZ encroachment should occur at any time during construction, the consulting arborist should evaluate the trees immediately so that appropriate treatment can be performed in a timely manner.
10. Signage similar to the figure shown below should be mounted on each side of TPZ fencing and/or hoarding immediately upon establishment and should be maintained for the duration of the project. Every sign should have minimum dimensions of 40 cm × 60 cm.

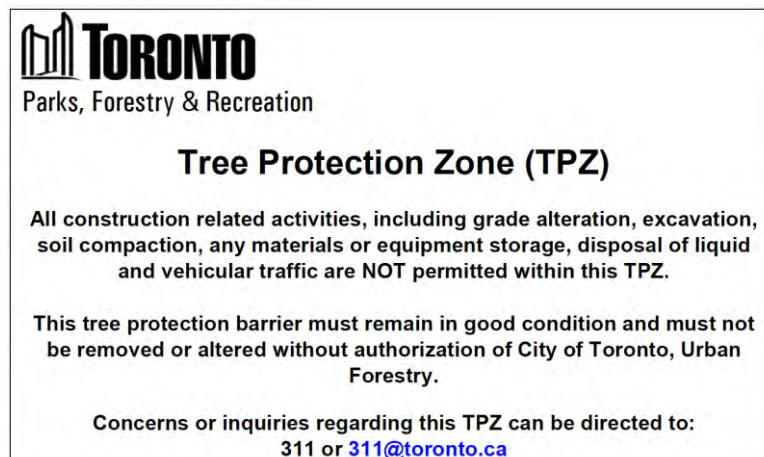


Figure 11: Sample TPZ information sign.

5.2.1.2 Root Zone Compaction Protection

Where traffic or access through the root zone is anticipated, a Root Zone Compaction Protection treatment should be installed.

Where limited non-vehicular access across the root zone is anticipated (e.g., occasional foot traffic, wheelbarrow), a Light Root Zone Compaction Protection specification should be implemented:

- Installation of medium-weight non-woven geotextile fabric or landscape cloth over affected area;
- Installation of 150 mm of wood chips over the fabric area;
- Installation of ½" plywood over wood chip mulch, and;
- Installation of appropriate covering material, if desired.

Where moderate non-vehicular access across the root zone is anticipated (e.g., materials staging) a Moderate Root Zone Compaction Protection specification should be implemented:

- Installation of medium-weight non-woven geotextile fabric or landscape cloth over affected area;
- 100 mm of granular clear stone laid over fabric area;
- Installation of medium-weight non-woven geotextile fabric or landscape cloth over the stone;
- Installation of 150 mm of wood chips over fabric area, and;
- Installation of ½" plywood over wood chip mulch.

In areas where frequent non-vehicular access or longer-term materials storage in the root zone is anticipated, or in areas where additional measures must be implemented to ensure complete exclusion of excavation activity, a Horizontal Hoarding/Excavation Exclusion specification should be implemented:

- Installation of medium-weight non-woven geotextile fabric or landscape cloth over affected area;
- Installation of 3 stacked and joined courses of 4" x 4" timbers around the area to be protected (including cross-members or joists, as required to maintain structural integrity);
- Installation of wood chip mulch in entire protected area, and;
- Installation of 2 layers of ¾" plywood or 1 steel plate over the protected area.

In areas where vehicular access or severe potential root zone compaction are anticipated, such as site access roads, temporary parking areas or heavy machine staging areas, a more robust Heavy Root Zone Compaction Protection specification should be developed and implemented on a site-specific basis. Key elements of such a specification may include multiple steel plates over load-dissipating materials, or modular geocellular systems such as Permavoid ArborRaft.

5.2.1.3 Tree-sensitive Demolition

Trees are often damaged by demolition activities undertaken during the clearing stage of the development process. For trees to be adequately protected during site demolitions, root-sensitive demolition protections must be implemented within Tree Protection Zones, as described below:

1. Prior to the commencement of site demolition, tree protection fencing must be established for retained trees.
2. Hardscape materials shall be broken up by hand or hand-operated machinery only (e.g., a hand-operated jackhammer to break up pavement, building foundations, etc.).
3. Machinery should be operated at shallow angles and broken-up materials should be removed by pulling away radially from the protected tree bases, or parallel to the direction of anticipated or observed root growth.
4. Upon removal of demolished materials, uncovered vertical soil profiles must be maintained in good structural integrity and prevented from disintegration (i.e. crumbling, erosion, fragmentation, etc.). Between the time of demolitions and new construction, exposed vertical soils may require shoring reinforcement, including a layer of burlap between shoring and exposed soil.
5. Following demolitions, affected TPZ areas should be reinstated with a high quality soil, such as triple mix soil, to provide a favourable growing medium for the development of new roots of the injured trees. Soil amendments, such as biochar, may also be considered for backfills inclusion. Soil depth should be sufficient to match existing surrounding soil grades.
6. Any roots exposed by demolition should be inspected and, where necessary, pruned by the supervising Certified Arborist in order to minimize permanent root damage.

5.2.1.4 Root-sensitive Excavation

Efforts should be made to exclude excavation or grade changes, including cutting or filling, from all TPZs. Where this is not possible, and unless otherwise specified, excavation shall utilize a root-sensitive methodology such as hand-digging, hydrovac or pneumatic (e.g., AirSpade) soil excavation, as specified in the arborist report.

Root-sensitive excavation must be conducted in advance of excavation using conventional excavation machinery. The objective of root-sensitive excavation is twofold: 1) to determine whether roots will be present beneath areas to be excavated and therefore determine the likely extent of damage to trees to be retained, and 2) to enable proper root pruning, as described below.

Root-sensitive excavation typically entails the creation of a trench approximately 200-300 mm wide between the subject tree (e.g., outside the established tree protection fencing) and the area to be excavated, without damaging existing significant roots. Unless otherwise specified, root-sensitive excavation should be undertaken to a minimum depth of 800 mm, unless excavation is proposed to a

shallower final depth. If excavation is for exploratory reasons and root pruning is not anticipated, equipment utilized during root-sensitive excavation should be operated at reduced pressures to prevent damage to root bark.

No excavation, whether undertaken by conventional or root-sensitive means shall take place within established tree protection zones without expressed written permission of the municipal arborist or their designate.

5.2.1.5 Root Pruning

Root pruning can help reduce the stresses experienced by a tree with root damage, encourage the growth of new fine and feeder roots, and prevent the spread of decay. Root pruning should be undertaken in conjunction with root-sensitive excavation in advance of conventional excavation, or immediately afterwards if unexpected roots are encountered. Root pruning should only be undertaken by an ISA Certified Arborist, and in the manner outlined below:

1. Roots that are severed, exposed, or diseased and are greater than 2.0 cm in diameter should be properly pruned. All roots must be pruned with clean and sharp hand tools only. Shovels, picks or other construction tools shall not be used to prune roots. Wound dressings or pruning paint must not be used to cover the ends of any cut.
2. Roots should be pruned in a similar fashion as branches, taking care to maintain the integrity of the root bark ridge. Root should be pruned back to native soil; root stubs must not be left upon completion of root pruning.
3. Prolonged exposure of tree roots must be avoided – exposed roots should be covered and kept moist with soil, mulch, irrigation, or at least moistened burlap if they are to be exposed for longer than 3 hours. All cut roots should be covered with soil or excavated trenches should be backfilled with native material as soon as possible following root pruning.

5.2.1.6 Crown Pruning

During the course of project works, the branches of retained trees may interfere with project works, including site access, materials storage, and new construction. Where any project works present an unavoidable conflict with the branches of retained trees, appropriate clearance crown pruning shall be performed in the manner outlined below:

1. Wherever possible, branches found to be in conflict with construction and equipment should be temporarily tied back, using non-constricting knots to secure the branch. If branches cannot be safely tied back without causing branch damage, including breaking or bark stripping, pruning should be performed, as required.
2. No branches larger than 10 cm in diameter shall be removed, and no more than 20% of the total live crown volume shall be removed from the tree.

3. Crown pruning shall be conducted by an ISA Certified Arborist in accordance with good arboricultural practice, as detailed in the pruning standard *ANSI A300 Part 1 – Tree, Shrub, and Other Woody Plant Maintenance – Standard Practices, Pruning*, and in the ANSI Z133.1 safety standard.

5.2.2 Post-construction Care

The following recommendations should be implemented upon completion of construction to ensure that the health and condition of retained and newly-planted trees is maintained and improved.

5.2.2.1 Retained Trees

1. Trees which have been retained through the construction process should be regularly monitored by an ISA Certified Arborist for signs of construction-induced stress, which may not be apparent until 3-6 years after site disturbance.
2. Wherever possible, root zone amelioration including watering and mulching should be undertaken. However, treatments such as fertilization should be avoided unless directly specified by the project consulting arborist.
3. Any physical damage to retained trees should be assessed by the project consulting arborist and properly mitigated, as required. If necessary, broken limbs or exposed roots should be pruned, damaged bark should be traced, and soil decompaction and/or decontamination should be undertaken by an ISA Certified Arborist. Stability of trees with significant root zone disturbance should be assessed, and advanced stability assessment or mitigation should be implemented if necessary.

5.2.2.2 New Trees

1. All newly planted trees and shrubs should be provided with a bed of composted woodchip mulch 10-15 cm thick, extending to at least the dripline of the plant. Mulch should be periodically replaced as it decomposes, and weeds should be removed from the mulch bed manually. The mulch must not touch the bark of the tree and under no circumstances should it be mounded up against the stem in a “volcano” style. This is especially damaging for young trees with thin bark.
2. All new plantings should be watered at least once per week during the growing season within the first two years after planting. Watering intensity should be increased during periods of drought. Watering should be deep and slow, ensuring that water penetrates to deep roots. Trees should not be watered directly adjacent to the trunk, but rather in a circular pattern extending from the trunk to at least the dripline. The soil should be allowed to dry in between watering periods to allow air to reach the roots.
3. Minimal pruning should be undertaken in the first two years after planting. Foliage should be retained to allow for the roots to establish. Only dead, crossing and broken branches should be pruned back to an appropriate pruning point at the time of planting.

APPENDIX 6 – LIMITATIONS OF ASSESSMENT

It is the policy of Urban Forest Innovations to attach the following clause regarding limitations. We do this to ensure that the client is aware of what is technically and professionally realistic in assessing and retaining trees.

The assessment(s) of the tree(s) presented in this report has been made using accepted arboricultural techniques. These may include, among other factors, a visual examination of: the above-ground parts of the tree(s) for visible structural defects, scars, external indications of decay such as fungal fruiting bodies, evidence of pests or pathogens, discoloured foliage, the condition of any visible root structures, the degree and direction of lean (if any), the general condition of the tree(s) and the surrounding site, and the proximity of property and people. Except where specifically noted, the tree(s) was not cored, probed, climbed or assessed using any advanced methods, and there was no detailed inspection of the root crown(s) involving excavation.

Notwithstanding the recommendations and conclusions made in this report, it must be recognized that trees are living organisms, and their health and vigour constantly change over time. They are not immune to changes in site or weather conditions, or general seasonal variations. Weather events such as wind or ice storms may result in the partial or complete failure of any tree, regardless of assessment results.

While reasonable efforts have been made to accurately assess the overall condition of the subject tree(s), no guarantee or warranty is offered, expressed or implied, that the tree(s) or any of its parts will remain standing or in stable condition. It is both professionally and practically impossible to predict with absolute certainty the behaviour of any single tree or its component parts, regardless of the assessment methodology implemented. Inevitably, a standing tree will always pose some level of risk. Most trees have the potential for failure under adverse weather conditions, and the risk can only be eliminated if the tree is removed.

Although every effort has been made to ensure that this assessment is reasonably accurate, the tree(s) should be re-assessed periodically. The assessment presented in this report is only valid at the time of inspection.

Respectfully submitted by,



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