Arborist Report

2254 Orchard Road

Burlington, Ontario February 7, 2019

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URBAN FOREST INNOVATIONS INC

Contents

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.

Introduction

Urban Forest Innovations Inc. (UFI) has been requested to prepare an arborist report for the proposed development at 2254 Orchard Road, in Burlington, Ontario. This report reviews the potential impacts of the proposed works upon 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.

In total, 48 trees are addressed in this report. The tree inventory is provided in Appendix 1. Selected photographs are provided in Appendix 2. A tree protection plan is provided in Appendix 3.

This report should be read in conjunction with all other servicing, grading and landscaping plans prepared for the project.

Methodology

Field Observations

Initial field observations were made on February 4, 2019, by Shane Jobber, ISA Certified Arborist ON-1746AM. There was no construction activity on the site at the time of the field observations. Subject site trees and off site trees within 6 meters of the potential limits of disturbance are included in the inventory. Tree diameter was measured at 1.4 metres above grade (DBH) and trees were assessed for health, structure and risk potential. No trees were tagged as part of this inventory.

Tree Assessments

A brief explanation of each tree assessment category included in the inventory is outlined below:

Species — The common and botanical 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.

Minimum Tree Protection Zone (MTPZ) – The minimum tree protection zone, in metres, as required by the City of Burlington in accordance with *Specification No. SS12A – "Tree Protection and Preservation"*. MTPZs are required for City-owned and shared trees, and are recommended for privately-owned trees.

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), Remove (R) and/or Maintenance Required (M). A dash (-) denotes trees to be preserved with no additional protection requirements.

Comments – Comments pertaining to the tree may be provided, as needed.

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 the 'Recommendations and Specifications' section of this report.

General Work Plan

The proposed site works include the demolition of an existing residential dwelling and associated hardscape materials, and the construction of a new 1-storey school and parking lot.

By-laws and Legislation

By-laws and legislation enacted by the City of Burlington and the Province of Ontario may regulate the injury or destruction of trees depending upon their location, size and other factors.

City of Burlington Public Tree By-law

The City of Burlington Public Tree By-law (68-2013) regulates the injury or destruction of trees located on City-owned property. Pursuant to this by-law, no City-owned tree may be injured, destroyed, or removed without the authorization of the City Arborist. Permission to injure or destroy a tree growing on public property may be subject to the issuance of a written permit.

Details about The City of Burlington Public Tree By-law, by-law 68-2013, including actions which may constitute tree injury, can be found online at:
https://www.burlington.ca/en/Modules/Bylaws/Bylaw/Download/93756adf-df26-4965-a2e5-01184e68d9ba

City of Burlington – Tree Protection and Preservation, Specification No. SS12A

The City of Burlington *Specification No. SS12A, "Tree Protection and Preservation*", enables the establishment and implementation of procedures to prevent the damage or destruction of trees on municipal rights-of-way, and recommends appropriate standards of tree protection which, at the discretion of the consulting project arborist, may be provided for private trees impacted by construction activities.

Specification No. SS12A outlines requirements for the size of Minimum Tree Protection Zones (MTPZs) and Critical Root Zones (CRZs), tree protection barrier materials and construction, tree removal and securities for non-compliance, procedures for excavation and/or other construction activities within MTPZs and CRZs, among other considerations.

Details about *Specification No. SS12A, "Tree Protection and Preservation*" can be found online at:
https://www.burlington.ca/en/services-for-you/resources/Forestry%20Operations/Tree_Protection_and_Preservation/Tree_protection_and_preservtion.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.

No inventoried trees appear to be growing on the boundary between the subject site and the adjacent properties.

Endangered, Rare or Protected Species

No endangered, rare or otherwise protected tree species were observed on the site.

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.

The proposed site works will require the removal of 17 trees on the subject site:

- Trees #3, 5, 11-22, 30, 31, and 34 (Figs. 2-5)

It should be noted that tree #11 is a cedar hedge that comprises 27 individual stems.

The client, Green Propeller Design, is proposing that all wood waste from downed trees be retained and recycled on site. The current proposal is to construct 9 foot curb stops from the wood material.

Tree Preservation and Protection

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 the 'Recommendations and Specifications' section of this report.

All trees to be retained within or adjacent to the limits of project works are identified as requiring either 'Preservation', for trees that are located sufficiently far from proposed works that no specific tree protection measures are recommended, or 'Protection', for trees requiring active protection behind tree protection hoarding.

Tree Preservation

No specific tree protection measures are recommended for tree #1, which is located sufficiently far from anticipated construction activities that added protection measures will not be necessary.

Tree Protection

Retained trees in proximity to the proposed works shall be protected behind tree preservation fencing that satisfies minimum required distances for each tree (where possible), as specified in Appendix 1, and in configurations as shown in Appendix 3. Fencing is to be established in advance of all proposed works, including but not limited to material and equipment delivery, staging and storage, hardscape destruction, excavation and groundbreaking work, and new construction activity.

Specifications for the establishment of protection fencing are outlined further in the 'Recommendations and Specifications' section of this report.

Several retained trees will be subject to the encroachment of minimum tree protection zones during the course of site works. In addition to tree protection fencing, trees undergoing TPZ encroachment require the implementation of the following additional tree protection strategies:

- **Root-Sensitive Excavation –** The Tree Protection Zones of trees #23-28 and 39-42 will undergo excavation to enable the proposed works, including the installation of new stabilization walls

and the new parking lot. All groundbreaking within TPZs must 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 should be enabled to stop works if, during the course of excavation, significant structural or transport roots (greater than approximately 25 mm diameter) are encountered, in order to properly prune the roots. Specifications for root-sensitive excavation and root pruning are outlined in the 'Recommendations and Specifications' section of this report.

Tree Risk and Required Tree Maintenance

At the time of inspection, there were no immediate risks posed by any trees on the subject site.

By-law and Permit Requirements

The 17 private trees (#3, 5, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 30, 31, and 34) that are proposed for removal are privately-owned; none is regulated pursuant to City of Burlington tree permitting by-laws. As such, it is expected that no permit will be required to enable their removal.

Recommendations and Specifications

This section outlines general recommendations for tree protection, and **not all recommendations may apply to the subject project**. Refer to the preceding sections for tree-by-tree recommendations. Further information and requirements concerning tree protection measures within the City of Burlington are outlined in the City's *Specification No. SS12A – 'Tree Protection and Preservation'*.

Specification No. SS12A, "Tree Protection and Preservation" can be found online at: https://www.burlington.ca/en/services-for-you/resources/Forestry%20Operations/Tree_Protection_and_Preservation/Tree_protection_and_preservtion.pdf

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 manner 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.

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. Typically, TPZs are to be shown as circles around tree location points, and are to be drawn to scale in accordance with the minimum required TPZ radius, as outlined in Appendix 1. The actual location of TPZ fencing and/or hoarding may differ from the circular TPZ and must be clearly shown on the site plan for every tree to be protected.
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 lain 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 City of Burlington staff. Framed fencing must be supported by a solid 2” × 4” frame. Fencing and/or hoarding shall be maintained intact throughout the duration of the construction project, unless otherwise specified.
4. 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 City of Burlington.
5. 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 City of Burlington. 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.
6. Signage similar to Figure 1, 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.
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 in a timely manner.

Figure 1: Sample TPZ information sign.

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, as described below:

- 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.

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, as described below:

- Installation of medium-weight non-woven geotextile fabric or landscape cloth over affected area;
- 100 mm of granular clear stone lain 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 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.

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 threefold: 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; 2) to finalize decisions about trees for which removal/preservation decisions are contingent upon the extent of roots encountered, and 3) to enable proper root pruning, as described below.

Unless otherwise specified, root-sensitive excavation typically entails creating a trench approximately 200-300 mm wide between the subject tree (e.g., outside the established TPZ) 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 City of Burlington.

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 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.

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.

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, pruning of broken limbs or exposed roots, tracing of damaged bark or decompaction of soils should be undertaken by an ISA Certified Arborist. Additional remediation actions, such as soil decontamination, may also be required. Stability of trees with significant root zone disturbance should be assessed, and advanced stability assessment or mitigation should be implemented if necessary.

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.
4. New plantings should be inspected in the second year to assess health and condition. Dead or dying plants should be replaced in the next appropriate planting season.

Conclusion

There are 48 trees associated with the proposed development at 2254 Orchard Road, in Burlington, Ontario. The proposed works will require the implementation of specific measures to ensure effective tree protection. 17 unregulated (private) trees are proposed for removal to enable the proposed works.

With the implementation of the recommendations provided in this report, minimal adverse effects are anticipated as a result of the proposed works upon the long-term health and condition of 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 Minimum Tree Protection Zones (MTPZs); 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 1: Inventory of trees at 2254 Orchard Road, Burlington, Ontario. Tree assessments are based upon field observations undertaken on February 4, 2019, by S. Jobber (ISA Certified Arborist ON-1746AM).

Tree	Common Name	Scientific Name	DBH	CW	TI	CS	CV	MTPZ	Loc.	Rec.	Comments
1	Colorado Spruce	*Picea pungens*	26	8	G	G	G	2.4	N	-	
2	Eastern White Cedar	*Thuja occidentalis*	15	3	G	G	G	2.4	N	P	Hedge 48 stems. Average DBH provided.
3	Norway Maple	*Acer platanoides*	50	13	G	F	G	3.0	S	R	
4	Norway Spruce	*Picea abies*	58	11	G	G	G	3.6	S	P	
5	Norway Spruce	*Picea abies*	41	10	G	F	G	3.0	S	R	
6	Manitoba Maple	*Acer negundo*	19	6	G	F	G	2.4	M	P	
7	Manitoba Maple	*Acer negundo*	10	4	G	F	G	1.8	S	P	
8	Ash Species	*Fraxinus* sp.	11	5	G	F	G	2.4	S	P	
9	Eastern White Cedar	*Thuja occidentalis*	13	5	G	F	G	2.4	S	P	
10	Eastern White Cedar	*Thuja occidentalis*	17	5	G	F	G	2.4	S	P	
11	Eastern White Cedar	*Thuja occidentalis*	15	5	G	G	G	2.4	S	R	Hedge 27 stems. Average DBH provided.
12	Manitoba Maple	*Acer negundo*	15	6	F	F	G	2.4	S	R	
13	Norway Maple	*Acer platanoides*	20	6	F	F	G	2.4	S	R	
14	Norway Maple	*Acer platanoides*	17	6	F	F	G	2.4	S	R	
15	Norway Maple	*Acer platanoides*	17	6	F	F	G	2.4	S	R	
16	Norway Maple	*Acer platanoides*	15	6	F	F	G	2.4	S	R	
17	Norway Maple	*Acer platanoides*	12	5	F	G	G	2.4	S	R	
18	White Spruce	*Picea glauca*	26	7	F	G	P	2.4	S	R	
19	White Spruce	*Picea glauca*	30	8	G	F	G	2.4	S	R	
20	White Spruce	*Picea glauca*	36	9	G	G	G	2.4	S	R	
21	Norway Maple	*Acer platanoides*	47	15	G	G	G	3.0	S	R	
22	Norway Maple	*Acer platanoides*	41	15	G	F	G	3.0	S	R	
23	White Spruce	*Picea glauca*	26	6	G	G	G	2.4	S	P	

Tree	Common Name	Scientific Name	DBH	CW	TI	CS	CV	MTPZ	Loc.	Rec.	Comments
24	White Spruce	*Picea glauca*	19	4	G	F	F	2.4	S	P	
25	Norway Spruce	*Picea abies*	33	8	G	G	F	2.4	S	P	
26	White Spruce	*Picea glauca*	35	8	G	G	F	2.4	S	P	
27	White Spruce	*Picea glauca*	27	6	G	G	F	2.4	S	P	
28	White Spruce	*Picea glauca*	13	4	G	G	F	2.4	S	P	
29	White Spruce	*Picea glauca*	28	8	G	G	G	2.4	S	P	
30	White Spruce	*Picea glauca*	28	8	G	F	F	2.4	S	R	
31	White Spruce	*Picea glauca*	38	9	G	G	F	2.4	S	R	
32	White Spruce	*Picea glauca*	24	8	G	G	F	2.4	S	P	
33	White Spruce	*Picea glauca*	28	7	G	G	F	2.4	S	P	
34	White Spruce	*Picea glauca*	31	7	G	F	P	2.4	S	R	
35	Apple Species	*Malus* sp.	21	7	G	G	G	2.4	S	P	
36	Apple Species	*Malus* sp.	33	11	G	F	G	2.4	S	P	
37	Apple Species	*Malus* sp.	42	12	G	F	G	3.0	N	P	
38	White Spruce	*Picea glauca*	35	6	G	F	F	2.4	S	P	
39	White Spruce	*Picea glauca*	35	9	G	G	G	2.4	S	P	
40	Scots Pine	*Pinus sylvestris*	14,14	5	G	F	G	2.4	S	P	
41	White Spruce	*Picea glauca*	18	6	G	G	G	2.4	S	P	
42	Manitoba Maple	*Acer negundo*	17,15,14	9	G	F	G	2.4	S	P	
43	Red Oak	*Quercus rubra*	8	4	G	F	G	1.8	M	P	
44	Red Oak	*Quercus rubra*	12	4	G	F	G	2.4	M	P	
45	Red Oak	*Quercus rubra*	9	4	F	G	G	1.8	M	P	
46	Red Oak	*Quercus rubra*	12	6	G	G	G	2.4	M	P	
47	Honey Locust	*Gleditsia triacanthos*	10	5	G	G	G	1.8	M	P	
48	Honey Locust	*Gleditsia triacanthos*	11	5	G	G	G	2.4	M	P	

Appendix 2 – Selected Figures

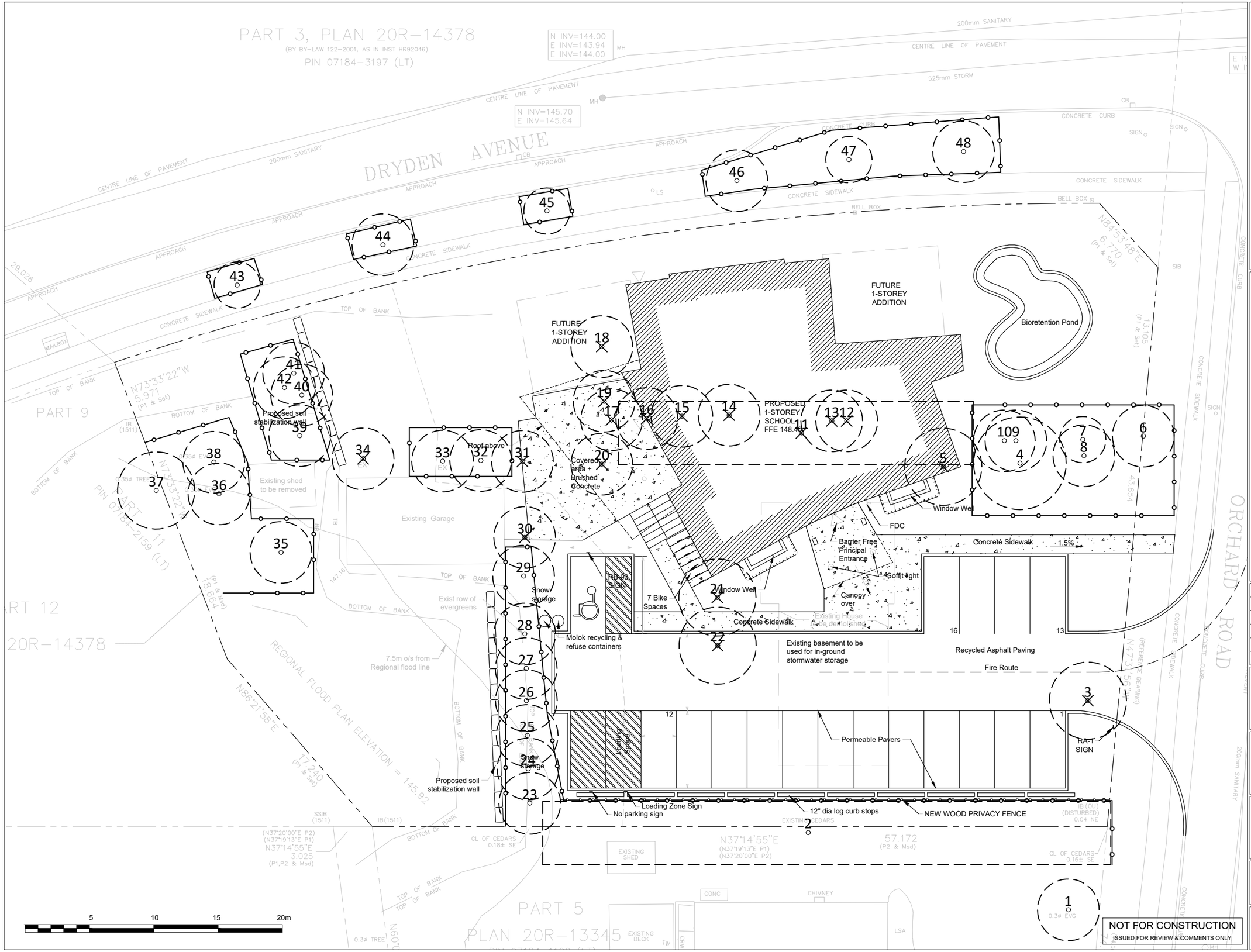
Figure 2: The subject site, 2254 Orchard Road, Burlington. Tree #3 is proposed for removal; tree #4 is proposed for retention.

Figure 3: Tree #5 and tree (cedar hedge) #11 are proposed for removal.

Figure 4: Trees #19, 20, and 31 are proposed for removal.

Figure 5: Trees #21 and 22 are proposed for removal.

Appendix 3 – Tree Protection Plan



LEGEND

- EXISTING TREE TO BE RETAINED
- EXISTING TREE TO BE REMOVED
- TREE PROTECTION ZONE (TPZ)
- TREE HOARDING/FENCING

GENERAL NOTES

1. REFER TO UFI ARBORIST REPORT FOR A FULL INVENTORY OF TREE SPECIES AND REMOVAL REQUIREMENTS.
2. NO GROUNDBREAKING ACTIVITIES OR DEMOLITION SHOULD OCCUR UNTIL ALL TREE PRESERVATION REQUIREMENTS HAVE BEEN MET. OF PRIMARY CONCERN IS THE ESTABLISHMENT OF PROPER HOARDING AT TREE PROTECTION ZONES (TPZ).
3. A UFI CONSULTING ARBORIST SHOULD BE CONSULTED FOR ALL WORK THAT IMPACTS THE TREE PROTECTION ZONE.
4. THE LOCATION OF THE TREE PROTECTION ZONES HAVE BEEN CLEARLY INDICATED ON THE SITE PLAN. FENCING SHALL REMAIN IN PLACE UNTIL ALL SITE WORK HAS BEEN COMPLETED, AND MAY NOT BE REMOVED, RELOCATED, OR OTHERWISE ALTERED WITHOUT THE WRITTEN PERMISSION OF THE CONSULTING ARBORIST.
5. A QUALIFIED ARBORIST WILL UNDERTAKE PROPER ROOT PRUNING WHEN AND IF ROOTS OF RETAINED TREES ARE TO BE EXPOSED, DAMAGED OR SEVERED BY CONSTRUCTION ACTIVITIES. EXPOSED ROOTS WILL BE COVERED WITH SOIL OR MULCH AS SOON AS POSSIBLE TO PREVENT FURTHER DAMAGE AND DESICCATION. ROOT PRUNING PRIOR TO EXCAVATION WILL HELP PREVENT UNNECESSARY DAMAGE TO TREE ROOTS.
6. THE TREE PROTECTION ZONE SHOULD BE POSTED WITH SIGNS. WITHIN THE TREE PROTECTION ZONE THERE WILL BE NO:
   - GRADE CHANGES
   - DUMPING OR STORAGE OF ANY MATERIALS
   - USE OF ANY MACHINERY WITHOUT PRIOR APPROVAL
   - LANDSCAPING WITH HEAVY MACHINERY
   - ACTIVITY OF ANY KIND WITHOUT PERMISSION OF THE CONSULTING ARBORIST
7. EFFORTS SHOULD BE MADE TO ROUTE ALL UNDERGROUND UTILITIES AROUND THE TREE PROTECTION ZONES. IF THIS IS NOT POSSIBLE, THEY SHOULD BE BORED OR TUNNELED UNDER THE ROOT ZONE OF THE TREES (MINIMUM 1.6 M). USING TRADITIONAL TRENCHING METHODS, THERE WILL BE SIGNIFICANT ROOT DAMAGE TO THE TREES THAT ARE BEING PRESERVED. WHERE POSSIBLE IT IS STRONGLY RECOMMENDED THAT ANY INSTALLATION OF UNDERGROUND UTILITIES (WATER, SEWAGE OR HYDRO) SHOULD UTILIZE A NON-DESTRUCTIVE METHODOLOGY SUCH AS DIRECTIONAL BORING, AIRSPADE TECHNOLOGY OR HYDROVAC REMOVAL OF SOIL.
8. IF INJURY SHOULD OCCUR TO RETAINED TREES DURING CONSTRUCTION, THE CONSULTING ARBORIST SHOULD EVALUATE THEM SO THAT APPROPRIATE TREATMENTS CAN BE RECOMMENDED AND PERFORMED.
9. ALL CONTRACTORS SHOULD BE INFORMED OF THE TREE PROTECTION MEASURES AND GUIDELINES AT A PRE-CONSTRUCTION MEETING.
10. MONITORING OF THE TREES AND THE TREE PROTECTION ZONE SHOULD BE CONDUCTED BY THE CONSULTING ARBORIST THROUGHOUT THE DURATION OF THE PROJECT.

No.	DATE	DESCRIPTION	BY:	CHKD.
1	06/02/2019	ISSUED FOR ARBORIST REPORT	SJ	PvW

REVISIONS

PREPARED FOR

green propeller design
336 Bronte Street South, Unit 29
Milton, Ontario L9T 7W6

PREPARED BY

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TITLE

TREE PROTECTION PLAN

144 BALSAM AVENUE, TORONTO, ONTARIO

SCALE: AS INDICATED

DATE: 06/02/2019

SHEET: 1 of 1

NOT FOR CONSTRUCTION
ISSUED FOR REVIEW & COMMENTS ONLY

Limitations of Assessment

It is our policy 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.

Prepared and submitted by:

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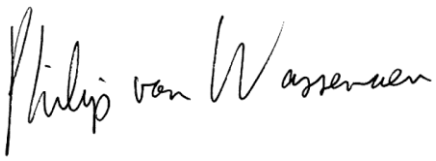
Reviewed by:



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