Welwyn Consulting

February 25, 2015

N. J. Sinclair, Landscape Architect
207 - 2435 Second Street
Burlington, Ontario
CANADA
L7R 1E5

SUBJECT: Arborist Report and Tree Protection Plan
1350 Waterdown Road, Burlington – Fellowship Church

Dear Norm:

Attached please find the Arborist Report and Tree Preservation Plan that I have prepared for the above property. My report includes an evaluation of all municipal and privately-owned trees on or within 6 metres of the subject site's property lines with a diameter at breast height (DBH) of **10cm or greater**. This evaluation includes the DBH, height, canopy spread, health, and structural condition of all trees that may be affected by the currently proposed site plan. My report also provides a Tree Preservation Plan for the property, including the appropriate Tree Protection Zones (TPZ).

This information complies with the following City of Burlington By-Laws required to obtain a Site Alteration Permit:

- *City Of Burlington Tree By-Law No. 19-1975 (repealed)*
- *The City of Burlington Public Tree By-law No.68-2013*
- *City of Burlington Specification #SS12 – Tree Protection and Preservation*

Included in the report are Valuation Appraisals of any City-owned trees as required by the City of Burlington to obtain any necessary tree permits.

This letter is part of the Arborist Report and Tree Preservation Plan and may not be used separately. Please feel free to contact me to discuss this report in detail.

Best regards,

Tom Bradley B.Sc. (Agr.)
A.S.C.A. Registered Consulting Arborist #492
I.S.A. Certified Arborist #ON-1182A
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Welwyn Consulting

Arborist Report and Tree Protection Plan

1350 Waterdown Road, Burlington

Prepared For

N. J. Sinclair, Landscape Architect
207 - 2435 Second Street
Burlington, Ontario
CANADA
L7R 1E5

Prepared By
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Prepared On
February 25, 2015

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Summary

This Arborist Report and Tree Preservation Plan addresses all of the trees with a diameter at breast height (D.B.H.) of 10cm or greater and within 6 metres of the subject site that may be affected by the proposed property development, and provides recommendations for their preservation and/or removal. This report also includes hoarding distances for the Tree Protection Zones (TPZ) and provides recommendations for current and future tree health care.

Based upon the Tree Inventory for this property, there are **32 trees** that may be affected by the proposed site development plan:

- 20 trees on the subject site
- 12 neighbouring trees within 6 metres of the subject site property line
- No shared ownership trees along any subject site property lines
- No City-owned trees within proximity to the subject site

Table 1: Tree Preservation and Removal

TREES TO PRESERVE	**TREE NUMBER**	**TOTAL**
i) Subject Site Trees	5, 6, 7, 8, 9, 10, 11, 12	8
ii) Neighbouring Trees	1, 2, 4, 13, 14, 15, 16, 17, 18, 19, 20	11
iii) City-owned Trees	0	0
	# of Trees to be Preserved	**19**
TREES TO REMOVE	**TREE NUMBER**	**TOTAL**
i) Subject Site Trees	3 (previously removed by neighbour), 21-32 (conflict)	13
ii) Neighbouring Trees	0	0
iii) City-owned Trees	0	0
	# of Trees to be Removed	**13**
	Total Trees on or adjacent to subject site	**32**

Specific tree-related issues on this site:

Please refer to Pages 7, 8, 10 and the photos on Page 22 of this report for information regarding site supervision/root pruning of Trees #5-12 (subject site) and 13-20 (neighbouring trees) during excavation for the proposed parking lot, driveway entrance, and retaining wall foundations adjacent to these trees.

Introduction

This Arborist Report and Tree Protection Plan (T.P.P) provides the current condition of all City-owned trees on municipal property and any subject site or neighbouring trees with a diameter at breast height (DBH) of 10cm or greater within proximity of the subject site which may be impacted by the proposed property development as indicated by the attached site plan in Appendix A. The intent of the Tree Protection Plan is to retain as many trees on the site as is reasonable and minimize the potential impact of construction injury to the trees through the use of Tree Protection Zones (TPZ) and other generally recognized arboricultural practices.

Assignment

I was contacted by N.J. Sinclair Landscape Architect on behalf of the client, **The Fellowship Church**, to provide an Arborist Report and Tree Preservation Plan, as required by the City of Burlington's Tree Protection By-Laws, to minimize the impact that the proposed construction may have on the trees on or adjacent to this property. My report shall list specific trees to be preserved or removed, recommend any immediate maintenance required to create a safer environment for contractors and the property owner, and provide a long-term tree preservation and management plan for the site.

Limits of Assignment

This report is limited to assessing and documenting the health and structural condition of all City-owned trees on municipal property and any subject site or neighbouring trees with a diameter at breast height (DBH) of 10cm or greater within proximity of the subject site which may be impacted by the proposed property development during my site survey on July 14, 2014. My evaluation is based upon a visual inspection of the trees from the ground, and the analysis of photos and any samples taken during that inspection.

Unless specifically stated in the report;

1.) Neither aerial inspections nor root excavations were performed on any trees on site or within 6 metres of the subject site.
2.) A Level 2 "Basic" assessment using the 2011 International Society of Arboriculture (I.S.A.) *Best Management Practices* was used for tree evaluations within this report.

Purpose and Use

The purpose of this report is to document the current health and structural condition of the trees with a D.B.H of 10cm or greater on and within 6 metres of the subject site property, and to provide an Arborist Report and Tree Preservation Plan that complies with the City of Burlington's Tree Protection By-Laws.

This report is intended for the exclusive use of N.J. Sinclair Landscape Architect on behalf of the client, **The Fellowship Church** Upon submission by and payment to Welwyn Consulting, this report will become their property to use at their discretion.

Observations

The proposed development is located in a residential area near the intersection of Old Waterdown Road and Craven Avenue within the City of Burlington. This site is presently an open lot with no buildings or hardscapes. I visited the site on July 14, 2014 to conduct my tree inventory and take photographs of the trees on site, as well as any neighbouring or City-owned trees that may be affected by the proposed site plan.

Photo #1

Photo #2

Figure #1: These 2 photos show the front and back yard of the property at 1350 Waterdown Road as they appeared during the tree inventory conducted on July 14, 2014.

Appendices

Appendix A contains the most current site plan supplied by N.J. Sinclair Landscape Architect which provides the following information:

- The location of the trees on or adjacent to the subject site
- Property lines for the subject site and neighbouring properties
- Property lines for City-owned lands adjacent to the subject site
- All existing buildings and hard surfaces
- An outline of the proposed building

Appendix B contains the Tree Inventory for this site. All trees were assigned numbers, and measured for diameter at breast height (DBH=1.4m), height, and canopy spread. The trees' health and structural condition were evaluated, which provides the basis for their recommended preservation or removal.

Appendix C contains selected photos of trees on this site.

Trees to Preserve (19)

Prior to any work commencing, an on-site meeting should take place with the following people to discuss the Tree Preservation Plan:

- A Consulting Certified Arborist
- A representative from the City of Burlington's Urban Forestry Department
- The property owner(s) and any Architects, Engineers, contractor and/or sub-contractors involved with the project

- **Trees #1, 2 and 4 Spruces and Black Walnut (neighbouring trees)**

  These 3 trees are located on the neighbour's property east of 1350 Waterdown Road and are separated from the subject site by a wooden fence. These trees appear to be outside the scope of the currently proposed site plan and no injury is anticipated.

  These 3 neighbouring trees must be preserved. Full implementation of the Tree Care Recommendations, Tree Preservation Plan and Tree Preservation Guidelines starting on Page 9 of this report should result in the trees' continued survival.

- **Trees #5-12 Black Walnuts (subject site)**

  These 8 trees are located near the eastern property line in the front portion of the property at 1350 Waterdown Road and will be within proximity of the proposed parking lot and retaining wall. These 8 trees shall be protected for the duration of the proposed construction activities on this site.

  These 8 subject site trees shall be preserved. Full implementation of the Tree Care Recommendations, Tree Preservation Plan and Tree Preservation Guidelines starting on Page 9 of this report should result in the trees' continued survival.

  NOTES:

  1.) Excavation for the proposed retaining wall and parking lot foundations has the potential to injure the western root zones of Trees #5-12.

  2.) *A Certified Consulting Arborist shall be on-site during excavation of the proposed parking lot and retaining wall foundations to determine the size and quantity of Trees #5-12's roots that could be affected. Any roots in the immediate area of the excavation shall be assessed and, if feasible and reasonable, properly pruned by the attending Arborist. This action should reduce the potential for root injury caused by the excavating equipment, and provide any pruned roots with the best opportunity to regenerate.*

(Next page)

- **Trees #13-20 Neighbouring trees**

  These 8 trees are located near the eastern property line of the neighbouring property near the rear of 1350 Waterdown Road and will be within proximity to the proposed driveway entrance. These 8 trees shall be protected for the duration of the proposed construction activities on this site.

  These 8 neighbouring trees must be preserved. Full implementation of the Tree Care Recommendations, Tree Preservation Plan and Tree Preservation Guidelines starting on Page 9 of this report should result in the trees' continued survival.

  NOTES:

  1.) Excavation for the proposed retaining wall and driveway entrance foundations has the potential to injure the western root zones of Trees #13-20.

  2.) *A Certified Consulting Arborist shall be on-site during excavation of the proposed driveway entrance and retaining wall foundations to determine the size and quantity of Trees #13-20's roots that could be affected. Any roots in the immediate area of the excavation shall be assessed and, if feasible and reasonable, properly pruned by the attending Arborist. This action should reduce the potential for root injury caused by the excavating equipment, and provide any pruned roots with the best opportunity to regenerate.*

Trees to Remove (13)

Prior to construction, all trees scheduled for removal should be removed to grade in order to increase the safety for both the property owner and any contractors.

- **Trees # 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31 and 32**

  These 12 subject site trees are in conflict with the proposed site plan and should be safely removed to grade level prior to commencing construction activities on this site.

- **Tree #3 Cedar Hedge (subject site)**

  This hedge was removed by the neighbour to accommodate a fence on their property.

Tree Care Recommendations

Cabling

Cabling is a practice which provides physical support for trees with structurally weak limbs, co-dominant stems, any branch or trunk unions with included bark, and tree species generally known to be weak-wooded. An aerial inspection of the tree's structural condition should be performed prior to cable installation, and any dead, diseased, or hazardous wood should be removed. Cabled trees should be inspected annually to assess both the cabling hardware and the tree's structural condition. Cabling reduces but does not eliminate a tree's hazard or failure potential.

- **Trees #10 and 11 (subject site) and 20 (neighbour)**
  Each of these 3 trees should have an approved Dynamic Cabling System installed to help support their co-dominant stems.

Fertilization

Current research conducted through the International Society of Arboriculture (I.S.A.) indicates that preserved trees within close proximity of proposed construction activities should not be fertilized during the 1st year following construction injury. Uptake of nutrients and water in compacted soils can be reduced, and fertilizer salts may actually remove water from a tree's root zone. If and when supplemental fertilization is deemed necessary, products which stimulate root growth should be employed over those that stimulate shoot and foliage growth and be applied at low application rates.

Supplemental fertilization needs should be assessed by a Certified Consulting Arborist upon completion of all on-site construction activities, and any recommendations should be based on site-specific soil nutrient deficiencies determined primarily through soil testing and secondarily by visual analysis of nutrient deficiencies in foliage, twigs, buds, and roots.

Pruning

Pruning is a practice which removes dead, diseased, broken, rubbing, crossing, and hazardous limbs 2.5 cm and larger from trees to create a safer working environment and improve tree health and vigor. Pruning also provides an excellent opportunity for an aerial inspection of the structural integrity of the tree(s). All pruning should be completed prior to any site demolition or construction.

Trees #4 and 17 (neighbour) and 7, 9 and 11 (subject site)

- **Remove large-caliper hazardous deadwood from these 5 trees**

Root Pruning

Root pruning is performed to minimize a tree's potential loss of structural stability through root removal and/or injury due to excavation within close proximity of its root zone. While not always feasible for all projects, root pruning should occur in late autumn during tree dormancy and ideally one full growing season prior to any on-site construction or demolition to allow for root regeneration. Root pruning should be performed by a Certified Arborist in accordance with generally recognized standards and principles within the field of Arboriculture. *Hydro-Vac or Air-Spade technologies provide two of the least invasive methods for root zone excavation, and should be performed under the supervision of a Certified Arborist.*

General Methodology (other than hydro-vac/air spade)

Under the direction of a Certified Consulting Arborist, and using mechanical and/or hand excavation, the soil shall be carefully removed starting approximately 4m perpendicular to the edge of the proposed building foundation area. Digging in a line parallel to the roots rather than across them should minimize cracking of any large roots near the tree's base. The soil shall be removed in layers approximately 1.0m deep to minimize the potential for striking any large roots that may have been close to the soil surface.

- **Trees #5-12 (subject site) and 13-20 (neighbouring trees)**
  A Certified Consulting Arborist shall be on-site during excavation of the proposed parking lot, driveway entrance, and retaining wall foundations to determine the size and quantity of Trees #5-12 and 13-20's roots that could be affected. Any roots in the immediate area of the excavation shall be assessed and, if feasible and reasonable, properly pruned by the attending Arborist. This action should reduce the potential for root injury caused by the excavating equipment, and provide any pruned roots with the best opportunity to regenerate.

Irrigation

An irrigation plan for preserved trees should be designed and implemented with the assistance of a Certified Consulting Arborist. The amount and frequency of irrigation will depend on factors such as soil type, local and seasonal precipitation patterns, duration of droughts, and the amount of construction activity near specific trees. The top 30 cm of soil in a tree's root zone should be kept moist without being saturated. Infrequent deep watering produces trees with deeper roots, while frequent shallow watering produces shallow-rooted trees. *When combined with soil aeration improvement techniques such as vertical mulching, drill holes, and radial trenching, an adequate but not excessive supply of moisture to a tree's root zone can be an effective and efficient way to help alleviate construction injury.*

Preserved trees should be monitored at regular intervals by a Certified Consulting Arborist for signs of drought stress or excess irrigation.

- **An irrigation plan will be developed upon determination of tree injury levels after completion of any required root pruning.**

Mulching

It may be determined by the Certified Consulting Arborist that trees within close proximity of construction activities will require a layer of composted wood chip mulch applied to the root zones inside the TPZ hoarding. Decomposed wood mulch 5–10 cm (2-4 inches) deep applied to a tree's root zone should help to retain soil moisture, regulate soil temperature, and provide a natural organic source of nutrients in their elemental form over time. Piling of mulch against the tree stem should be avoided. Fresh wood chip mulch should be applied to a depth of 20 – 30 cm beneath steel plates or plywood on vehicle and equipment traffic areas within close proximity to the TPZ to distribute weight on the soil and help reduce potential root zone soil compaction.

- **There are no specific mulching requirements at this time.**

Root Zone Aeration Improvements

Aeration improvement techniques such as drill holes, vertical mulching, soil fracturing, and radial trenching have the ability to reduce various degrees of soil compaction by increasing the amount of soil macro and micropores. Any form of root zone aeration improvement should be performed post-construction and under the supervision of a Certified Consulting Arborist to help remediate soil compaction caused by construction activity near preserved trees.

- **There are no root zone aeration improvements required on this site at this time.**

Transplanting

Transplanting of larger caliper trees, through either hand digging or tree spade, allows for relocation and retention of desirable trees that might have otherwise been removed due to conflict with the proposed property construction design. Trees should be tree-spaded out by a reputable operator, and are best transplanted during dormancy in late autumn. No construction activity should take place near re-located trees either before or after transplantation.

Any transplanted trees should be fertilized using a complete fertilizer with a preferred nitrogen/phosphorus/potassium ratio of 1-2-2, with the Nitrogen component in slow release form. A 10 cm layer of composted wood mulch should be applied to the root zone, and the tree should receive regular irrigation for a period of at least one year. The tree may also require staking for a period of 1 year to provide stability while it re-establishes its root system.

- **There are no trees to be transplanted on this site at this time.**

Tree Protection Plan

The following Tree Preservation Plan must be implemented prior to any on-site construction activity.

Hoarding

Hoarding is used to define the **Tree Protection Zone** (TPZ), which protects a tree's root zone, trunk, and branches from injury during both construction and landscaping phases of the project. Hoarding should be installed prior to any construction activity, and remain intact until construction and landscaping is completed. The TPZ should **NOT** be used for the temporary storage of building materials, storage or washing of equipment, or the dumping of construction debris, excess fill, or topsoil.

As required by the City of Burlington, TPZ hoarding should be constructed of 1.2m high orange safety fencing framed with 2x4 lumber and supported by metal T-bars. Page wire fencing shall be used where orange safety fencing creates a site line obstruction. TPZ hoarding should be constructed of 4x8 plywood sheeting supported by metal T-bars if some excavation material or fill has to be temporarily stored near the TPZ. All braces and supports should be outside the TPZ to minimize the potential for root injury.

The architect of record for the project should update the most current site plan/grading plan to include all existing trees properly plotted and numbered, with TPZ hoarding locations clearly indicated.

Hoarding Installation

A diagram of the proposed hoarding plan for this site can be found in Appendix A on Page 17 of this report. The recommended radial distances from the trunk for installation of TPZ hoarding are listed in Appendix B starting on Page 18 of this report, and the hoarding should be installed using the following guidelines:

1) All TPZ hoarding should be placed at the recommended radial distance from the base of all trees to be protected, or up to all existing and/or proposed hard surfaces to allow for construction.

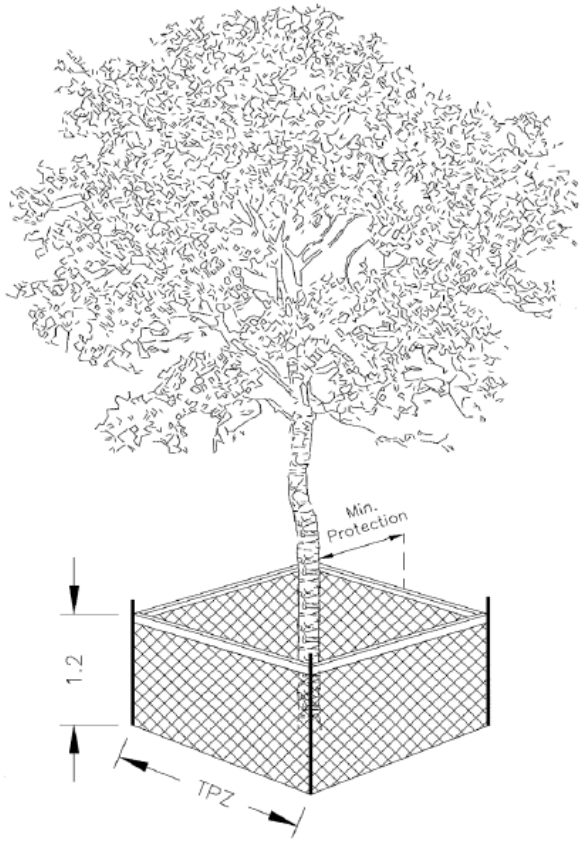
2) Any large numbers of trees that can be grouped together in a closed box or continuous line system for protection should have their TPZ hoarding placed at the recommended radial distance from the base of all of the largest peripheral trees of the system, or up to all existing and/or proposed hard surfaces to allow for construction.

3) Encroachment within a tree's TPZ may require a special permit from the City of Burlington and/or on-site supervision by a Certified Consulting Arborist during any proposed excavation activities for root pruning and assessment.

City of Burlington Hoarding Specifications

The diagram below provides the City of Burlington's standards for Tree Protection Zone (T.P.Z) hoarding.

Tree Protection and Preservation
Specification No.: SS12A



Detail TP-1 – Tree Protection Detail.

Trunk Diameter (DBH) [2]	Minimum Tree Protection Zone (MTPZ) Distances Required [3]	Critical Root Zone (CRZ) Distances Required [3&4]
< 10 cm	1.8 m	1.8 m
11 - 40 cm	2.4 m	4.0 m
41 - 50 cm	3.0 m	5.0 m
51 - 60 cm	3.6 m	6.0 m
61 - 70 cm	4.2 m	7.0 m
71 - 80 cm	4.8 m	8.0 m
81 - 90 cm	5.4 m	9.0 m
91 - 100+ cm	6.0 m	10.0 m

NOTES:

[1] The roots of a tree can extend from the trunk to approximately 2-3 times the distance of the drip line.
[2] Diameter at breast height (DBH) is the measurement of tree trunk taken at 1.4 metres above ground.
[3] Minimum Tree Protection Zone and Critical Root Zone distances are to be measured from the outside edge of the tree base towards the drip line and may be limited by an existing paved surface, provided the existing paved surface remains intact throughout the construction work and is subject to Section 6 of this specification.
[4] Where work is being performed beyond the Minimum Tree Protection Zone but within the Critical Root Zone the works are subject to Section 8 of this specification.

TREE PROTECTION BARRIER

1. The required barrier is a 1.2 metre (4 ft) high orange plastic web snow fencing on 2" x 4" frame. Where orange plastic web snow fencing creates a restriction to sightlines, page wire fencing with reflective tape can be used.
2. Tree protection barriers are to be erected prior to the commencement of any construction or grading activities on the site and are to remain in place throughout the entire duration of the project. The barriers shall be maintained erect and in good repair throughout the duration of construction operations with breaks and unsupported sections repaired immediately. Tree protection may be not be removed prior to the completion of construction without written authorization from the City Arborist.
3. All supports and bracing used to safely secure the barrier should be located outside the MTPZ. All supports and bracing should minimize damage to roots.
4. Where some fill or excavated material must be temporarily located near a MTPZ, a wooden barrier with silt fencing must be used to ensure no material enters the MTPZ.
5. No materials or fill may be stored within the MTPZ.
6. Equipment or vehicles shall not be operated, parked, repaired, or refueled within the MTPZ.
7. No construction activity, grade changes, surface treatment or excavations of any kind is permitted within the MTPZ without written authorization from the City Arborist.
8. A laminated Minimum Tree Protection Zone sign (See Detail TP-3 – Minimum Tree Protection Zone Sign) must be attached to the side of the Tree Protection where it will be visible by persons entering the site. Minimum size must be 10"x14".

Tree Preservation Plan Summary

I.) Pre-Construction Phase

- If necessary, have the Certified Consulting Arborist schedule an on-site meeting with a representative from the City of Burlington's Urban Forestry Department, the property owner(s), and any Architects, Engineers, and contractors involved with the project to discuss the Tree Preservation Plan.
- Complete all Tree Care Recommendations, including pruning and any required tree removals.
- Install Tree Protection Zone (TPZ) hoarding as required.
- Where required, apply composted wood mulch to tree root zones within the TPZ hoarding, and apply fresh wood mulch over steel plates and/or plywood to any high-traffic areas immediately adjacent to the TPZ hoarding to help reduce soil compaction.
- If feasible, root-prune any preserved trees adjacent to excavation areas prior to construction under the supervision of a Certified Consulting Arborist.
- Establish an irrigation plan with the assistance of a Certified Consulting Arborist.

II.) Construction Phase

- Maintain and respect TPZ hoarding throughout the construction phase. Do not store or dump materials in this area.
- Continue irrigation plan as directed by a Certified Consulting Arborist.
- Prune any roots exposed during excavation under the supervision of a Certified Consulting Arborist.
- On-going monitoring by a Certified Consulting Arborist to evaluate construction injury/stress and make recommendations.

III.) Post-Construction Phase

- Remove hoarding only after permission from the City of Burlington.
- Continue irrigation program as directed by a Certified Consulting Arborist.
- Supplemental fertilizer needs assessment by a Certified Consulting Arborist.
- Post-construction monitoring of all trees by a Certified Consulting Arborist.

NOTE:
Post-Construction Monitoring

Construction injury may take several years to become apparent. All preserved trees should be inspected by a Certified Consulting Arborist on a semi-annual basis for a period of up to 2 years to pro-actively address any tree health related issues as they occur.

ASSUMPTIONS AND LIMITING CONDITIONS

Any legal description provided to the consultant/appraiser is assumed to be correct. Any titles and ownerships to any property are assumed to be good and marketable. No responsibility is assumed for matters legal in character. Any and all property is appraised or evaluated as though free and clear, under responsible ownership and competent management. It is assumed that any property is not in violation of any applicable codes, ordinances, statutes, by-laws, or other governmental regulations.

Care has been taken to obtain all information from reliable sources, and all data has been verified insofar as possible. The consultant/appraiser can neither guarantee nor be responsible for the accuracy of information provided by others.

The consultant/appraiser shall not be required to give testimony or to attend court by reason of this report unless subsequent contractual arrangements are made, including payment of an additional fee for such services as described in the fee schedule and contract of engagement.

Loss or alteration of any part of this report invalidates the entire report.

Possession of this report or a copy thereof does not imply right of publication or use for any purpose by anyone other than the person to whom it is addressed without the prior expressed written or verbal consent of the consultant/appraiser.

Neither all nor any part of the contents of this report, nor any copy thereof, shall be conveyed by anyone, including the client, to the public through advertising, public relations, news, sales or other media without the prior expressed written or verbal consent of the consultant/appraiser particularly as to value conclusions, identity of the consultant/appraiser, or any reference to any professional society, institute, or any initialed designation conferred upon the consultant/appraiser as stated in his/her qualification.

This report and the values expressed herein represent the opinion of the consultant/appraiser, and the consultant/appraiser's fee is in no way contingent upon the reporting of a specified value, a stipulated result, the occurrence of a subsequent event, nor upon any finding to be reported.

Sketches, diagrams, graphs, and photographs in this report, being intended as visual aids, are not necessarily to scale and should not be construed as either engineering or architectural reports or surveys.

Unless expressed otherwise: 1) Information contained in this report covers only those items that were examined and reflections the condition of those items at the time of inspection, and 2) the inspection is limited to visual examination of accessible items without dissection, excavation, probing, or coring. There is no warranty or guarantee, expressed or implied, that problems or deficiencies of the plants or property in question may not arise in the future.

CERTIFICATE OF PERFORMANCE

I, Tom Bradley, certify that:

- I have personally inspected the tree(s) and/or the property referred to in this report, and have stated my findings accurately. The extent of any evaluation or appraisal is stated in the attached report and the Limits of Assignment.

- I have no current or prospective interest in the vegetation of the property that is the subject of this report, and have no personal interest or bias with respect to the parties involved.

- The analysis, opinions and conclusions stated herein are my own, and are based on current scientific procedures and facts.

- My compensation is not contingent upon the reporting of a pre-determined conclusion that favours the cause of the client or any other party, or upon the results of the assessment, the attainment of stipulated results, or the occurrence of any subsequent events.

- My analysis, opinions and conclusions were developed and this report has been prepared according to commonly accepted arboricultural practices.

- No one provided significant professional assistance to the consultant, except as indicated within the report.

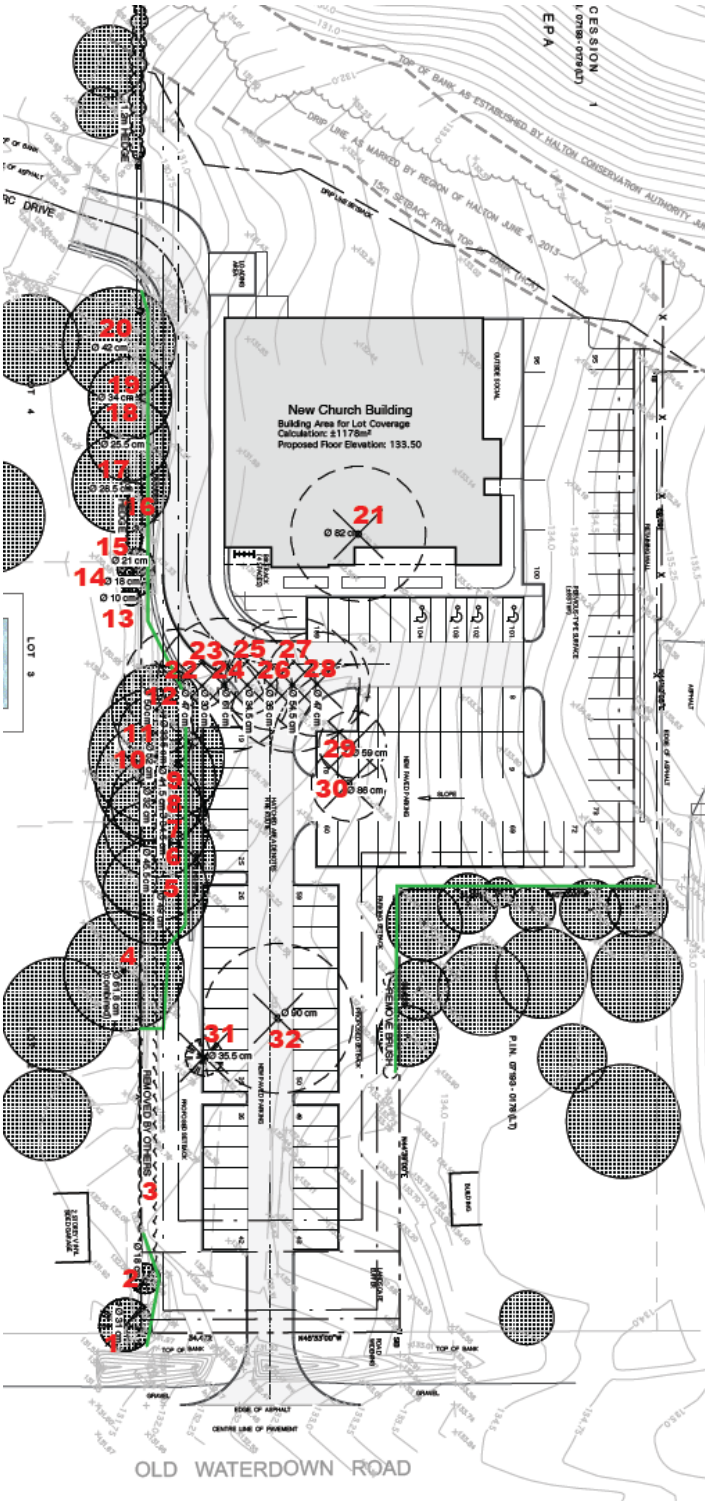
I further certify that I am a Registered Consulting Arborist through the American Society of Consulting Arborists (A.S.C.A) and a Certified Arborist with the International Society of Arboriculture (I.S.A). I have been involved in the fields of Arboriculture and Horticulture in a full-time capacity for a period of more than 20 years.

Signed: 

Date: February 25, 2015

Appendix A: Proposed Site Plan

Note: The proposed Tree Protection Zone (TPZ) hoarding is shown as green lines and is not to scale on this drawing.



Legend:

Solid Hoarding ——— Framed Hoarding - - - - - -

Appendix B: Tree Survey

I.D #	Owner	Tree Species Common Name	Tree Species Botanical Name	DBH (cm)	Height (m)	Canopy (m)	Tree Health	Structural Condition	Comments	Minimum TPZ unless otherwise noted
1	Neighbour	White Spruce	*Picea glauca*	31	10	8	Good	Poor	Small-caliper deadwood in canopy; lower branch clearance pruned 2m; tree was previously topped	Preserve: TPZ = 2.4m
2	Neighbour	Colorado Blue Spruce	*Picea pungens 'Glauca'*	18	7	4	Good	Good	Small-caliper deadwood in canopy; roots exposed by excavation on east side 1m from tree base	Preserve: TPZ = 2.4m
3	Subject	Cedar Hedge	*Thuja occidentalis*	4-12	2	1.2	Good	Good	Removed by neighbour to accommodate their fence	----------
4	Neighbour	Black Walnut	*Juglans nigra*	30.5, 35.5, 45.5 (64)	16	16	Good	Fair	Large-caliper deadwood in canopy; co-dominant stems with included bark union at tree base; tree is 3m from wooden fence separating tree from subject site	Preserve: TPZ = 4.2m
5	Subject Site	Black Walnut	*Juglans nigra*	49	16	15	Good	Good	Large-caliper deadwood in canopy; branch canopy above 4m and shaded on south side	Preserve: TPZ = 3.0m
6	Subject Site	Black Walnut	*Juglans nigra*	45.5	18	16	Good	Good	Small-caliper deadwood in canopy; branch canopy shaded and reduced on north and south sides	Preserve: TPZ = 3.0m
7	Subject Site	Black Walnut	*Juglans nigra*	34.5	18	16	Good	Good	Large-caliper deadwood in canopy; branch canopy above 4m and shaded on north and south sides	Preserve: TPZ = 2.4m
8	Subject Site	Black Walnut	*Juglans nigra*	32	17	14	Good	Fair	Small-caliper deadwood in canopy; co-dominant stems with narrow included bark union 4m from tree base; branch canopy above 3m	Preserve: TPZ = 2.4m
9	Subject Site	Black Walnut	*Juglans nigra*	41.5	17	18	Good	Fair	Large-caliper deadwood in canopy; co-dominant stems with included bark union 8m from tree base; branch canopy above 3m and shaded on north and south sides	Preserve: TPZ = 3.0m
10	Subject Site	Black Walnut	*Juglans nigra*	52	17	20	Good	Fair	Small-caliper deadwood in canopy; co-dominant stems with narrow included bark union 1.8m from tree base; branch canopy above 5m	Preserve: TPZ = 3.6m *Install Dynamic cabling system*

I.D #	Owner	Tree Species Common Name	Tree Species Botanical Name	DBH (cm)	Height (m)	Canopy (m)	Tree Health	Structural Condition	Comments	Minimum TPZ unless otherwise noted
11	Subject Site	Black Walnut	*Juglans nigra*	33.5	17	10	Good	Fair	Large-caliper deadwood in canopy; co-dominant stems with narrow included bark union 2.2m; lower branch canopy shaded and reduced	Preserve: TPZ = 2.4m *Install Dynamic cabling system*
12	Subject Site	Black Walnut	*Juglans nigra*	50	17	12	Good	Fair	Small-caliper deadwood in canopy; co-dominant stems with included bark union 2.5m from tree base; branch canopy shaded and reduced on west and south	Preserve: TPZ = 3.0m
13	Neighbour	Colorado Blue Spruce	*Picea pungens 'Glauca'*	10	4	2.5	Good	Good	Small-caliper deadwood in canopy; branch canopy shaded and reduced on south; tree is 1m from fence separating tree from subject site	Preserve: TPZ = 2.4m
14	Neighbour	Austrian Pine	*Pinus nigra*	18	8	4	Good	Good	Small-caliper deadwood in canopy; branch canopy shaded on south side; tree is 0.6m from fence separating tree from subject site	Preserve: TPZ = 2.4m
15	Neighbour	Austrian Pine	*Pinus nigra*	21	8	5	Good	Good	Small-caliper deadwood in canopy; branch canopy shaded and reduced on north side; Diplodia Tip Blight on 20% of branches; tree is 0.3m from fence separating tree from subject site	Preserve: TPZ = 2.4m
16	Neighbour	White Cedar Hedge (10 plants)	*Thuja occidentalis*	5-11	4	2	Good	Good	Small-caliper deadwood in canopy; lower branch canopies clearance pruned 1.8m from tree base	Preserve: TPZ = 1.8m
17	Neighbour	Black Walnut	*Juglans nigra*	28.5	16	14	Good	Good	Large-caliper deadwood in canopy; branch canopy above 2m	Preserve: TPZ = 2.4m
18	Neighbour	Thornless Honey Locust	*Gleditsia triacanthos var.inermis*	25.5	14	12	Good	Good	Small-caliper deadwood in canopy; co-dominant stems with included bark union 1.8m from tree base; branch canopy above 3m and shaded on south side	Preserve: TPZ = 2.4m
19	Neighbour	Thornless Honey Locust	*Gleditsia triacanthos var.inermis*	34	18	12	Good	Good	Small-caliper deadwood in canopy; co-dominant stems with included bark union 8m from tree base; branch canopy shaded and reduced on south side	Preserve: TPZ = 2.4m

I.D #	Owner	Tree Species Common Name	Tree Species Botanical Name	DBH (cm)	Height (m)	Canopy (m)	Tree Health	Structural Condition	Comments	Minimum TPZ unless otherwise noted
20	Neighbour	Green Ash	*Fraxinus pennsylvanica*	42	18	16	Good	Fair	Small-caliper deadwood and epicormic shoots in canopy; co-dominant stems with narrow included bark union 1.8m from tree base	Preserve: TPZ = 3.0m *Install Dynamic cabling system*
21	Subject Site	Green Ash	*Fraxinus pennsylvanica*	82	18	18	Fair	Fair	Large-caliper deadwood in canopy; co-dominant stems with narrow included bark union 4m from tree base; less than 50% live canopy	Remove: Proposed site plan in conflict with the tree
22	Subject Site	Black Walnut	*Juglans nigra*	47	20	16	Good	Good	Large-caliper deadwood in canopy; branch canopy shaded on north and west sides	Remove: Proposed site plan in conflict with the tree
23	Subject Site	Black Walnut	*Juglans nigra*	30	20	6	Good	Good	Large-caliper deadwood in canopy; branch canopy above 13m	Remove: Proposed site plan in conflict with the tree
24	Subject Site	Black Walnut	*Juglans nigra*	61	20	20	Good	Fair	Large-caliper deadwood in canopy; co-dominant stems with included bark union 1.8m from tree base; branch canopy shaded and reduced on west and east sides	Remove: Proposed site plan in conflict with the tree
25	Subject Site	Black Walnut	*Juglans nigra*	34.5	20	8	Good	Fair	Large-caliper deadwood in canopy; co-dominant stems with narrow included bark union 8m from tree base; lower branch canopy shaded and reduced	Remove: Proposed site plan in conflict with the tree
26	Subject Site	Black Walnut	*Juglans nigra*	36	24	12	Good	Good	Large-caliper deadwood in canopy; branch canopy above 14m	Remove: Proposed site plan in conflict with the tree
27	Subject Site	Black Walnut	*Juglans nigra*	54.5	24	20	Good	Fair	Small-caliper deadwood in canopy ; co-dominant stems with included bark union 8m from tree base; branch canopy above 4m	Remove: Proposed site plan in conflict with the tree
28	Subject Site	Black Walnut	*Juglans nigra*	47	19	14	Good	Good	Large-caliper deadwood in canopy; branch canopy shaded on east and begins above 5m	Remove: Proposed site plan in conflict with the tree
29	Subject Site	Silver Maple	*Acer saccharinum*	59	12	9	Fair	Poor	Large-caliper deadwood in canopy; decayed stem with epicormic shoots	Remove: Proposed site plan in conflict with the tree

I.D #	Owner	Tree Species Common Name	Tree Species Botanical Name	DBH (cm)	Height (m)	Canopy (m)	Tree Health	Structural Condition	Comments	Minimum TPZ unless otherwise noted
30	Subject Site	Silver Maple	*Acer saccharinum*	86	12	10	Fair	Poor	Large-caliper deadwood in canopy; co-dominant stems with included bark union 1.8m from tree base with decay in eastern stem	Remove: Proposed site plan in conflict with the tree
31	Subject Site	Eastern Redcedar	*Juniperus virginiana*	14, 16, 27 (34)	13	9	Good	Poor	Small-caliper deadwood in canopy; co-dominant stems with narrow included bark union 1.8m from tree base with Buckthorn shrub at base	Remove: Proposed site plan in conflict with the tree
32	Subject Site	Silver Maple	*Acer saccharinum*	50	20	21	Good	Fair	Large-caliper deadwood in canopy; co-dominant stems with narrow included bark union 1.8m from tree base; branch canopy above 4m	Remove: Proposed site plan in conflict with the tree

Appendix C: Site Photos

Photo #3

Photo #4

Figure #2:
The above photos provide the following information:

- Photo #3 shows Trees #13-20 (neighbouring trees) near the eastern property line in the rear of 1350 Waterdown Road, Burlington
- Photo #4 shows the existing roadway to be extended to serve as an entrance/driveway to the property and running parallel to the western side of Trees #13-20 (neighbouring trees)

A Certified Consulting Arborist shall be on-site during excavation of the proposed driveway and retaining wall foundations to determine the size and quantity of Trees #13-20's roots that could be affected. Any roots in the immediate area of the excavation shall be assessed and, if feasible and reasonable, properly pruned by the attending Arborist. This action should reduce the potential for root injury caused by the excavating equipment, and provide any pruned roots with the best opportunity to regenerate.

Please refer to Pages 8 and 10 of this report for further information.