521-525 ESSA ROAD RESIDENTIAL DEVELOPMENT

TREE INVENTORY, ANALYSIS AND PRESERVATION REPORT

LOTS 10, 11 & 12 REGISTERED PLAN 1080 in the,
GEOGRAPHIC TOWNSHIP of INNISFIL, now
CITY OF BARRIE, ONTARIO

COUNTY OF SIMCOE

AUGUST, 2017
REVISED MARCH 2018

OUR FILE: LA 265.10-17

PREPARED BY:

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1.0 Scope/Assignment:

The Landmark Environmental Group Ltd. (LEGroup) (Jim Hosick, OALA, ISA Arborist # 1098A) was retained by Mr. Sam Reitano and Mr. Bryan Toteda (Encore Development Group) to provide Consulting Arboricultural services to lands generally in the area north of Essa Road and Mapleton Avenue in the City of Barrie.

The assignment is to prepare a Tree Inventory, Analysis and Preservation Plan & Report to support the application to the City of Barrie of a Zoning amendment for a proposed Townhouse development as described below. LEGroup was requested to create a tree inventory, assessment and preservation report to assess the existing trees on the subject site and indicate those trees that can be preserved and the methods for protecting the same. Further, those trees that cannot be preserved either by poor or declining health, structural deficiencies or to facilitate the proposed development on the site, are indicated to be removed.

Specifically, LEG was assigned to provide the following services:

- Review site data including survey and concept drawings, to provide for a site visit and correspond with City staff as applicable;

- Provide a Tree Inventory Report visually assessing and identifying the type, location, size and quality of any trees on site within the developable area and area conditions;

- Indicate on an Arborist Plan, those trees that are suitable for preservation or removal, providing the methods of protecting the same and indicate the location of any hazard trees;

It is the intent in the undertaking of this Report, to comply with the City of Barrie Private Tree By-law 2014-115 and City tree preservation policies.

2.0 Proposed Development:

The subject site is located at 521 & 525 Essa Road, legally described as Lots 10, 11 & 12 on Registered Plan 1080 in the, geographic Township of Innisfil, now in the City of Barrie, Ontario. The site is over .45 ha in area and the proposed development at the site is for a 48 unit residential development in four (4) buildings (see **Appendix A**-Concept Site Plan).

The subject lots are currently being used as single-family residences. The adjacent land uses existing at the site boundaries are as follows: bounded on the west by single family and semi-detached residential units (Leslie Ave), bounded on the north by a senior's residence/Long Term Care facility parking area (Roberta Place); bounded on the east by Essa Road and residential development beyond and bounded on the south by a commercial development (Holly Auto Service).

The limits of the Arborist study were confined to the area within the lot boundaries and those trees immediately adjacent to the subject site that may be affected as a result of the proposed development.

This Tree Inventory, Analysis and Preservation Report is submitted in support of and intended to accompany a zoning amendment application for the redevelopment of the site as noted above.

Below, is an air photo showing the location of the subject site (lines delineate the site boundaries):

Figure 1 Airphoto of Subject Site (Boundary Highlighted) and Surrounding Area (City of Barrie GIS)

3.0 Method:

A summary of inventory, observations and assessments that were determined in the field can be found in **Appendix C** at the end of this Report.

The tree assessments were identified in accordance with the detailed typical criteria used in best arboricultural practices to indicate the merits of tree preservation including the species (Latin and common names), size diameter at breast height (dbh), maturity, biological health, structural concerns (if any), condition rating and recommendations for preservation or removal of the existing specimen trees.

Condition ratings applied to overall tree assessments using the above-noted criteria range from 1 (poor) to 5 (excellent). Typically, those trees being assessed a condition rating of 1-3 are recommended for removal while those trees being assessed a condition rating of 4-5 are recommended for preservation unless there are extenuating circumstances regarding the development of the site. The criterion is also applied to assist in assessment of their potential for survival in-situ post-construction.

For the purposes of this Report, only those trees over 10cm dbh were captured. No shrubs or low understory perennials were captured in the data.

Each tree was assigned a key number (1-49) and observations relating to each tree were tabulated in the Tree Inventory (**Appendix C**). Each tree is also located on a Tree Inventory and Preservation Map corresponding to the number assigned and can be seen in the Tree Inventory, Assessment and Preservation Plan as shown in **Appendix B**.

4.0 Observations

On July 24-25, 2017, LEGroup staff (J. Hosick) who is a licensed Landscape Architect (OALA), a qualified Arborist (ISA) and ISA TRAQ (tree risk assessment) qualified, visited the subject site with the intent to provide an inventory and assessment of individual tree species present within the subject site including a

Level 1 Risk Assessment. LEGroup staff also made a cursory review of existing trees exterior to the subject property to visually assess the quality of the vegetation.

LEGroup staff noted that the site grade was relatively flat with the exception of a swale located on the west side of the common boundary line at 521 Essa Road which services the residential subdivision to the west. Some of the trees (#43-49) inventoried in this Report are located on the upslope of the swale but located on the subject property.

The following woody plant species were observed on the subject site during fieldwork:

Latin name	Common Name	% of Total Trees
Acer platanoides	Norway Maple	1/49= 2%
Betula papyrifera	Paper Birch	2/49=4.1%
Picea glauca	White Spruce	7/49=14.3%
Picea pungens 'Glauca'	Colorado Blue Spruce	33/49=67.3%
Pinus nigra	Austrian Pine	2/49=4.1%
Rhamnus cathartica	Common Buckthorn	2/49=4.1%
Thuja occidentalis	Eastern White Cedar	(1 + 1 group) 2/49= 4.1%

Table 1 List of Observed Woody Plant Species on the Subject Site

A total of 49 trees were observed at a DBH (diameter breast height) of equal to or greater than 10cm on the subject site and are recorded in **Appendix C**.

The majority of these trees are Colorado Blue Spruce (*Picea pungens 'Glauca'*) and White Spruce (*Picea glauca*) which are located along the mid-line between the two parcels of the subject site and along the rear of 521 Essa Road (**see Photos A, B, C, D, H, I, J & K in Appendix D**). These trees appear to be over 40 years of age, are in marginal to poor health and are considered to be at the end of their useful life. Many of the branches of the conifers along the Essa Road frontage to mid-lot have been pruned to a height of approximately six (6) feet and continue to discharge sap (suspected Sirrococcus) (**see Photo L, Appendix D**). The conifers at the rear of the site have extensive lower branch dieback (suspected Diplodia tip blight) and provide minimal live branch buffering between the subject property and the homes fronting Leslie Avenue (**see Photo J, Appendix D**). Trees # 47-49 have been infected with Riverbank Grape (*Vitus riparia*) a vine that uses host trees to support its growth and has caused considerable weakening of the tree and branch dieback.

The remaining trees on the more southerly portion of the 525 Essa Road site are ornamental landscape trees including Norway Maple (*Acer platanoides*), Paper Birch (*Betula papyrifera*) and Eastern White Cedar (*Thuja occidentalis*) the latter grouped as a hedge form. These trees are in fair condition. The Common Buckthorn (*Rhamnus cathartica*) is a nurtured 'fly-in' shrub which has reached a tree form however, is not considered to be of intrinsic value. The Austrian Pine appears in poor condition due to insufficient light.

LEGroup staff (J. Hosick) subsequently met with City of Barrie staff (C. Maher) and Innovative Planning Solutions Inc. (R. MacFarland) on January 31, 2018 at the 521-525 Essa Road site to further discuss tree and cedar hedge preservation concerns. It was agreed that the root preservation zone on the development side of the cedar hedge is to be 1.5 metres. It was further agreed that Tree No. 48 (Colorado Blue Spruce) were observed to be in poor health and together with one dead Colorado Blue Spruce were expected to be removed. The status of the remaining trees along the west boundary are further discussed below.

<u>Boundary Trees</u>

In addition to the assessment of the on-site trees noted above, LEGroup staff reviewed trees adjacent to the boundaries to see whether there would be potential impacts to the development lands or whether the development could potentially impact the boundary trees exterior to the site.

The following tree species were observed immediately adjacent to the subject lands:

Latin Name	Common Name	Overhang Dripline
Catalpa ssp	Northern Catalpa	N/A
Picea pungens glauca	Colorado Blue Spruce	1.0m
Picea omorika	Serbian Spruce	N/A
Populus balsamifera (2)	Balsam Poplar	2.0m & 3.0m
Quercus rubra (4)	Red Oak	2.0m each
Thuja occidentalis	Eastern White Cedar	Under .5m

Table 2 List of Observed Woody Plant Species on Adjacent Lands.

Notably, most of the species observed in the Table above (Serbian Spruce, Cedar hedge and Red Oak), occur on the Roberta Place premises to the north in compliance with the site plan approval for that site (**see Photos G & H, Appendix D**). Two (2) trees (Balsam Poplar) were observed in the adjacent rear yards of the Leslie Avenue that affected the subject site. Only the Northern Catalpa and Colorado Blue Spruce were located in the Holly Auto Service lands to the south; the Catalpa was in poor condition and did not reach across over the fenceline of the subject site; the Colorado Blue Spruce appeared to be in marginal condition and crossed over the fenceline by approximately 1.0 m.

No Butternut (*Juglans cinerea*) was observed on the subject parcels during the on-site review in accordance with the requirements of the *Endangered Species Act, 2007*.

5.0 Study Criteria

Tree observations were recorded individually, as set out in the Tree Inventory and Assessment Table (**Appendix C**), in accordance with the criteria established by common arboricultural practice including:

- ✓ Latin/Common Name of tree;
- ✓ Size (mm cal);
- ✓ Condition/Comments; and
- ✓ Recommendation for Preservation or Removal

Tree locations are on the Tree Inventory and Preservation Plan were recorded and adjusted however, the locations are approximate as shown on Drawing ARB-1 in **Appendix B**.

6.0 Analysis and Recommendations

The following analysis criteria were generally applied to measure the merits of tree preservation:

- Species (including native & non-native)
- Size/Maturity
- Mechanical Structure
- Health of the trees inventoried;
- Location on the subject site;
- Areas of proposed development.

These criteria were applied to the tree assessments to determine the extent of preservation and removal. In addition, the criteria is applied to assist in assessment of their potential for survival in-situ post construction.

We note that there are thirty-three (33) Colorado Blue Spruce (*Picea pungens 'Glauca'*) (Tree Nos. 1, 3-22, 24-32, 47-49), recorded that are over 10cm dbh on the subject site that are described above. Trees No. 1, 3-22, 24-31 are recommended for removal to accommodate the development. While Tree No. 32 is outside of the new build footprint per se, due to its declining health and shallow root system characteristic of Spruces, it is questionable whether there is an ability for this tree to withstand site construction within its root zone. Further, the proposed retaining structure required for this development is suspected to encroach into its root zone. Therefore, we are of the opinion that due to the reasons stated above, Tree No. 32 is not suitable for retention and recommend its removal. We would also recommend that oversized conifers be installed to replace Tree No. 32 to reinforce the vegetative buffer as a sustainable solution.

Further, Colorado Blue Spruce Tree No. 48 has also shown symptoms of accelerated poor health with symptoms including tip dieback, weakened/browning needles, bark blister and root girdle. Its deteriorating health is concerning so as to suspect compromise in its ability to withstand a storm event (eg ice storm) and would recommend that this tree is not a candidate for retention. However, despite health concerns, we would recommend that Tree No. 47 be retained, protected during construction and monitored for ongoing health and mechanical strength. Lastly, we recommend that oversized conifers be installed to replace the removed Colorado Spruce to reinforce the vegetative buffer as a sustainable solution.

There are seven (7) White Spruce (*Picea glauca*) recorded that are over 10cm dbh on the site (2, 23, 35, 43-46) that are described above. Trees No. 2 and 23 are recommended to be removed to accommodate development. Tree No. 35 at the rear of 521 Essa Road is observed to be in marginal condition adjacent to a proposed driveway feature however, is recommended for retention and protection in order to provide vegetative buffering along the fenceline of the existing boundary homes. White Spruce Trees No. 43, 45 and 46 are showing signs of accelerated deteriorating health with symptoms including weakened/browning needles, tip and interior branch dieback, root girdling and sap bleed. Their deteriorating health is concerning so as to suspect compromise in their ability to withstand a storm event (eg ice storm) and are recommended to be removed. However, we would recommend that Tree No. 44 be retained, protected during construction and monitored for ongoing health and mechanical strength. As noted above, we recommend that oversized conifers be installed to compensate for the recommended removal of Tree Nos. 43, 45 and 46 to enhance the vegetative buffer between the subject site and existing residences.

Two (2) Paper Birch trees (*Betula papyrifera*) (Tree No. 37 & 38) are located along the west property line and are recorded to be in fair condition. We recommend that these trees be retained and protected.

A massing of trees and mature shrubs along the west boundary that are comprised of two (2) Austrian pines (*Pinus nigra*) (Trees No. 33 & 39), Eastern White Cedar (*Thuja occidentalis*) (Tree No. 34) and two Buckthorn (*Rhamnus cathartica*) (Trees No. 36 & 40) are deemed to be in marginal to poor condition and are recommended to be removed.

There is one Norway Maple (*Acer platanoides*) (Tree No. 41) in the rear-centre of 525 Essa Road that is recorded to be in fair condition however, given its location on the site, is recommended for removal.

The Eastern White Cedar hedge (*Thuja occidentalis*) along the south property line (Tree No. 42) was installed as a visual buffer between the commercial and residential use of the subject property. The hedge is recorded as being in fair condition and is recommended to be retained and protected. However, the hedge is also recommended to be trimmed to maintain branch density and its continued suitability as a vegetative buffer.

It is also recommended that off-site boundary trees as discussed above, where they cross over the subject site are to be protected with preservation fencing in locations as shown in **ARB-1 in Appendix B** in accordance with the City of Barrie Tree Preservation Detail BSD-1232 (**see D-1 in Appendix B**). Further,

we recommend that the single dead tree at the rear of 521 Essa Rd is to be removed and any trees that are retained should be pruned to remove dying/dead branching that represent a potential injury.

In addition, in our assignment, we were asked to provide the location of any hazard trees. In response, we conducted a Level 1 Risk Assessment (Limited Visual) noting any obvious tree defects. Although we note that no trees observed represents a high likelihood of failure and there appears to be no history of failure on adjacent coniferous trees, however, a continued decline of health of the trees adjacent to residential uses in our opinion, represents an increasing risk. As such, we recommend that trees that are retained be subject to ongoing health and structural monitoring at an interval of no less than three years. We also recommend that a Level 2 Risk Assessment (Basic Assessment) be undertaken on trees that are retained on the subject site.

In summary, for reasons noted above, the following are the recommendations contained in this Report:

1. Removal of Tree Nos. 1-31 to accommodate the proposed development;
2. Preservation and protection of Tree Nos. 37, 38, 42 hedge, 44, 47, 49 using tree preservation fencing at the driplines. The trees to be protected are indicated on **Plans ARB-1** in **Appendix B**;
3. Removal of Tree Nos. 32-36, 39, 40, 41, 43, 45, 46, 48 due to unsuitability for retention;
4. Provide oversized conifers to compensate and enhance buffering along the common rear boundary where trees are recommended for removal;
5. Protect the Tree Preservation Zone for those boundary trees exterior to the site at the outer limits of their dripline;
6. Remove the existing dead conifer at the rear of 521/525 Essa Road and remove dead/dying branching of conifers to be retained that represent a potential injury;
7. That trees retained be monitored for ongoing health and mechanical strength on an inspection interval of no less than three years;
8. That a Level 2 Risk Assessment be undertaken on those trees retained along the common west boundary.

Alternatively, in the event that there is disagreement by the municipal authority regarding our recommendations noted above, we propose that any trees retained on the subject site be subject to Recommendations 7 and 8 and closely monitored.

7.0 Arborist's Declaration

It is the policy of Landmark Environmental Group Ltd to attach the following clause regarding the limitations:

The Consulting Arborist's visual assessment and recommendations, made in this Report, have been completed based on accepted arboricultural practices and represents a fair and accurate assessment of the number, type, size and condition of trees on the subject property. Such visual assessments of all tree components could include scars, bark damage, external decay, insect infestations, discoloured foliage, crown dieback, an excessive degree of lean from the vertical and above-ground root defects. In addition, environmental conditions, which could affect overall health of the trees such as damaging maintenance practices, have also been taken into consideration where appropriate. However, no tree was dissected, cored or rooting systems assessed through excavation.

I hereby certify that I, James Hosick have:

- Personally performed a visual inspection of the trees and property referred to in this Report and have stated my findings accurately in accordance with accepted arboricultural practices without personal interest or bias;

- No current or prospective interest in the property that is the subject of this Report and have no personal interest or bias with respect to the parties involved;

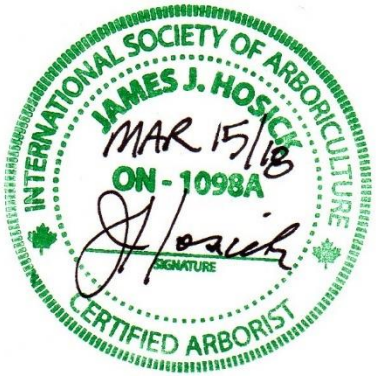
- That my analysis, opinions and conclusions stated are my own and based on commonly accepted arboricultural practices;

- That my compensation is not contingent on the reporting of a predetermined conclusion that favours the client; and

- That I am a member in good standing with the International Society of Arboriculture (ISA), the International Society of Consulting Arborists (ASCA) and the Ontario Association of Landscape Architects (OALA).

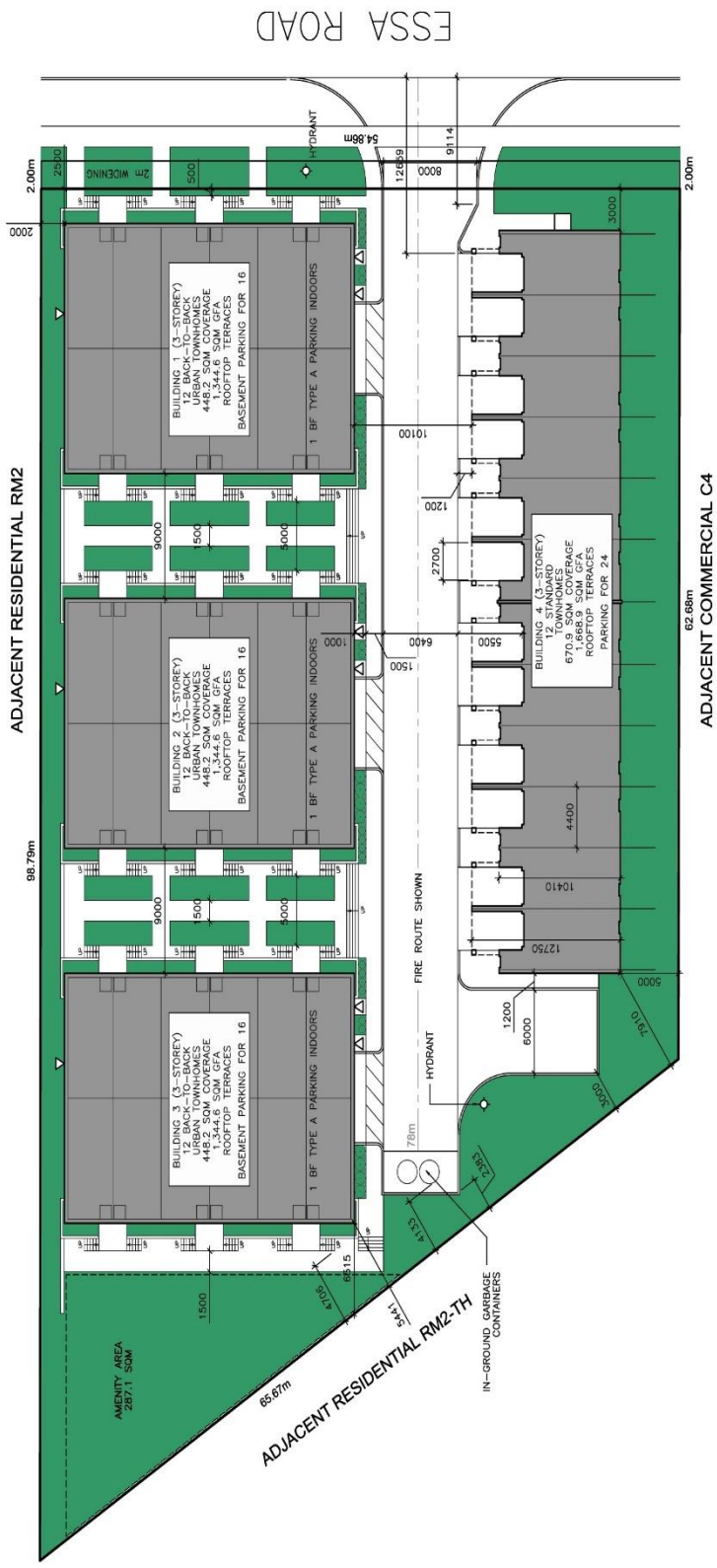
I trust the above-noted recommendations are of assistance. If there are any questions regarding the 521-525 Essa Road Development Tree Inventory, Analysis and Preservation Report, please do not hesitate to contact our Firm at (705) 717-8484.

Prepared by,

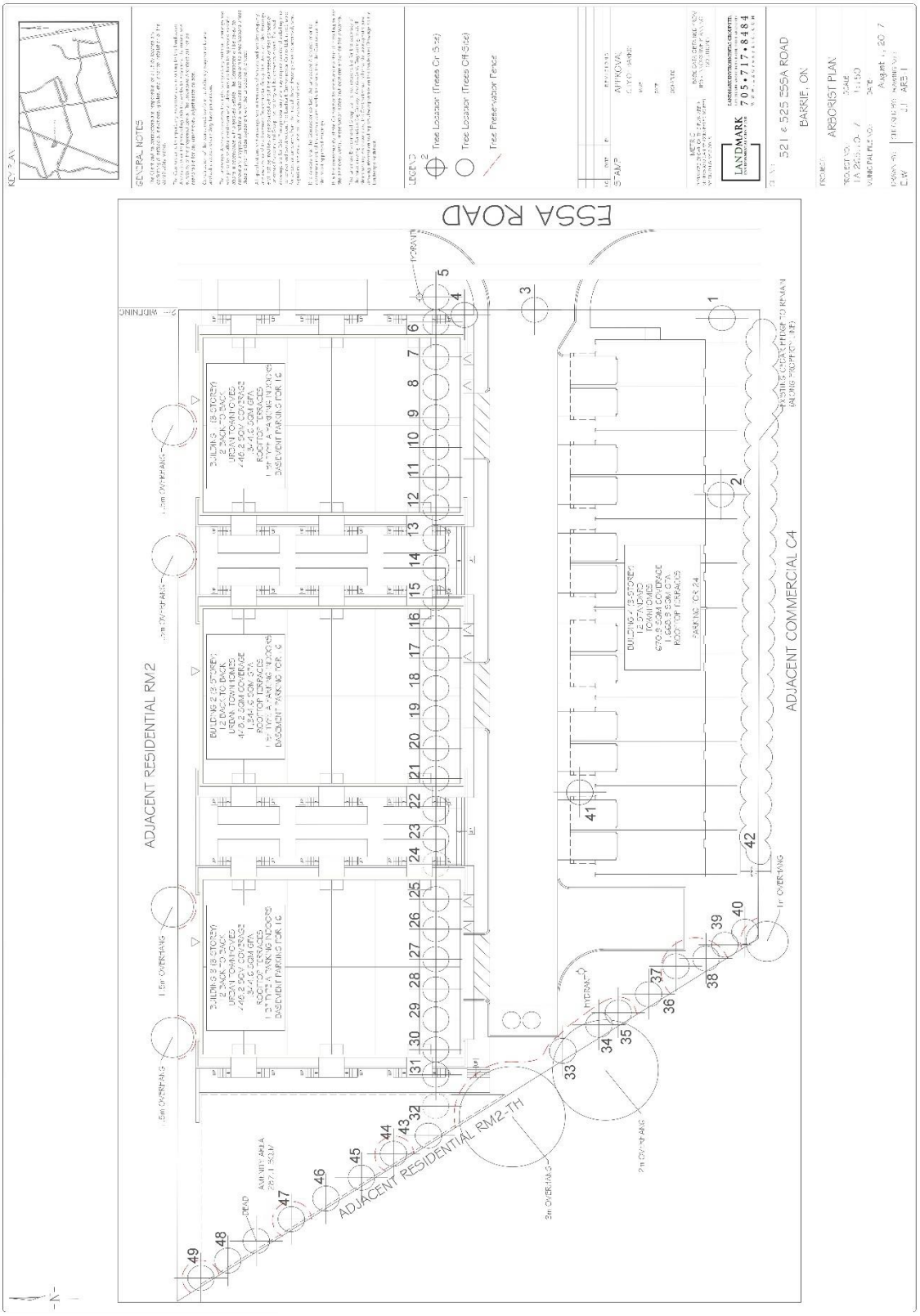


Jim Hosick, OALA, ISA
Landscape Architect-Principal,
ISA Certified Arborist No. 1098-A
MNR Butternut Health Assessor # 451
ISA TRAQ Risk Qualified
Member, American Society of Consulting Arborists
Landmark Environmental Group Ltd.

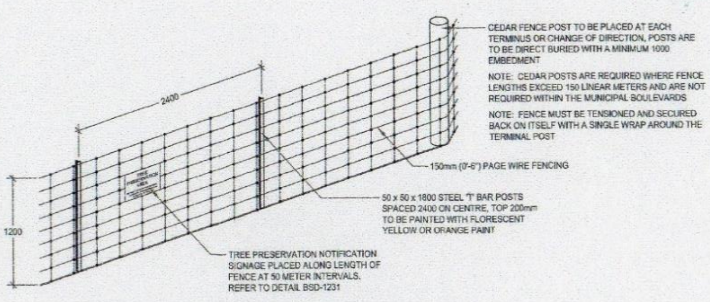
Appendix A: Concept Site Plan for 521 & 525 Essa Road



Appendix B: Tree Inventory, Assessment and Preservation Plan (ARB-1, ARB-2, D-1)



KEY PLAN
GENERAL NOTES
LEGEND
Tree Location (Trees On Site)
Tree Location (Trees Off Site)
Tree Preservation Fence
ISSUED
APPROVAL
CITY OF BARRIE
LANDMARK
521 & 525 ESSA ROAD
BARRIE, ON
PROJECT: ARBORIST PLAN
SCALE: 1:150
DATE: August 1, 2017
DRAWING NO: L-1
ARB-2
ESSA ROAD
ADJACENT RESIDENTIAL RM2-TH
ADJACENT COMMERCIAL
ADJACENT RESIDENTIAL RM2-TH
BUILDING 2 (5-STOREY)
12 STACKED TOWNHOUSES
UNDERGROUND PARKING FOR 16
BUILDING 3 (5-STOREY)
12 STACKED TOWNHOUSES
UNDERGROUND PARKING FOR 16
BUILDING 4 (3-STOREY)
12 STACKED TOWNHOUSES
UNDERGROUND PARKING FOR 16
BUILDING 1 (3-STOREY)
12 STACKED TOWNHOUSES
UNDERGROUND PARKING FOR 16
BUILDING 4 (3 STOREY)
12 STACKED TOWNHOUSES
UNDERGROUND PARKING FOR 24



1. THIS DETAIL IS USED IN CONJUNCTION WITH BSD-1233 -SEDIMENTATION CONTROL FENCE.
2. PAGE WIRE FENCE TO BE ATTACHED TO CEDAR RAIL POSTS WITH 'U' SHAPED GALVANIZED NAILS ON EACH HORIZONTAL STRAND.
3. USE A MINIMUM OF FOUR (4) 100MM, 16 GAUGE GALVANIZED T-POST CLIPS TO ATTACH PAGE WIRE FENCE TO EACH 'T' BAR POST.
4. 'T' BARS ARE TO BE DRIVEN INTO THE GROUND TO A MINIMUM DEPTH OF 600mm.
5. ALL MEASUREMENTS ARE IN MILLIMETRES UNLESS OTHERWISE NOTED.
6. THIS DETAIL TO BE USED IN CONJUNCTION WITH BSD-1230, BSD-1231, BSD-1234 AND BSD-1235.

The City of BARRIE STANDARD DETAIL	TREE PRESERVATION FENCING	REV No. 1	DATE: JUNE 2015 / SCALE: N.T.S.	APPROVED
		BSD-1232		DATE .... / .... DIRECTOR OF ENGINEERING

TREE PRESERVATION NOTES

1. THE INTENT OF THE TREE PRESERVATION PLAN IS TO PROVIDE PROTECTION AND PRESERVATION FOR EXISTING TREES ON THE SUBJECT PROPERTY. THEREFORE, ALL TREES ARE TO BE PRESERVED UNLESS OTHERWISE INDICATED IN THE PLAN OR THE ARBORIST'S REPORT. CONTACT THE LANDSCAPE ARCHITECT TO CONFIRM THE REMOVAL/RETENTION STATUS OF ANY TREES ON SITE, PRIOR TO CLEARING AND GRUBBING. THE OWNER WILL TAKE EVERY PRECAUTION TO PROTECT AND PRESERVE THE TREES APPROVED TO BE RETAINED IN ACCORDANCE WITH THE APPROVED PLANS.

2. PRIOR TO THE COMMENCEMENT OF ANY CLEARING, GRUBBING OR CONSTRUCTION WORKS, THE REQUIRED HOARDING WILL BE ERECTED 5M OUTSIDE OF THE OUTERMOST DRIPLINE OF ANY TREE TO BE RETAINED, IN ACCORDANCE WITH THE HOARDING DETAIL, AND TO THE SATISFACTION OF THE LANDSCAPE ARCHITECT. ERECTION OF ANY PROTECTION FENCING LESS THAN 5M SHALL BE UNDER THE DIRECTION OF THE LANDSCAPE ARCHITECT.

3. NO STORAGE OF EQUIPMENT OR VEHICLES, NOR ANY STOCKPILING OF MATERIAL IS TO OCCUR WITHIN THE AREA OF PRESERVATION/PROTECTION. TREES SLATED FOR PROTECTION WILL NOT BE USED FOR RIGGING OR WRAPPING. THE PROTECTION/PRESERVATION AREA SHALL NOT BE USED TO EMPTY CONTAMINANTS, REFUELING OR REPAIR OF VEHICLES OR EQUIPMENT.

4. TREES LOCATED ON THE IMMEDIATE EDGE OF THE CONSTRUCTION WORKS ARE TO BE PRUNED IN THE INTEREST OF SAFETY, IN ACCORDANCE WITH APPROVED ARBORICULTURAL PRACTICES.

5. TREE LOCATIONS ARE APPROXIMATE AND THEREFORE VERIFICATION ON SITE IS REQUIRED.

6. SHOULD A TREE REQUIRED TO BE PROTECTED BECOME DAMAGED OR REMOVED WITHOUT WRITTEN PERMISSION OF THE CITY OF BARRIE OR THE LANDSCAPE ARCHITECT, THE CONTRACTOR OR OWNER WILL BE RESPONSIBLE FOR REPLACEMENT OF THE TREE OF EQUAL CALIPER AND ACCEPTABLE TREE SPECIES AT THE DISCRETION AND SATISFACTION OF THE LANDSCAPE ARCHITECT.

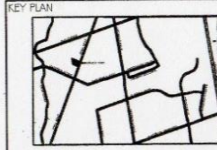
7. THE WORK COMPLETED BY THE CONTRACTOR WILL NOT CAUSE OR EXACERBATE FLOODING CONDITIONS OR CAUSE SEDIMENT BUILDUP OVER THE ROOTZONE OF PROTECTED TREES. NO GRADING SHALL TAKE PLACE WITHIN THE TREE PRESERVATION AREA UNLESS OTHERWISE APPROVED BY THE LANDSCAPE ARCHITECT.

8. ANY REQUIRED LIMB TRIMMING SHALL BE UNDER THE DIRECT SUPERVISION OF THE LANDSCAPE ARCHITECT OR A QUALIFIED ARBORIST.

9. PRESERVATION FENCING TO BE INSTALLED IN ACCORDANCE WITH THE APPROVED DETAIL. FILTER FABRIC TO BE INSTALLED IN CONJUNCTION WITH THE APPROVED ENGINEERING DRAWINGS.

10. HOARDING/TREE PRESERVATION MAY BE COMPLETED IN CONJUNCTION WITH SEDIMENTATION CONTROL.

KEY PLAN



GENERAL NOTES

The Client and its contractors are responsible for all utility locates and confirming all setbacks, elevations, grades, etc. prior to installation of the constructed works.

The Contractor is to report any discrepancies in writing to the Landscape Architect prior to proceeding with the works to determine the impact and suitability of the proposed works. The Landscape Architect will not be responsible for any unapproved adjustments on site.

Construction of the works must conform to Authority requirements and applicable codes where they have jurisdiction.

The Landscape Architect reserves the right to reject any material, plantings and sod prior to or after installation which does not conform to approved specifications in accordance with approved details. The Contractor will be asked to remove any unapproved material which does not conform to specifications unless there is prior written agreement with the Landscape Architect.

All specifications and drawings are instruments of service and are the property and ownership of the Landmark Environmental Group Ltd. As such, the drawings shall not be modified or reproduced without the expressed written consent of Landmark Environmental Group Ltd. or they will be considered void. The said drawings are for Site Plan approval only and may require additional detailing prior to tender and construction. The Landmark Environmental Group Ltd. is not liable for errors or omissions from the use of these drawings prior to approval, seal, signature and date, and will be considered void.

It is advised that the Contractor contact the Landscape Architect prior to commencement of the construction works to ensure that the Contractor has the latest approved drawings.

It is the responsibility of the Contractor to erect and maintain all hoarding as per the approved detail, preservation notes and locations shown on the drawings.

The Landmark Environmental Group Ltd. is not responsible for the accuracy of the base drawing information (eg Survey, Architectural, Engineering, etc). If there are any discrepancies, the Contractor will refer to the appropriate base drawing information and report discrepancies on the Landscape Drawings to the Landscape Architect.

LEGEND

NO.	DATE	BY	REVISIONS

STAMP	APPROVAL CITY OF BARRIE NAME ______ DATE ______ SIGNATURE ______
METRIC DISTANCES SHOWN ON THIS PLAN ARE IN METRES AND CAN BE CONVERTED TO FEET BY DIVIDING BY 0.3048	BASE DATA OBTAINED FROM: IPS - INNOVATIVE PLANNING SOLUTIONS
LANDMARK	705•717•8484

CLIENT: 521 & 525 ESSA ROAD, BARRIE, ON

PROJECT: DETAILS

PROJECT NO.: LA 265.10-17	SCALE: N.T.S
MUNICIPAL FILE NO.:	DATE: August 1, 2017
DRAWN BY: JH/ew	DRAWING No.: D-1

Appendix C: Tree Inventory and Assessment Table

Key	Latin Name	Common Name	Size (dbh)	Rating	Comments	Recommendation
1	Picea pungens glauca	Colorado Blue Spruce	64	2 Marginal	lower branch dieback, great top growth, leans, girdling roots, sap bleed	Remove for development
2	Picea glauca	White Spruce	37	3 Fair	surface roots, triple leader, interior branch dieback, some bleed,	Remove for development
3	Picea pungens glauca	Colorado Blue Spruce	49.3	3 Fair	internal branch dieback, good vigor, some sap bleed	Remove for development
4	Picea pungens glauca	Colorado Blue Spruce	40	2 Marginal	significant sap bleed, interior branch dieback	Remove for development
5	Picea pungens glauca	Colorado Blue Spruce	27.4	2 Marginal	interior branch dieback, small crown	Remove for development
6	Picea pungens glauca	Colorado Blue Spruce	41.9	2 Marginal	root flare, interior branch dieback	Remove for development
7	Picea pungens glauca	Colorado Blue Spruce	38.7	2 Marginal	root flare, interior branch dieback	Remove for development
8	Picea pungens glauca	Colorado Blue Spruce	30.3	2 Marginal	root flare, interior branch dieback	Remove for development
9	Picea pungens glauca	Colorado Blue Spruce	32.8	2 Marginal	fruiting body, sap bleed, interior branch dieback	Remove for development
10	Picea pungens glauca	Colorado Blue Spruce	36.5	2 Marginal	root flare, interior branch dieback	Remove for development
11	Picea pungens glauca	Colorado Blue Spruce	43.7	2 Marginal	trunk bulge-suspected interior decay, sap bleed, interior branch dieback	Remove for development
12	Picea pungens glauca	Colorado Blue Spruce	38.4	2 Marginal	root flare, interior branch dieback	Remove for development
13	Picea pungens glauca	Colorado Blue Spruce	29.5	2 Marginal	root flare, interior branch dieback	Remove for development
14	Picea pungens glauca	Colorado Blue Spruce	38.7	2 Marginal	root flare, interior branch dieback	Remove for development
15	Picea pungens glauca	Colorado Blue Spruce	32	2 Marginal	root flare, interior branch dieback	Remove for development
16	Picea pungens glauca	Colorado Blue Spruce	38.8	2 Marginal	suspected interior decay, sap bleed, post footing in trunk, lower branch dieback	Remove for development
17	Picea pungens glauca	Colorado Blue Spruce	41.1	2 Marginal	suspected interior decay, sap bleed, post footing in trunk, lower branch dieback	Remove for development
18	Picea pungens glauca	Colorado Blue Spruce	40	2 Marginal	multiple leader, sap bleed, interior branch dieback	Remove for development

Key	Latin Name	Common Name	Size (dbh)	Rating	Comments	Recommendation
19	Picea pungens glauca	Colorado Blue Spruce	25.4	2 Marginal	exposed root flares, interior branch dieback	Remove for development
20	Picea pungens glauca	Colorado Blue Spruce	33.3	2 Marginal	post in trunk flare, sap bleed, interior branch dieback	Remove for development
21	Picea pungens glauca	Colorado Blue Spruce	35.6	2 Marginal	sap bleed, exposed root flares, interior branch dieback	Remove for development
22	Picea pungens glauca	Colorado Blue Spruce	37.2	2 Marginal	post in trunk flare, sap bleed, interior branch dieback	Remove for development
23	Picea glauca	White Spruce	31.8	1 poor	sap bleed, root girdling, suspected interior decay, exposed root flares, interior branch dieback	Remove for development
24	Picea pungens glauca	Colorado Blue Spruce	30.3	2 Marginal	exposed root flares, sap bleed, branch dieback	Remove for development
25	Picea pungens glauca	Colorado Blue Spruce	35.7	2 Marginal	post in trunk, sap bleed	Remove for development
26	Picea pungens glauca	Colorado Blue Spruce	27.2	2 Marginal	exposed root flares, sap bleed, branch dieback	Remove for development
27	Picea pungens glauca	Colorado Blue Spruce	37.5	2 Marginal	sap bleed, post in trunk, surface roots, lower branch dieback	Remove for development
28	Picea pungens glauca	Colorado Blue Spruce	37.5	2 Marginal	root girdling	Remove for development
29	Picea pungens glauca	Colorado Blue Spruce	45.5	2 Marginal	sap bleed, exposed root flares, post footing in trunk, interior branch dieback	Remove for development
30	Picea pungens glauca	Colorado Blue Spruce	32.7	2 Marginal	sap bleed, suspected interior decay, post footing in trunk, interior branch dieback	Remove for development
31	Picea pungens glauca	Colorado Blue Spruce	30.5	2 Marginal	sap bleed, interior branching dieback	Remove for development
32	Picea pungens glauca	Colorado Blue Spruce	39.7	2 Marginal	sap bleed, interior branching dieback	Remove for development
33	Pinus nigra	Austrian Pine	12.5	1 poor	boundary tree, twisted trunk, mugo pine, no leader	Remove for health
34	Thuja occidentalis	Eastern White Cedar	28	2 Marginal	y-trunk, boundary tree, riverbank grape	Preserve

Key	Latin Name	Common Name	Size (dbh)	Rating	Comments	Recommendation
35	Picea glauca	White Spruce	18.8	2 Marginal	corrected lean, boundary tree, exposed root flares, interior branch dieback	Preserve
36	Rhamnus cathartica	Common Buckthorn	17.7	1 poor	buckthorn, bark split, bark abrasion, cavity, boundary tree	Remove for health
37	Betula papyrifera	Paper Birch	32.3	3 Fair	boundary tree, corrected lean	Preserve
38	Betula papyrifera	Paper Birch	28.5	3 Fair	boundary tree, corrected lean	Preserve
39	Pinus nigra	Austrian Pine	14.4	1 poor	adventitious trunk, dead dieback branches,	Remove for health
40	Rhamnus cathartica	Common Buckthorn	16.2	2 Marginal	Shrub that has been nurtured to tree form	Remove for health
41	Acer platanoides	Norway Maple	55.5	3 Fair	root girdling, suspected interior decay	Remove for development
42	Thuja occidentalis	Eastern White Cedar		3 Fair	6' cedar hedge, good condition, needs trimming	Preserve
43	Picea glauca	White Spruce	39.5	2 Marginal	Weak/browning needles, tip dieback, 2m radius TPZ, interior branch dieback, 2 fence posts + debris at base	Remove for health
44	Picea glauca	White Spruce	44.7	2 Marginal	root girdling, sap bleed, interior branch dieback, tip dieback, boundary tree within subject lot	Preserve
45	Picea glauca	White Spruce	35.2	2 Marginal	sap bleed, significant root gird branch dieback, weak/browning needles, black soot fungus, debris piled at roots, boundary tree within subject lot	Remove for health
46	Picea glauca	White Spruce	35	2 Marginal	riverbank grape, sparse interior needles, interior branch dieback, weak/browning needles, tip dieback, boundary tree within subject lot	Remove for health
47	Picea pungens glauca	Colorado Blue Spruce	55.0 est	2 Marginal	significant sap bleed, no pruning, soot fungus, Virginia creeper, tip dieback, boundary tree within subject lot	Preserve
48	Picea pungens glauca	Colorado Blue Spruce	33.3	2 Marginal	root girdling, bark blister, interior branch dieback, former riverbank grape, weak/browning needles, boundary tree within subject lot	Remove for health
49	Picea pungens glauca	Colorado Blue Spruce	54	2 Marginal	root girdling, interior branch dieback, boundary tree within subject lot	Preserve

Appendix D: Selected Site Photos

Photo A-Tree Nos. 3-10 Colorado Blue Spruce (*Picea pungens 'Glauca'*) recommended for removal.

Photo B-Trees Nos. 21-28 Colorado Blue Spruce/White Spruce recommended for removal.

Photo C-Boundary Trees Nos. 33-36 at the rear of 525 Essa Road.

Photo D-Boundary Trees Nos. 36-42 at the rear/west side of 525 Essa Road.

Photo E-Tree No. 42 Eastern White Cedar (*Thuja occidentalis*) along the south property line (subject site).

Photo F-No. 42 Eastern White Cedar (*Thuja occidentalis*) along the south property line (commercial side).

Photo G-Looking east along the north fenceline showing adjacent boundary trees to be protected.

Photo H-Looking west at 521 Essa Road-offsite boundary trees (Red Oak *Quercus rubra*) from Roberta Place that cross over the boundary by approximately 2.0 m.

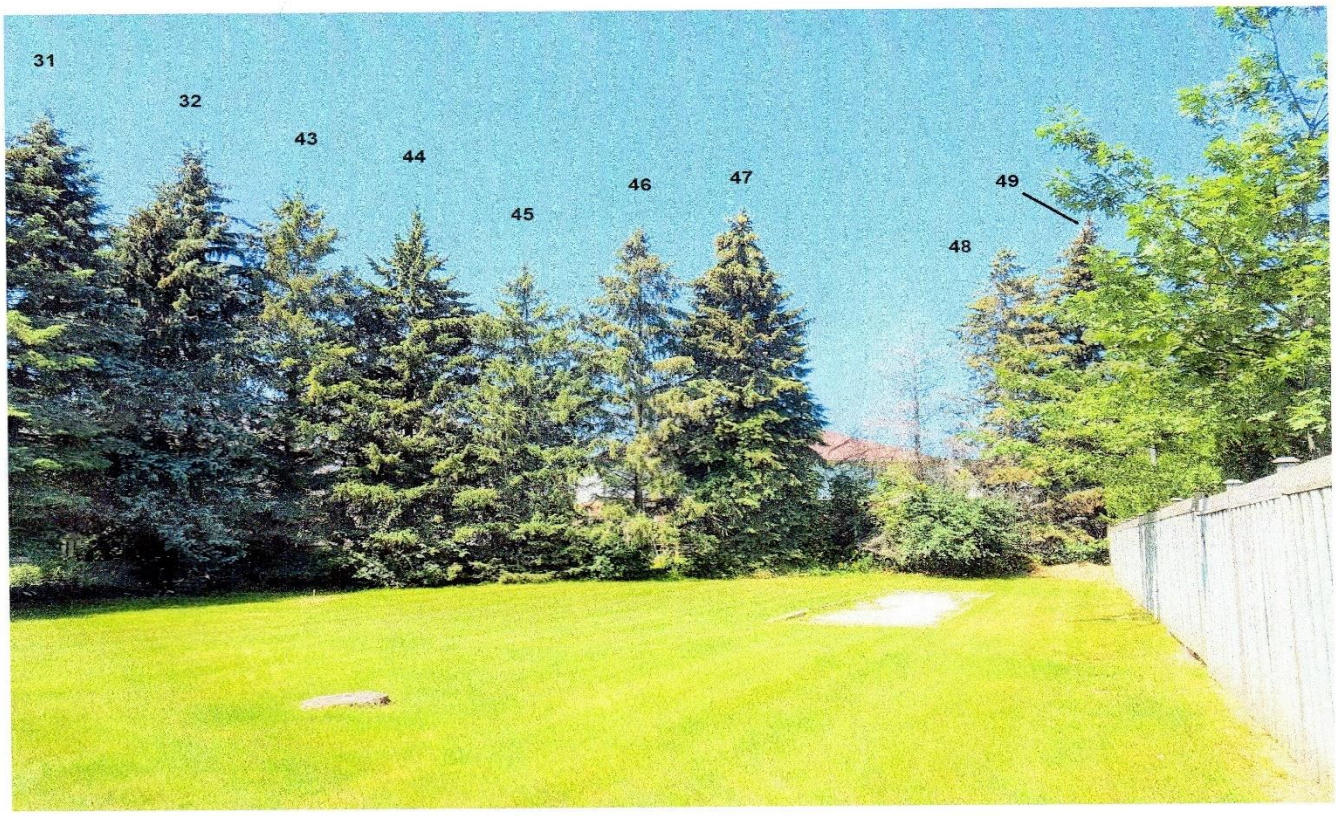


Photo I-Looking west at 521 Essa Rd -Tree Nos. 31, 32, 43-49 White Spruce and Colorado Blue Spruce

Photo J-Tree Nos. 43-46 White Spruce (*Picea glauca*) showing interior dieback

Photo K: Tree No. 43 White Spruce (*Picea glauca*) showing needle browning and tip dieback (typical).

Photo L: - White Spruce (*Picea glauca*) showing sap bleed at the base of an unpruned branch.