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October 7, 2020

M-J-J-J Developments Inc.
C/O Maurizio Rogato
57 Simpson Road,
Bolton, ON
L7E 4J7

Re: Arborist Report and Tree Preservation Plan for 76 Bryne Drive, City of Barrie, Ontario (Palmer #2004501)

1. Introduction

Palmer was retained by M-J-J-J Developments Inc. to complete this Arborist Report and Tree Preservation Plan for the proposed development of a new mixed commercial and residential building and associated parking area. The Subject Property is located at 76 Bryne Drive, City of Barrie, Ontario (**Figure 1**).

The Subject Property is 0.79 hectares (ha), surrounded by commercial developments to the north and east. It is adjacent to a forest to the west, regulated by the Lake Simcoe Region Conservation Authority (LSRCA), being an area associated with an adjacent watercourse and valley system. Successional forest and a naturalized plantation are found to the south.

This report includes a review of relevant tree preservation policies, the tree inventory methods and results, a tree preservation plan identifying trees proposed to be retained and recommended tree protection measures, as well as the tree replacement recommendations for trees proposed to be removed. Recommendations for construction methods are also detailed, as they pertain to trees.

2. Relevant Policy

2.1 City of Barrie

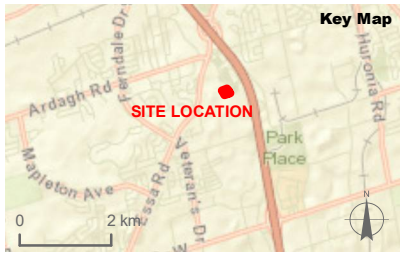
2.1.1 Official Plan (2018)

The purpose of the City of Barrie Official Plan (OP) is to "*provide guidance for consideration of land use changes, the provision of public works, actions of local boards, municipal initiatives, and the actions of private enterprise*". Section 3.5.2 of the City's OP states that it will support tree planting and tree preservation in order to maintain and enhance vegetative cover. As depicted on the OP's *Natural Heritage Resources* (*Schedule B*) map, the Subject Property is adjacent to Level 2 woodlands, designated as significant components of the Nature Heritage Resource network and defined as greater than 4 ha and less than 10 ha.

LEGEND:

Subject Property

Imagery (2018) provided by Simcoe County WMS



0 10 20 30 40

metres

PROJECT NO.	2004501	REVISION:	1
DATE:	Oct 07, 2020	SCALE:	1:1000
DRAWN:	CV	DATUM:	NAD 1983
CHECKED:	MV	PROJECTION:	UTM zone 17

CLIENT:
M-J-J-J Developments Inc

PREPARED BY:
[redacted]

PROJECT:
76 Bryne Drive EIS & Arborist Report

TITLE:
Site Location

Figure 1

Document Path: G:\Shared drives\Projects 2020\20045 - M-J-J Developments Inc\2004501 - 76 Bryne Drive EIS & Arborist Report\Mapping\Figures\5_ArcGIS\2004501_1-1_Site Location.mxd

2.1.2 Tree Preservation By-Law (No.2014-115)

The purpose of the City's *Tree Preservation By-Law* is to "*prohibit or regulate the injuring or destruction of trees on private property in the City of Barrie*". This by-law applies to all trees situated on City property as well as trees in private property found within an ecological woodlot of at least 0.2 ha (1/2 acre). The boundary of the woodland is defined by its ecological limit and not by private property boundaries.

Under Section 5(d and e), the unavoidable injury or destruction of trees necessitated by works under an approved site plan by the City are exempt from the By-Law. This Arborist Report and Tree Preservation Plan has been prepared in accordance to this policy in support of a municipal Site Plan application.

2.1.3 Tree Protection Manual (2010)

The *Tree Protection Manual* describes the process of obtaining approval to remove trees in a development area within the City of Barrie. A tree inventory, assessment, and preservation plant must be prepared, as part of the pre-submission of the application. Step-by-step explanations are provided on how to assess and determine preservation of trees and what standard mitigation measures should be employed during construction.

2.2 Migratory Birds Convention Act

The *Migratory Birds Convention Act* (MBCA), 1994 and Migratory Birds Regulations (MBR), 2014 protect most species of migratory birds and their nests and eggs anywhere they are found in Canada. General prohibitions under the MBCA and MBR protect migratory birds, their nests, and eggs, and prohibit the deposition of harmful substances in waters/areas frequented by them. The MBR includes an additional prohibition against incidental take, which is the inadvertent harming or destruction of birds, nests or eggs.

3. Methods

The tree inventory was completed by an International Society of Arboriculture (ISA) Certified Arborist on July 28, 2020. A tree inventory was completed for all woody perennial plants which have reached or can reach a height of at least 1.5 metres (m) at physiological maturity, as defined in Barrie's *Tree Protection Manual*, within and adjacent of the Subject Property. Where necessary, Palmer also identified Tree Groups. Information collected during the inventory included species name, tree tag number, diameter at breast height (DBH), percentage of dead branches, a general health assessment (structure and vigour), dripline, crown class, and notes on tree trunk and canopy conditions.

4. Results

4.1 Tree Inventory

The tree inventory included a total of 64 individuals and six groupings (comprised of approximately 195 individuals, the majority having DBH's smaller than 5 cm) (**Figure 2**). The majority of the inventoried trees were native species (87%) (**Table 1**). Among the individual trees, Black Walnut (*Juglans nigra*) was the dominant tree species, followed by Manitoba Maple (*Acer negundo*). Among the tree groups, Meadow Willow (*Salix petiolaris*) was the dominant species (approximately 110 individuals), followed by Trembling Aspen (*Populus tremuloides*) (approximately 81 individuals). There were no Species at Risk (SAR) trees observed. The full tree inventory is provided in **Appendix A**.

Table 1. Summary of Tree Inventory Results

Scientific Name	Common Name	No. of Individual Trees	Approx. No. of Trees in Groups	Total
Acer negundo	Manitoba Maple	14	4	18
Acer saccharum	Sugar Maple	6		6
Fagus grandifolia	American Beech	2		2
Fraxinus americana	White Ash	2		2
Juglans nigra	Black Walnut	17		17
Ostrya virginiana	Ironwood	1		1
Picea pungens	Blue Spruce	4		4
Populus balsamifera	Balsam Poplar	1		1
Populus tremuloides	Trembling Aspen	2	81	83
Prunus serotina	Black Cherry	2		2
Prunus virginiana	Chokecherry	1		1
Quercus rubra	Northern Red Oak	5		5
Salix petiolaris	Meadow Willow		110	110
Tilia americana	Basswood	4		4
Tilia cordata	Little-leaved Linden	3		3
Total no. of inventoried trees (including approx. no. of trees within groups)				**259**

General Notes

• This tree protection plan is designed to work in concert with the tree evaluation report for the project.

• All tree protection barriers shall be in place and approved by the City prior to construction access.

• Tree protection barriers shall remain in place and in good conditions until all construction is complete and approved by the City.

• All arboriculture work such as pruning of branches and roots, shall be done by a qualified tree worker certified with the international society of arboriculture by the City.

Tree Protection and Fencing

All existing trees which are to remain shall be fully protected with fencing erected around the entire perimeter of the tree protection zone in accordance with table 1 (City of Barrie's "Tree Protection Manual"). Groups of trees and other existing plantings to be protected, shall be done in a like manner with fencing around the entire clump(s).

• Protective fencing shall be installed in accordance with the specifications provided in "Appendix 2: City of Barrie Standard Specificaitons" from the City's Tree Protection Manual (2010).

• All supports and stakes shall be outside the tree protection z one and shall minimize root damage.

• Areas within the protective fencing shall remain undisturbed and shall not be u sed for the storage of building materials or equipment.

• This work shall be completed, to the satisfaction of the commissioner of development services, prior to the issuance of building perm its for the site development. The developer or his/her agent shall take every precaution necessary to prevent damage to trees or shrubs to be retained.

• No rigging cables shall be wrapped around or installed in trees; and surplus soil, equipment, debris or materials shall not be placed over root systems of the trees within the protective fencing. No contaminants will be dumped or flushed where feeder roots of trees exist.

• Where root systems of protected trees are exposed directly adjacent to or damaged by construction work, they shall be trimmed nearly by a qualified arborist and the area back filled with appropriate material to prevent desiccation.

• If grades around trees to be preserved are likely to change, the developer shall be required to take such precaution as dry welling and root feeding to the satisfaction of the commissioner of development services.

• An ISA Certified Arborist shall be on site for any work which prevents any tree or tree protection zone.

• Tree protection zones are to include signs (as per below) installed on all sides of protective barrier. Signs shall be of the following dimensions: 28 cm x 43 cm

Tree Preservation Area sign template
Note to Owner: This sign to be 11 inches high by 17 inches long and posted at 50 metre intervals along tree preservation fencing, as per the Tree Removal Permit.

TREE PRESERVATION AREA

NO UNAUTHORIZED TREE CUTTING PERMITTED IN THIS AREA

Tree Pruning

• Where limbs or portions of trees are removed to accommodate construction work, they will be carefully removed by an ISA Certified Arborist.

• If any damage occurs to trees, including broken limbs, damage to roots, or wounds to the main trunk, it must be reported to the consulting arborist immediately so that mitigation measures can be promptly implemented.

Tree Removal

• Trees are to be felled into the construction area to reduce the potential for injury/damage to protected areas.

• Trees to be preserved that have died or have been damaged beyond repair, shall be subject to suitable compensation as determined by the City of Barrie and review of the tree inventory and analysis.

• To avoid interference with the eggs, nests or young of birds protected under the federal Migratory Birds Convention Act (government of Canada, 1994), removals should not occur from April 1 to August 1 of any given year. Should removal be required within the April 1 to August 1 breeding period, a qualified avian biologist should conduct a thorough survey immediately prior to the desired tree removal date to confirm presence or absence of protected species. If protected species are present, removal cannot occur without a perm it from the Canadian Wildlife Service.

• No branches or brush from clearing is to be stored on the site. Cutting, brush and chipping cleanup are to be completed outside of the migratory bird nesting season.

CLIENT:
M-J-J-J Developments Inc

PREPARED BY:
Palmer™

0 10 20
metres

N

PROJECT: 76 Bryne Drive EIS & Arborist Report

PROJECT NO.	2004501	REVISION:	1
DATE:	Oct 07, 2020	SCALE:	1:500
DRAWN:	CV	DATUM:	NAD 1983
CHECKED:	ED	PROJECTION:	UTM zone 17

LEGEND:
- Tree to Retain *(w/TPZ)*
- Tree Potentially Injured *(w/TPZ)*
- Tree to Remove *(w/TPZ)*
- Dripline
- Tree Grouping to Retain
- Tree Grouping to Remove
- Tree Protection Fencing
- Subject Property

Tree Inventory and Preservation Plan

Figure 2

Document Path: G:\Shared drives\Projects 2020\20045 - M-J-J-J Developments Inc\2004501 - 76 Bryne Drive EIS & Arborist Report\Mapping\Figures\5_ArcGIS\2004501_2-2_Tree Inventory and Preservation.mxd

Imagery (2018) provided by Simcoe County WMS

4.2 Trees to be Retained

Among the individually inventoried trees, a total of 45 trees are proposed to be retained (**Table 2**), most of which are native and in good to fair condition. Tree Groups 4 to 6, and approximately half of Tree Group 3 are also proposed to be retained, comprising of approximately 55 small trees with DBHs ranging from 3 to 20 cm. Most of these individual trees and groups are located adjacent to the forested areas on the western and southern limits of the Subject Property (**Figure 2**). All street trees along Bryne Drive will also be retained. With proper installation and adherence to tree protection fencing (Section 5), no impacts are predicted for these trees.

Table 2. Trees Proposed to be Retained

Trees/Groups	Common Name	Scientific Name	Good to Fair Health	Poor Health	Total Count
Individual Trees	American Beech	*Fagus grandifolia*	0	2	2
	Basswood	*Tilia americana*	2	2	4
	Black Cherry	*Prunus serotine*	2	0	2
	Black Walnut	*Juglans nigra*	9	0	8
	Blue Spruce	*Picea pungens*	4	0	4
	Chokecherry	*Prunus virginiana*	0	1	1
	Ironwood	*Ostrya virginiana*	1	0	1
	Little-leaved Linden	*Tilia cordata**	3	0	3
	Manitoba Maple	*Acer negundo**	8	0	8
	Northern Red Oak	*Quercus rubra*	4	0	4
	Sugar Maple	*Acer saccharum*	6	0	6
	White Ash	*Fraxinus americana*	2	0	2
Total individuals to be retained			**41**	**5**	**46**
Tree Group 3	Trembling Aspen	*Populus tremuloides*	30	0	30
Tree Groups 4 and 5	Trembling Aspen	*Populus tremuloides*	21	0	21
Tree Group 6	Manitoba Maple	*Acer negundo**	4	0	4
Approx. total of trees to be retained within groups			**55**	**0**	**55**
TOTAL (individuals + groups)					**101**

*Non-native species

4.3 Trees to be Removed

Among the individually inventoried trees, a total of 18 trees are proposed to be removed (**Table 4**) to accommodate the proposed development, most of which are native and in good to fair condition. The entirety of Tree Groups 1 and 2 are also proposed to be removed, comprising of approximately 110 small trees with DBHs ranging from 5 to 10 cm. Approximately half of Tree Group 3 (30 individuals) are also proposed for removals. These trees are of low preservation value based on the maturity, condition,

sensitivity to proposed changes in wind and sun exposure, proximity of development, and other observations (City of Barrie, 2010).

Table 3. Trees Proposed to be Removed

Trees/Groups	Common Name	Scientific Name	Good to Fair Health	Poor Health	Total Count
Individual Trees	Balsam Poplar	*Populus balsamifera*	1	0	1
	Black Walnut	*Juglans nigra*	8	0	8
	Manitoba Maple	*Acer negundo**	4	2	6
	Northern Red Oak	*Quercus rubra*	1	0	1
	Trembling Aspen	*Populus tremuloides*	2	0	2
Total individuals to be removed			**16**	**2**	**18**
Tree Groups 1 and 2	Meadow Willow	*Salix petiolaris*	110	0	110
Tree Group 3**	Trembling Aspen	*Populus tremuloides*	30	0	30
Approx. total of trees to be removed within groups			**140**	**0**	**140**
TOTAL (individuals + groups)					**158**

*Non-native species

** Approximately half of Tree Group 3 is found outside of the 5 m vegetative buffer setback

5. Tree Preservation Plan

The specifications for tree protection are detailed below and illustrated on **Figure 2** with the location of required tree protection fencing. These standard mitigation measures are based on the Tree Protection Manual (City of Barrie, 2010).

5.1 Tree Protection Fencing

As per the recommendations of Palmer's Environmental Impact Study, which has been completed under separate cover, a 5 m Vegetated Buffer Zone has been proposed from the existing fenceline/property limits. It is recommended that these limits be clearly defined in-field using erosion control fencing, and all clearing and grading activities are to remain outside of it. It is expected that such measures will be appropriate for protection of trees situated within the buffer limits.

Trees proposed for retention outside the 5 m Vegetated Buffer Zone, should be protected by installation of additional tree protection fencing. Fencing provides protection from potential damage during construction activities such as the use of machinery near trees and branches, and stockpiling of materials over the root zone. Tree protection fencing should be installed at the recommended Tree Protection Zone (TPZ) distance for each individual tree and tree group (**Table 4**). Based on the City of Barrie's guidelines, the minimum TPZs are based on the DBH of the tree, while the optimum TPZs are based on the tree's dripline. For this Tree Preservation Plan, the TPZ providing the greatest protection was applied to each tree.

Table 4. Tree Protection Zone

DBH*	Minimum TPZ Distance**	Optimum TPZ Distance
>=10 cm	1.0 m	dripline
11-25 cm	1.5 m	dripline
26-40 cm	2.0 m	dripline
41-60 cm	2.5 m	dripline
61-80 cm	3.0 m	dripline
81 cm +	4.0 m	dripline

*DBH measurement of tree is taken at 1.37 metres above the ground

**TPZ distances are to be measured from the outside edge of the tree base

Within the TPZ there must be:

- No alteration or disturbance to existing grade of any kind;
- No changes to the grade by adding fill, excavating or scraping;
- No storage of construction materials or equipment;
- No storage of soil, construction waster or debris;
- No disposal of any deleterious materials e.g. concrete sleuth, gas, oil, paint; and
- No movement of vehicles, equipment, or pedestrians.

As per the City's Standard Specification BSD-21A and BSD-23, wire fencing should be installed with a minimum height of 900 mm. The specifications for tree protection fencing are provided in **Appendix B**.

5.2 Pruning

Roots and branches of existing trees that are disturbed by excavation or any other construction activity should be pruned to ensure the long-term health of the tree. These trees are immediately adjacent to the proposed works and vulnerable to becoming injured as a result of nearby works with machinery. Pruning should be conducted by a Certified Arborist using good arboricultural practices. In general, pruning is to be done by hand making clean cuts. Rotary tools and torque motions should not be employed. Efforts should be made to keep exposed roots moist and soils replaced as soon as feasible.

5.3 Tree Replacement

As noted in Section 4.4, a total of 158 inventoried trees are proposed for removal to accommodate the proposed development. Currently, the City of Barrie does not have a policy for tree replacement on private property. As for the removal of a public tree, it states that a replacement public tree must be planted. To mitigate for lost trees within the private property, it is recommended that trees be replaced in at least a 1:1 ratio. As such, a total of 158 replacement trees are recommended to be planted.

Replacement tree species should be native to the Simcoe area, ideally sourced from local nurseries and be representative of the immediate landscape. The following species are recommended based on the dominant canopy composition of the adjacent forests:

- Sugar Maple
- Ironwood
- Black Walnut
- Eastern Hemlock
- White Pine

It is recommended that compensation trees be a minimum of 70 millimetres (mm) caliper stock (7 cm DBH). Tree replacements are recommended to be planted within the 5 m vegetative buffer setback that can be found on the western and southern limits of the Subject Property.

6. Management and Monitoring

6.1 Pre-Construction Phase

To avoid a MBCA offence by the inadvertent injury or destruction of active nests and/or eggs during bird nesting periods, it is recommended that all vegetation (including tree) removal works are conducted between September 1 and April 14 of any given year. Should tree removal during the bird nesting season be unavoidable, a qualified biologist should conduct a nesting survey immediately before any vegetation removal is conducted. No branches or brush from clearing is to be stored on the site. Cutting, brush, and chipping cleanup are to be completed outside of the migratory bird nesting season.

All tree to be removed be felled into the proposed development area as to avoid damage to the adjacent treed areas. The tree protection fencing should be installed before the commencement of any earth works or construction. Appropriate tree pruning would also be completed at this point. Any pruning of tree roots and branches of tree necessary to accommodate construction work should be completed using best arboricultural practices.

6.2 Construction Phase

Contractors are responsible for all protection techniques, to the satisfaction of the City of Barrie or their designated Certified Arborist. Protective fencing should be installed (Section 5.1) and remain in place throughout the duration of construction and should not allow vehicles, foot traffic, or equipment to compact soil within the tree protection fencing area.

6.3 Post-Construction Phase

The removal of tree protection fencing and additional tree care measures should only be completed when all construction activities have been completed and landscaping has been initiated. Planting of replacement trees as per Section 5.3 will be initiated as part of landscaping and be completed by nursery professionals or a Certified Arborist. To promote successful establishment, plantings will occur solely during the spring or fall planting seasons; being April 15 – July 1, and September 15 – November 15, respectively.

Monitoring of tree establishment will be completed for a minimum of one growing season post-planting, following preliminary acceptance by the City. Monitoring should be designed to assess the growth and establishment of the planted trees, ensuring that the conditions of any nursery guarantees are met.

7. Conclusions

Of the 259 total inventoried trees, approximately 101 are to be retained. A total of 158 are proposed to be removed. The forests to the west and south of the proposed development are not expected to be impacted by the construction works. The Tree Preservation Plan described in this report is intended to be implemented to ensure the protection for trees being retained, suitable mitigation measures are followed for trees that may be injured, and appropriate replacements for trees proposed to be removed. The management and monitoring recommendations are provided as direction for the various phases of construction to ensure that impacts to trees are minimized to the greatest extent feasible.

Yours truly,

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Reviewed By:

Austin Adams, M.Sc., EP
Sr. Ecologist, ISA Certified Arborist ON-2000A

References

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City of Barrie. 2014. A By-law of The Corporation of the City of Barrie to prohibit or regulate the injuring or destruction of trees on private property in the City of Barrie (No. 2014-115). Retrieved from: https://www.barrie.ca/City%20Hall/ByLaws/BylawDocs/By-law%202014-115%20Private%20Tree%20By-law.pdf

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Appendix A

Tree Inventory

APPENDIX A
TREE INVENTORY

Tag ID	Common Name	Species Name	DBH	Effective DBH	Condition (G /F/P/D)		Dripline	Comments: e.g. Wounds/compartmentalization, insects/disease, signs of erosion, rot, advanced decay >5 cm	Preservation Direction
			(cm)	(cm)	Str	Vig	(m)		
672	Trembling Aspen	*Populus tremuloides*	4	4	G	G	0.5	Deep fill on south drip.	Remove
673	Trembling Aspen	*Populus tremuloides*	7+ 4	8	G	G	0.5		Remove
674	Little-leaved Linden	*Tilia cordata*	15	15	G	G	1	Minor foliar insect damage, too much mulch up to 1 ft	Retain
675	Little-leaved Linden	*Tilia cordata*	17	17	G	G	1	Minor foliar insect damage, too much mulch up to 1 ft	Retain
676	Little-leaved Linden	*Tilia cordata*	15	15	G	G	1	Minor foliar insect damage, too much mulch up to 1 ft	Retain
677	Blue Spruce	*Picea pungens*	12	12	G	F	1	Heavy seed-set stress? Too much mulch up to 1 ft	Retain
678	Blue Spruce	*Picea pungens*	10	10	G	F	1	Heavy seed-set stress? Too much mulch up to 1 ft	Retain
679	Blue Spruce	*Picea pungens*	15	15	G	G	1	Too much mulch, up ot 1 ft	Retain
680	Blue Spruce	*Picea pungens*	13	13	G	G	1	Too much mulch, up ot 1 ft	Retain
681	Northern Red Oak	*Quercus rubra*	16	16	G	F	2.5	Minor foliar insect damage, some mechanical damage on t	Retain
682	Northern Red Oak	*Quercus rubra*	13	13	G	G	3		Retain
683	Balsam Poplar	*Populus balsamifera*	2+3+2	4	G	G	1		Remove
684	Black Walnut	*Juglans nigra*	all <5	all <5	G	G	1	3 trees total: tag on one tree, two others within 2m of tag	Retain
685	White Ash	*Fraxinus americana*	2	2	G	G	1		Retain
686	Northern Red Oak	*Quercus rubra*	3	3	F	F	1	Abundant Grape growing, insect damage	Remove
687	Manitoba Maple	*Acer negundo*	3	3	G	G	1	Minor mechanical damage at branch	Remove
688	Black Walnut	*Juglans nigra*	3	3	F	F	1	Abundant insect damage	Retain
689	Black Cherry	*Prunus serotina*	5	5	G	G	1		Retain
690	Basswood	*Tilia americana*	4	4	G	P	1	Very abundant insect damage in foliage	Retain
691	Basswood	*Tilia americana*	5	5	F	P	1	1 other within 0.5m . Abundant insect damage	Retain
692	Manitoba Maple	*Acer negundo*	22	22	F	F	3	Broken branch on top	Retain
693	Black Walnut	*Juglans nigra*	4	4	G	G	2		Remove
694	Black Walnut	*Juglans nigra*	5	5	G	G	2	5 trees total: tag on one tree, four others within 2-3m of e	Remove
695	Black Walnut	*Juglans nigra*	5	5	G	G	2		Remove
696	Black Walnut	*Juglans nigra*	5	5	G	G	1.5		Retain
697	Black Walnut	*Juglans nigra*	9	9	G	G	2		Remove
698	Black Walnut	*Juglans nigra*	4	4	G	G	1.5		Remove
699	Black Walnut	*Juglans nigra*	4	4	G	G	1		Remove
700	Manitoba Maple	*Acer negundo*	20+25+14	35	G	G	3	Covered in grape	Remove
701	Black Walnut	*Juglans nigra*	11	11	G	G	2	Covered in grape	Remove
702	Black Walnut	*Juglans nigra*	8	8	F	F	2	Dense grape invasion	Remove
703	Black Walnut	*Juglans nigra*	9	9	G	G	2	Within few inches of chain link fence, potential for girdling	Retain
704	Manitoba Maple	*Acer negundo*	12+5	13	P	P	2	12 cm stem: dead	Remove
705	Manitoba Maple	*Acer negundo*	7+6+8+3	13	P	P	2	7cm, 8cm stems: dead	Remove
706	Manitoba Maple	*Acer negundo*	5+5+5	9	G	G	1		Remove
707	Manitoba Maple	*Acer negundo*	5+5+5	9	G	G	1		Retain
708	Manitoba Maple	*Acer negundo*	5+5+5	9	G	G	1		Retain
709	Manitoba Maple	*Acer negundo*	5+5+5	9	G	G	1		Retain
710	Manitoba Maple	*Acer negundo*	5+5+5	9	G	G	1.5		Remove
711	Black Walnut	*Juglans nigra*	8	8	G	G	2		Retain
712	Black Walnut	*Juglans nigra*	9	9	G	G	2		Retain
A	Northern Red Oak	*Quercus rubra*	13	13	G	F	2		Retain
B	American Beech	*Fagus grandifolia*	60	60	F	P	5	Overhangs 0.5m into property. Abundant dead branches a	Retain
C	American Beech	*Fagus grandifolia*	60	60	F	P	5	Overhangs 0.5m into property. Abundant dead branches a	Retain
D	Manitoba Maple	*Acer negundo*	12	12	G	G	1.5	Overhangs 0.5m into property	Retain
E	Manitoba Maple	*Acer negundo*	20+20+20	35	F	F	3.5	Overhangs 3m into property	Retain
F	Black Walnut	*Juglans nigra*	20	20	G	G	4	Overhangs 2 m into property	Retain
G	Manitoba Maple	*Acer negundo*	40+30	50	F	G	5	Overhangs 2m into property. Tree is "sprawly"	Retain
H	Manitoba Maple	*Acer negundo*	15+15	21	F	G	4	Overhangs 2m into property. Co-dominant stems, weak	Retain
I	Sugar Maple	*Acer saccharum*	60	60	G	G	5	Overhangs 3m into property; 2m from property	Retain
J	Sugar Maple	*Acer saccharum*	70	70	G	G	5	No overhang; ~4m from property	Retain
K	Sugar Maple	*Acer saccharum*	70	70	G	G	6	Overhangs 4m into property; 2m from property	Retain
L	Basswood	*Tilia americana*	20	20	F	P	3	Overhangs 2m into property, abundant insect damage	Retain
M	White Ash	*Fraxinus americana*	8	8	F	P	2	Overhangs 1m into property	Retain
N	Black Cherry	*Prunus serotina*	10+10	14	G	G	3	Overhangs 2m into property	Retain
O	Sugar Maple	*Acer saccharum*	50	50	G	G	6	Overhangs 3m into property	Retain
P	Ironwood	*Ostrya virginiana*	8	8	G	G	2	Overhangs 1m into property	Retain
Q	Northern Red Oak	*Quercus rubra*	20	20	G	G	2	Overhangs 3m into property	Retain
R	Sugar Maple	*Acer saccharum*	20	20	G	G	4	Overhangs 3m into property	Retain
S	Sugar Maple	*Acer saccharum*	20+20+20	35	G	G	4	Overhangs 3m into property; w/Basswood within 5cm, ov	Retain
T	Basswood	*Tilia americana*	25+10	27	G	F	5	Overhangs 4m into property; insect damage	Retain
U	Black Walnut	*Juglans nigra*	10	10	G	G	1	Overhangs 1m	Retain
V	Chokecherry	*Prunus virginiana*	15	15	G	P	2	Overhangs 1.5m into property	Retain
W	Black Walnut	*Juglans nigra*	18	18	G	G	2	Overhangs 1m into property	Retain
TG1	Meadow Willow	*Salix petiolaris*	all <5	all <5	G	G	0.2	~50 individuals in group	Remove
TG2	Meadow Willow	*Salix petiolaris*	all <5	all <5	G	G	1	~60 individuals in group	Remove
TG3	Trembling Aspen	*Populus tremuloides*	5-10cm	5-10cm	G	G	1	~60 individuals in group,	50% Remove / 50% Retain
TG4	Trembling Aspen	*Populus tremuloides*	18-20cm	18-20cm	G	G	4	~5 individuals in group along chainlink fence, overhanging	Retain
TG5	Trembling Aspen	*Populus tremuloides*	3-20cm	3-20cm	G	G	2	~16 individuals in group along fence, overhanging 1m into	Retain
TG6	Manitoba Maple	*Acer negundo*	5-15cm	5-15cm	G	G	1	4 individuals in group; all multistem, overhanging 0.5m int	Retain

Appendix B

City of Barrie's Standard Specification for Tree Protection

NOTES:

1. A TREES ROOT SYSTEM GENERALLY GROWS WITHIN 60cm OF THE SURFACE. THE ROOT SYSTEM IS COMPRISED OF LARGE ANCHOR ROOTS WHICH PROVIDE STRUCTURAL SUPPORT, TRANSPORT ROOTS AND A NETWORK OF FEEDER ROOTS WHICH ARE RESPONSIBLE FOR THE MAJORITY OF ABSORPTION FOR BOTH WATER AND NUTRIENTS FROM THE SURFACE.

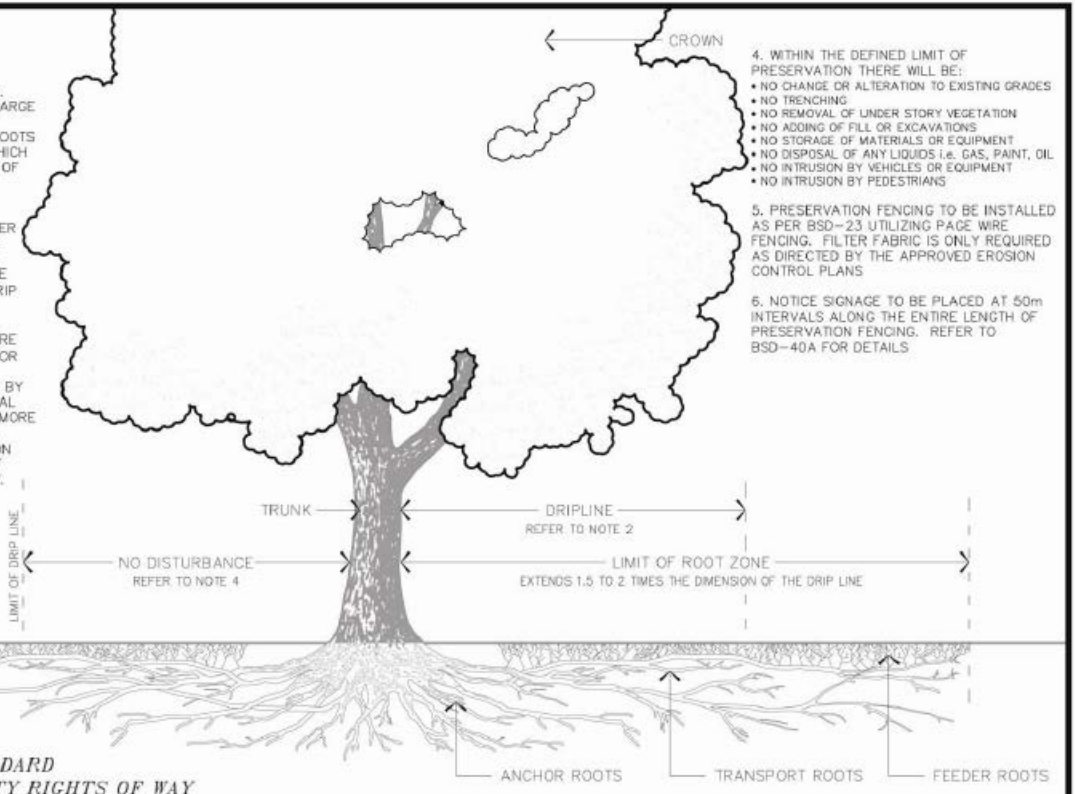
2. DRIPLINE IS MEASURED TO THE OUTER MOST LIMIT OF BRANCHING WITHIN THE CROWN OF THE TREE. THE FURTHEST DISTANCE SHALL APPLY TO THE ENTIRE PERIMETER OF THE CROWN AS THE "DRIP LINE"

3. WHEN CONSTRUCTION/REMOVALS ARE LIMITED TO ONE SIDE OF A TREE AND/OR GROUP OF TREES THE LIMIT OF PRESERVATION SHALL BE DETERMINED BY THE DRIPLINE. IN THE EVENT INDIVIDUAL TREES ARE BEING PRESERVED WHERE MORE THAN 1/3 OF THE ROOT ZONE WILL BE DISTURBED THE LIMIT OF PRESERVATION SHALL BE 1.5 TO 2 TIMES THE LIMIT OF CANOPY OR AS DIRECTED BY THE CITY.

4. WITHIN THE DEFINED LIMIT OF PRESERVATION THERE WILL BE:
- NO CHANGE OR ALTERATION TO EXISTING GRADES
- NO TRENCHING
- NO REMOVAL OF UNDER STORY VEGETATION
- NO ADDING OF FILL OR EXCAVATIONS
- NO STORAGE OF MATERIALS OR EQUIPMENT
- NO DISPOSAL OF ANY LIQUIDS i.e. GAS, PAINT, OIL
- NO INTRUSION BY VEHICLES OR EQUIPMENT
- NO INTRUSION BY PEDESTRIANS

5. PRESERVATION FENCING TO BE INSTALLED AS PER BSD-23 UTILIZING PAGE WIRE FENCING. FILTER FABRIC IS ONLY REQUIRED AS DIRECTED BY THE APPROVED EROSION CONTROL PLANS

6. NOTICE SIGNAGE TO BE PLACED AT 50m INTERVALS ALONG THE ENTIRE LENGTH OF PRESERVATION FENCING. REFER TO BSD-40A FOR DETAILS



THIS STANDARD DOES NOT APPLY TO CITY RIGHTS OF WAY

CITY OF BARRIE STANDARD

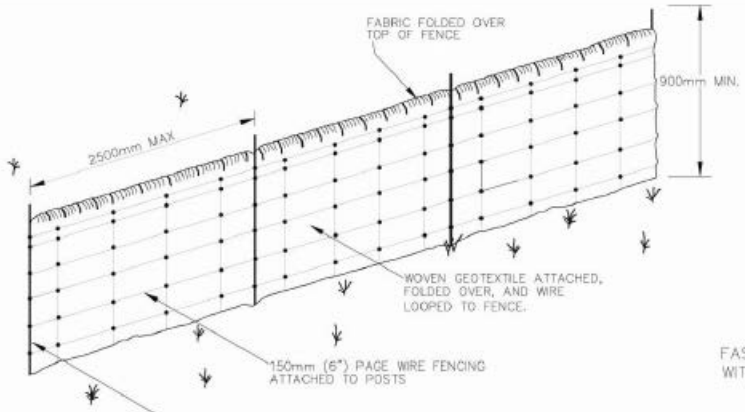
LIMIT OF TREE PRESERVATION FOR DEVELOPMENT APPROVALS

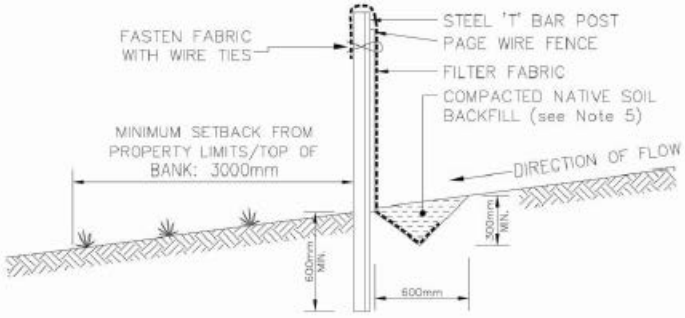
NO.	REVISION	APR'D	DATE

APR'D: S.R.A. DATE: 01.12.05

DRAWN: WmMc SCALE: NTS

BSD-21A





NOTES:

1. THIS STANDARD IS TO BE IN ACCORDANCE WITH SCHEDULE "B" OF THE SITE ALTERATION BY-LAW, "CODE FOR THE DESIGN AND MAINTENANCE OF EROSION AND SEDIMENTATION CONTROL MEASURES" AND IS TO BE ADMINISTERED ACCORDINGLY.
2. SILT CONTROL FENCE SHOULD BE ALIGNED WITH CONTOURS FOR SHEET OVERLAND FLOW.
3. SILT/SEDIMENT CONTROL FENCE IS TO BE LOCATED IN AREAS OF LOW SEDIMENT YIELD ON SLOPES THAT CONFORM TO MTO DRAINAGE MANUAL VOLUME 2 "CHART F4-3C TOPOGRAPHIC FACTOR LS BASED ON SLOPE LENGTH AND GRADIENT."
4. SILT/SEDIMENT CONTROL FENCE SHALL BE INSTALLED WITH FILTER MEDIA FABRIC TOED INTO THE SOIL A MIN. OF 150mm BY EITHER STATIC SLICING OR TRENCH METHODS WITH COMPACTION OF TRENCH MATERIAL MEETING 95% STANDARD PROCTOR DENSITY.
5. STEEL 'T' BAR POSTS ARE TO BE SPACED MAX. 2500mm ON CENTER.
6. FROZEN GROUND CONDITIONS REQUIRE FILTER FABRIC TO BE BACKFILLED IN TRENCH WITH CLEAR STONE.
7. ALL DIMENSIONS ARE IN MILLIMETRES UNLESS OTHERWISE SHOWN.
8. GEOTEXTILE FABRIC TO BE COMPRISED OF WOVEN OR NON-WOVEN U.V. STABILIZED MATERIAL. FABRIC TO BE FOLDED OVER TOP OF FENCE MIN. 300mm AND WIRE FASTENED.

CITY OF BARRIE STANDARD

TYPICAL DETAIL OF SILTATION CONTROL FENCE

NO.	REVISION	APR'D	DATE
2	FENCE DIM. & NOTE #4 CHANGE	M.S.	05.01.17
1	MODIFICATIONS BY ENV. SER.		04.04.06

APR'D: R.G.N. DATE: 04.03.16
DRAWN: A.S.C SCALE: NTS

BSD-23A