Tree Inventory and Preservation Plan Report
609 and 615 Hamilton Street North, 129-137 Truedell Circle and 3 Nisbet Boulevard
Waterdown, ON

prepared for

Country Green Homes Inc.
410 Industrial Drive, Unit C
Milton, ON
L9T 5A6

prepared by

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27 July 2016

KUNTZ FORESTRY CONSULTING INC Project P1267

Introduction

Kuntz Forestry Consulting was retained by Country Green Homes Inc. to complete a Tree Inventory and Preservation Plan report in support of a development application for properties situated at 609 & 615 Hamilton Street North, 129-137 Truedell Circle and 3 Nisbet Boulevard in Waterdown, Ontario.

The work plan for this tree preservation study included the following:

- Prepare field mapping (overlay development plans on the topographic survey and aerial imagery);
- Prepare inventory of tree resources with a diameter at breast height (DBH) greater than or equal to 10 cm on and within 6m of the subject property (including within the City road allowance);
- Evaluate potential tree saving opportunities based on proposed development plans; and,
- Document the findings in a Tree Inventory and Preservation Plan Report.

Field assessments were completed on the 27th of July 2016. Tree resources were assessed utilizing the following parameters:

Tree # - number assigned to tree that corresponds to Figure 1.
Species - common and botanical names provided in the inventory table.
DBH - diameter (centimetres) at breast height, measured at 1.4 m above the ground.
Condition - Condition ratings include poor (P), fair (F) and good (G), defined as:

- Good: dead branches less than 10%; signs of good compartmentalization or any wounds; no strict defects
- Fair: 10-30% dead branches, size or occurrence of wounds, present some concerns, minor structural defects
- Poor: more than 30% dead branches, weak compartmentalization, early leaf drop, presence of insects or disease, major structural defects

Crown Dieback (CDB) – Percent of crown which no longer supports foliage;
Dripline – distance from the stem to the edge of the crown, and
Comments - additional relevant detail.

Methodology

Trees measuring over 10cm DBH on the subject property, within six metres of the subject property and within the City road allowance were included in the tree inventory. Trees were located by the topographic survey provided, aerial imagery and estimations made on site. Trees inventoried were tagged with aluminum tags, where possible, and numbered 51-74, or lettered A-B (City trees). Tree polygons (groups of trees) were identified with the prefix “P”. Trees locations are shown on Figure 1. Refer to Table 1 for the results of the tree inventory.

Existing Site Conditions

The subject site is comprised of vacant land with scattered trees and shrubs. Trees existing the form of landscape trees, natural regeneration and cedar hedgerow. The subject area is located southwest of Nisbet Boulevard and Hamilton Street North.

Individual Tree Resources

The tree inventory was conducted on 27 July 2016. The tree inventory documented a total of 23 trees and 3 tree polygons on subject property, on neighbouring property and within the City road allowance. Refer to Table 1 for the complete tree inventory and Figure 1 for the location of trees reported on in the inventory.

Tree resources were comprised of Eastern White Cedar (*Thuja occidentalis*), Black Walnut (*Juglans nigra*), Hybrid Poplar (*Populus* sp.), Silver Maple (*Acer saccharinum*), Black Locust (*Robinia pseudoacacia*), Manitoba Maple (*Acer negundo*), White Mulberry (*Morus alba*), Freeman Maple (*Acer freemanii*) and Eastern Cottonwood (*Populus deltoides*).

Proposed Development

The proposed development is comprised of a 61 townhouse and semi-detached residential housing units with associated roads. Refer to Figure 1 for the existing conditions and the proposed site plan.

Discussion

The following sections provide a discussion and analysis of development impacts, tree removal requirements, and tree preservation relative to the proposed development and existing conditions.

Development Impacts

The dripline was used in the preservation planning process to determine if trees require removal. Where development is proposed within driplines there is the potential to damage trees and some tree removal could be required.

Tree Removal

The removal of 20 trees and 2 tree polygons, including Trees 53-67, 69-72, and tree polygons P52 and P68, will be required to accommodate the proposed development.

Tree Preservation

Preservation of 3 trees and one tree polygon, including Trees B, 73 ,74 and tree polygon PA, will be possible with appropriate tree protection measures. Tree preservation fencing must be erected prior to the commencement of construction to ensure trees identified for preservation are not impacted by development.

Tree B and tree polygon PA are located within the City road allowance. Tree protection fencing has not been proposed around these trees due to their distance away from the

proposed development and their location behind an existing chain link fence. These trees should not be impacted assuming all works remain on the subject property.

Refer to Figure 1 for tree preservation fence locations, further tree preservation plan notes and the Tree Protection Fence Detail.

Compensation

The City of Hamilton requires a 1:1 compensation ratio of trees to be removed to trees to be planted. Based on the total number of trees proposed for removal, a total of 35 tree plantings will be required.

Summary and Recommendations

Kuntz Forestry Consulting was retained by Country Green Homes Inc. to complete a Tree Inventory and Preservation Plan report in support of a development application for properties situated at 609 & 615 Hamilton Street North, 129-137 Truedell Circle and 3 Nisbet Boulevard in Waterdown, Ontario. A tree inventory was conducted and reviewed in the context of the proposed site plan.

The findings of the study indicate a total of 23 trees and 3 tree polygons situated on subject property, on neighbouring property and within the City road allowance. The removal of 20 trees and 2 tree polygons is required to accommodate the proposed development.

The following recommendations are suggested to minimize impacts to trees identified for preservation. Refer to Figure 1 for additional tree preservation notes and the Tree Preservation Fence Detail.

- Tree protection barriers and fencing should be erected at locations prescribed on Figure 1.

- Tree protection measures will have to be implemented prior to construction to ensure the trees identified for preservation are not impacted by the development.

- Roots and branches that extend past prescribed tree protection zones that require pruning must be pruned by a qualified Arborist or other tree professional. All pruning of tree roots and branches must be in accordance with good arboricultural standards.

- Site visits, pre, during and post construction are recommended by either a certified consulting arborist (I.S.A.) or registered professional forester (R.P.F.) to ensure proper utilization of tree protection barriers. Trees should also be inspected for damage incurred during construction to ensure appropriate pruning or other mitigation measures are implemented.

Respectfully Submitted,
Kuntz Forestry Consulting Inc.

Amy Choi

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Associate Arborist and Forest Ecologist
ISA Certified Arborist #ON-1609A

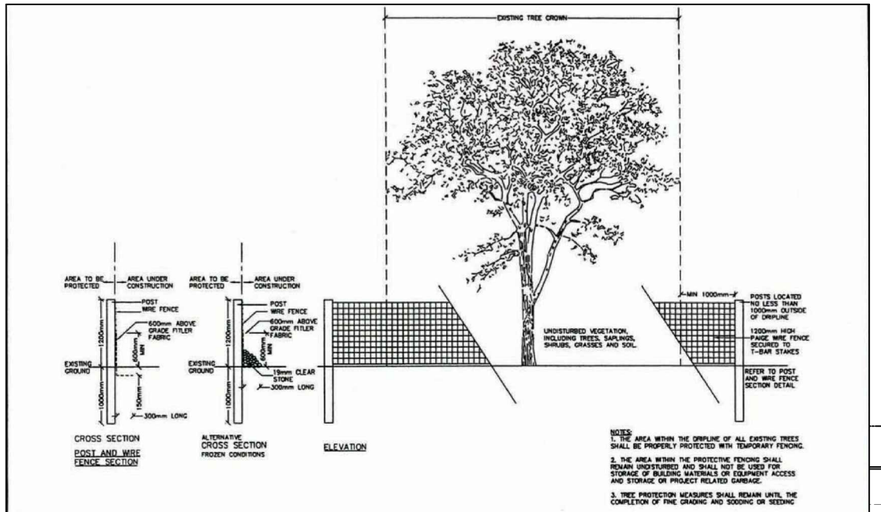
Table 1. Detailed Tree Inventory Table

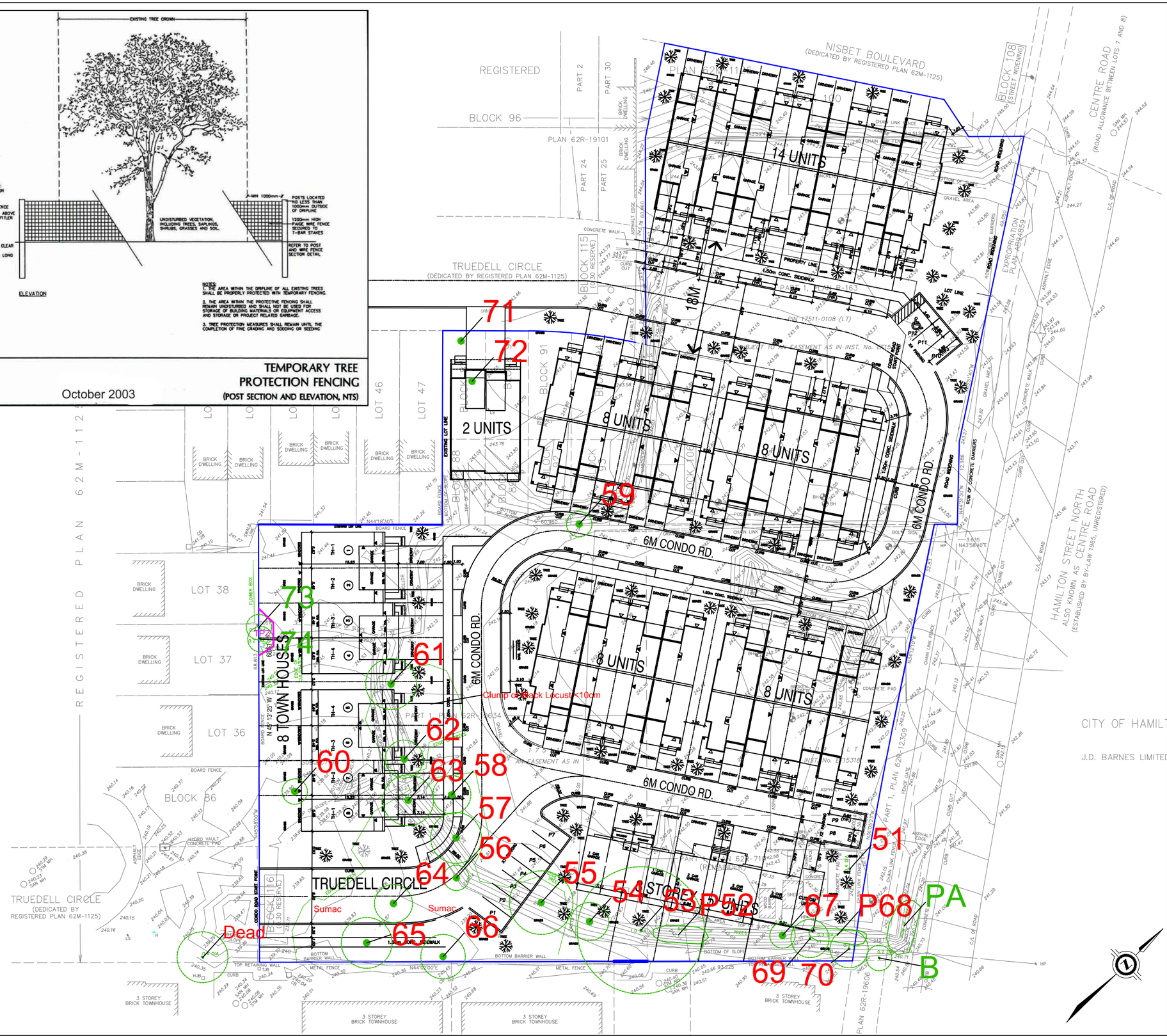
Location: 609 & 615 Hamilton St. N., 129-137 Truedell Circle and 3 Nisbet Blvd., Waterdown Date: 27 July 2016 Surveyors: AC

Tree #	Common Name	Scientific Name	DBH	TI	CS	CV	CDB	DL	Comments	Retain/Remove	Ownership
PA	Eastern White Cedar	*Thuja occidentalis*	15-26, avg. 18	G	FG	FG		2	6 trees, chlorosis(L)	Retain	City
B	Black Walnut	*Juglans nigra*	15.5	FG	G	G		2	Co-dominant at 3m	Retain	City
51	Hybrid Poplar	*Populus sp.*	27	FG	G	G		2	Concrete pad and asphalt at base resulting growth deficit(M), low branches	Remove	Private
P52	Eastern White Cedar	*Thuja occidentalis*	14-16, avg. 15	G	G	G		1.5	6 trees, fill in root zone	Remove	Private
53	Silver Maple	*Acer saccharinum*	~65,70,28	PF	FG	FG		10	Union at 0.25m with included bark(H) and rot, vertical scaffold limbs(L), union at 1m and 1.4m with included bark(L)	Remove	Private
54	Black Walnut	*Juglans nigra*	16.5	G	G	G		3		Remove	Private
55	Manitoba Maple	*Acer negundo*	22.5,22.5,14.24	FG	FG	FG		5	Epicormic branching(L), union at base with included bark(M)	Remove	Private
56	Black Locust	*Robinia pseudoacacia*	11	F	F	F		2	Sweep(M) at base, asymmetrical crown(L)	Remove	Private
57	Manitoba Maple	*Acer negundo*	22	F	FG	F		4	Curved stem, epicormic branches(M)	Remove	Private
58	Black Walnut	*Juglans nigra*	13	G	G	FG		3		Remove	Private
59	Black Walnut	*Juglans nigra*	11	G	G	FG		2	Fill in root zone	Remove	Private
60	Manitoba Maple	*Acer negundo*	11	FG	F	F		2	Lean(L), epicormic branches(M), heavy seed crop	Remove	Private
61	Black Locust	*Robinia pseudoacacia*	21.5,20,12,11	F	F	F		4	2 trees, union at base, epicormic branches(M), lean(L)	Remove	Private
62	Manitoba Maple	*Acer negundo*	12.5,11	F	F	F		3	Lean(M), union at base, epicormic branches(M)	Remove	Private
63	Black Locust	*Robinia pseudoacacia*	22,30	FG	F	F		4	Co-dominant at 1.1m, growth deficit(L), epicormic branches(L)	Remove	Private
64	Black Locust	*Robinia pseudoacacia*	15	F	F	F		3	Bowed(L)	Remove	Private
65	Black Walnut	*Juglans nigra*	31	G	FG	F		4	Dead branches(L), asymmetrical crown(L), bowed(L)	Remove	Private
66	White Mulberry	*Morus alba*	30.5,18	F	F	F		3.5	One structural root cut for retaining wall, co-dominant at 1m with included bark(H) and rot, broken branches(L)	Remove	Private

67	Eastern White Cedar	*Thuja occidentalis*	~20	FG	FG	F		2	Not tagged, lean(L), grapevine competition(M), chlorosis(L)	Remove	Private
P68	Eastern White Cedar	*Thuja occidentalis*	~11-15, avg. 12	FG	FG	F		1.25	8 trees, grapevine competition(M)	Remove	Private
69	Black Walnut	*Juglans nigra*	22	FG	F	F		3	Not tagged, asymmetrical crown(L), grapevine competition(M)	Remove	Private
70	Black Walnut	*Juglans nigra*	21	FG	G	G		3	Not tagged, lean(L)	Remove	Private
71	Freeman Maple	*Acer freemanii*	~6	G	G	G		0.5	Not tagged	Remove	Private
72	Freeman Maple	*Acer freemanii*	~6	G	G	G		0.5	Not tagged	Remove	Private
73	Eastern Cottonwood	*Populus deltoides*	~12	FG	G	G		2	Not tagged, swelling at base	Retain	Shared
74	Eastern Cottonwood	*Populus deltoides*	~14	G	G	G		2	Not tagged, swelling at base	Retain	Private
END											

Codes		
DBH	Diameter at Breast Height	*(cm); ~ approximate*
TI	Trunk Integrity	*(G, F, P)*
CS	Crown Structure	*(G, F, P)*
CV	Crown Vigor	*(G, F, P)*
CDB	Crown Die Back	*(%)*
DL	Dripline, radius	*(m)*





LEGEND

Tree Inventory

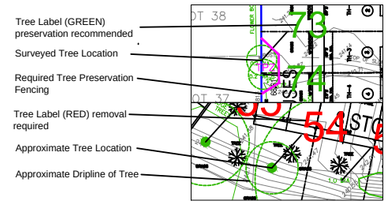
Refer to Table 1 of report dated 27 July 2016 for complete tree inventory information. All trees greater than 10 cm DBH on and within six metres of the subject property were included in the inventory. Trees were located by topographic survey or aerial imagery.

Tree Removals

The removal of 20 trees and 2 tree polygons will be required to accommodate the proposed works. Required tree removals are indicated with RED labels.

Tree Preservation

Preservation of all remaining tree resources will be possible with appropriate tree protection measures. Trees identified for preservation are indicated with GREEN labels. Required Tree Preservation Fencing is indicated in MAGENTA and approximate dripline of trees is shown with dashed GREEN circles. Refer to Tree Protection Plan Notes for preservation details.



TREE PROTECTION PLAN NOTES

Prior to site disturbance the owner must confirm that no migratory birds are making use of the site for nesting. The owner must ensure that the works are in conformance with the Migratory Bird Convention Act and that no migratory bird nests will be impacted by the proposed work. It is the applicants' responsibility to discuss potential tree injury of trees on shared property lines with their neighbours. Should such trees be injured to the point of instability or death the applicant may be held responsible for removal and such issues would be dealt with in civil court or through negotiation. The applicant would be required to replace such trees to the satisfaction of the City of Hamilton.

TREE PROTECTION ZONE: No construction activity including grade changes, surface treatments or excavations of any kind is permitted within the area identified on the Tree Protection Plan or Site Plan as a Tree Protection Zone (TPZ). No root cutting is permitted. No storage of materials or fill is permitted within the TPZ. No movement or storage of vehicles or equipment is permitted within the TPZ. Grade changes are not permitted within established TPZ. The area(s) identified as a TPZ must remain undisturbed at all times.

TREE PROTECTION BARRIERS:

For City-owned Trees:

Tree protection barriers for trees situated on the City road allowance where visibility must be maintained, can be 1.2m (4ft.) high and consist of chain link, or orange plastic web snow fencing on a 2" x 4" wood frame. All supports and bracing used to secure the barrier should be located outside the TPZ. All supports and bracing should minimize damage to roots outside the TPZ. Where some fill or excavate has to be temporarily located near a tree protection barrier, plywood must be used to ensure no material enters the TPZ. If the TPZ needs to be reduced to facilitate construction access, the tree protection barrier must be maintained at a lesser distance and the exposed TPZ protected with plywood and wood chips. This must first be approved by the City of Hamilton.

For trees on private property situated on or adjacent to construction sites:

Tree protection barriers must be installed around trees to be protected using plywood clad hoarding or an equivalent approved by the City of Hamilton. All supports and bracing to safely secure the barrier should be outside the TPZ. All such supports and bracing should minimize damage to roots outside the TPZ.

General Note:

Prior to the commencement of any site activity the tree protection barriers specified on this plan must be installed and written notice provided to the City of Hamilton. Established tree protection zones must not be used as construction access, storage or staging areas. The tree protection barriers must remain in effective condition until all site activities including landscaping are complete. Written notice must be provided to the City of Hamilton prior to the removal of the tree protection barriers.

ARBORICULTURAL WORK:

Any roots or branches which extend beyond the TPZ indicated on this plan which require pruning, must be pruned by a qualified Arborist or other tree professional as approved by The City of Hamilton. All pruning of tree roots and branches must be in accordance with good arboricultural standards. Roots located outside the TPZ that have received approval from The City of Hamilton to be pruned must first be exposed by hand digging or by using a low pressure hydro vac method. This will allow a proper pruning cut and minimize tearing of the roots. The Arborist/tree professional retained to carry out crown or root pruning must contact The City of Hamilton no less than 48 hours prior to conducting any specified work.

No.	Issue/Revisions	Date	By
1	Report Submission	27 Jul 16	AC

Base Data: J.D. Barnes Limited (topo), Jansen Consulting (site plan)

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Property
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Waterdown, Ontario

Existing Conditions, Proposed Site Plan
Tree Inventory & Preservation Plan

Project	P1267	Figure	1
Date	27 July 2016		
Scale	1:600		