



TREE PRESERVATION, PLANTING and MANAGEMENT REPORT

Address of Subject Property: South Big Island Road, Severed Lot 1 (Lot 22 & 23)
Prince Edward County

Applicant's Name: Craig McClure Application #: _____

Report By: Gina Brouwer, ISA Certified Arborist ON-0937A,
Tree Risk Assessment Qualification, Butternut Health Assessor - BHA # 659

Date of Inventory: June 12, 2021 Report Date: June 18, 2021

Limitations:

The assessment presented in this report has been made using accepted standard arboriculture techniques as outlined in the Council of Tree & Landscape Appraisers Guide for Plant Appraisal, 10th Edition, Revised (2020) and International Society of Arboriculture Best Management Practices – Tree Inventories, 2nd Edition (2013). These techniques include limited visual examination of above-ground parts of each tree. Except where specifically noted, the trees observed were not climbed, probed, cored, or dissected, and excavation for detailed root crown inspection was not performed. Since some symptoms may only be present seasonally, the extent of observations that can be made may be limited by the time of year in which the inspection took place.

Trees are living organisms, and their health and vigour continually change over time due to seasonal variations, changes in site conditions, and other factors. For this reason, the assessment presented in this report is valid at the time of inspection, and no guarantee is made about the continued health of trees. It is recommended that the trees be re-assessed periodically. While every standing tree has the potential for failure and therefore poses some risk, a tree assessment is a good indication of present health and potential problems that could arise in the future.

1. Introduction:

Trophic Design was retained by the applicant to undertake tree and vegetation inventory, assessment, preservation, planting and management plan and report for the subject property. The inventory, plan and report are coordinated with the proposed Site Plan prepared by Jewell Engineering. This report outlines the site context, proposed development, methodology, observations and analysis, discussion and recommendations, tree inventory table, site photographs, tree protection fencing detail, references and certification. Refer to the Tree Preservation Plan TP1.

2. Site Context:

The subject property runs along the south side of South Big Island Road south to the shore of Muscote Bay. There is a residential lot to the east and productive farmland to the west. The subject property includes a two-storey wood frame house with garage and driveway, two barns, silos, small amenity buildings, and associated internal driveway and parking areas. The property

is 115,614 sq m with the majority of the site being productive agricultural field. The area around the existing house has mown lawn with semi-mature and mature trees. The Muscote Bay shore is lined with mature trees and fields and property are bordered by hedgerows with groups of trees and shrubs.

3. Proposed Development

Based on the Site Plan prepared by Jewell Engineering, the property owner intends to retain all existing structures and add parking and facilities for a winery. Development includes a 21-space parking lot and 75 sq m wine tasting structure 100m east of the existing house, a 15-space parking lot and 720 sq m winery south of an existing barn and associated fire route drive aligned with an existing internal driveway. The proposed development impacts existing agricultural filed areas and does not impact any existing trees.

4. Methodology:

A limited visual inventory and assessment was carried out in the study area on June 12, 2021 in good weather conditions. The inventory includes all trees (over 10cm diameter) and observations of shrub species, size and distribution. Trees were identified, measured, and assessed for condition. Tree size is expressed in trunk diameter at 1.37m (4 ½') 'breast height' above grade (DBH) or overall height, where applicable. A visually estimated trunk diameter is provided for trees that were not accessible due to site conditions. Some groups of colonized trees or shrubs are expressed as general quantities and estimated size ranges. The inventory does not include identification of any Ecological Land Classifications, herbaceous vegetation, species at risk, or regionally rare plants.

Each tree or group of trees was given a subjective condition rating of Excellent, Good, Fair or Poor based on the following criteria:

Excellent	no apparent health problems; good structural form
Good	minor problems with health and/or structural form
Fair	more serious problems with health and/or structural form
Poor	major problems with health and structural form

5. Observations and Analysis:

A detailed tree inventory is provided in Table 1 and tree locations are identified on the site plan overlaid on aerial imagery. **Table 1** includes species, size, condition and comments. The overall inventory includes 74 numbered records including some groups of shrubs and small trees. Tree numbers correspond to the **Tree Preservation Plan TP1**.

5.1 Summary of Groupings

- Tree No. 1 & 2 are two Colorado spruce on the north side of forked road. They are across from the existing house and road at the edge of a wire fence and below overhead service wires.
- Trees No. 3-17 are in the lawn area around the house and include a large Crimson Norway maple in the front yard, 2 Colorado spruce, 1 white pine, 1 poplar (dead), 1 paper birch, 2 hybrid butternut, 1 honeylocust, 1 silver maple, groups of common lilac, group of plum (*Prunus spp.*), group of buckthorn, and group of self-propagated Norway maples.
- Trees No. 18 & 19 are two shagbark hickory in the middle of the agricultural field

- Trees along the Muscote Bay shoreline include several mature crack willow, green ash, American elm, mature eastern cottonwood, sugar maple and silver maple. Riverbank grape is growing over many of the canopies.
- Hedgerows surrounding the fields include staghorn sumac, red cedar, green ash, buckthorn, apple, and American elm.

5.2 Species Characteristics and Occurrence

Norway Maple (*Acer platanoides*)

Non-native tree that is medium-sized and tolerant of a variety of site conditions. It creates dense shade, has common structural issues, and produces invasive seedlings.

Site Occurrence: There is a large Norway maple in the front yard of the house and multi-stem groups forming a hedge along the east side of the front yard.

Silver Maple (*Acer saccharinum*)

Common, large-sized, fast-growing, native tree typically growing in wet areas. Site

Occurrence: There is one (1) very large silver maple very close to the house and five (5) along shoreline (20-50cm DBH).

Paper Birch (*Betula papyrifera*)

Native small or medium-sized tree that is common in cultural landscapes. Fast growing and relatively short lived. Site Occurrence: There is one (1) paper birch in the lawn area near the house.

Shagbark Hickory (*Carya ovata*)

Native species of southern Ontario. They are long-lived, medium-sized trees and produce edible nuts. Site Occurrence: There are two (2) shagbark hickory out in the middle of the productive agricultural field. They are spaced at approximately 30m.

Green Ash (*Fraxinus pennsylvanica*)

Native and widely distributed medium-sized tree that propagate readily in disturbed areas. Emerald ash borer is an exotic, invasive insect pest that is present throughout southern Ontario and kills all ash (*Fraxinus spp.*) species. Pest control strategies are available with varying effectiveness. Site Occurrence: There one (1) semi-mature ash along the east property line hedgerow and smaller ash (10-20cm DBH) throughout the shoreline and along the South Big Island Road ditch east of the property.

More information on identification, signs, symptoms and management of emerald ash borer is available at the following

website: <http://www.omafra.gov.on.ca/english/crops/insects/eab-bbb-manage.htm>
<https://www.invasivespeciescentre.ca/invasive-species/meet-the-species/invasive-insects/emerald-ash-borer/>

Honeylocust (*Gleditsia triacanthos*)

Common, thornless, ornamental cultivar of rare native species. Medium-sized tree with broad crown and deep, wide-spreading roots. Site Occurrence: There is one (1) honeylocust in the lawn area near the house.

Hybrid Butternut (*Juglans spp.*)

Butternut (*Juglans cinerea*) is protected under the *Endangered Species Act, 2007* (ESA) from being killed, harmed, or removed. The endangered status is based on observed and predicted declines due to Butternut Canker. Hybrids of Butternut and non-native Walnut trees are not fully native to Ontario and are not protected under the ESA. Hybrid trees are relatively abundant in parts of southern Ontario, especially in settled areas. Site Occurrence: There are two (2) hybrid butternut trees in the lawn area adjacent to the house. Using the Data Sheet for Field Identification of Butternut Hybrids, it was determined that the two trees around the house are hybrid rather than native Butternut, and therefore, not protected under the ESA.

Eastern Red Cedar (*Juniperus virginiana*)

Small to medium-sized native coniferous tree commonly propagates disturbed and open areas. Site Occurrence: There are 16 eastern red cedar throughout the site along roadside and hedgerows.

Colorado Spruce (*Picea pungens*)

Common, non-native, ornamental landscape, coniferous tree. Site Occurrence: There are three (3) trees on site occurring across the road from the house and in the lawn area.

White Pine (*Pinus strobus*)

Medium-sized, fast-growing, native conifer with deep root system. Site Occurrence: There is one (1) white pine in the lawn area near the house.

Eastern Cottonwood (*Populus deltoides*)

Native to southern Ontario. Large, fast growing, and relatively short-lived tree. Shallow and wide-spreading root system. Site Occurrence: There is one (1) very large cottonwood along the east end of the shoreline.

Buckthorn (*Rhamnus cathartica*)

Buckthorn is a non-native, invasive, woody shrub that spreads rapidly along hedgerows and fields. It out-competes native vegetation, reduces biodiversity, degrades the quality of wildlife habitat (www.ontarioinvasiveplants.ca)

Site Occurrence: There are multi-stem groups of buckthorn at the corner of the lawn near the house and throughout the field perimeter hedgerows.

Crack Willow (*Salix fragilis*)

Non-native, naturalized, medium-sized trees named for their brittle branchlets. Hybrids with white willow occur commonly as naturalized populations along waterways. Site Occurrence: There are 17 very large willow trees along the Muscote Bay shoreline. Many have multiple large stems from the base and some have failed stems at base laying on the ground.

Common Lilac (*Syringa spp.*)

Non-native, woody, flowering shrub. Site Occurrence: There are three (3) common lilac groups near the house.

American elm (*Ulmus americana*)

Large native tree impacted by Dutch Elm Disease. Shallow and wide-spreading root system.

Site Occurrence: There is a larger elm along the south edge of the agricultural field and there are five along the shoreline ranging in size from 20-40cm DBH.

More information on Dutch Elm Disease can be found at the following link:

<https://treecanada.ca/resources/tree-killers/dutch-elm-disease/>

6. Discussion and Recommendations:

The inventory and assessment presented in this report will help to inform the design process and tree and vegetation preservation. Based on the Site Plan provided by Jewell Engineering, no work is planned within the dripline of any existing trees or vegetation.

6.1 Tree Damage

Tree damage can occur as a result of physical injury to the trunk, crown and roots if construction equipment is permitted close to trees. Physical injuries are permanent and can be fatal to a tree. Roots extend beyond the canopy of most trees and the majority of roots are in the upper 30 to 60 cm of soil. Root cutting and soil compaction can significantly impact the health and structural stability of a tree.

6.2 Tree Protection

Trees and vegetation beyond the limits of construction are all identified for preservation. Trees in proximity to construction shall have tree protection fencing measures well beyond the drip line to prevent damage that could result from construction traffic, parking, or material storage. Tree protection fencing shall be minimum 1.2m (4') hoarding (i.e. snow fencing) installed as shown on the Tree Preservation Drawing TP1. Tree protection shall be installed in such a way as to prevent damage to roots. Prior to commencement of any site activity, tree protection shall be installed. Tree protection fencing shall remain intact until all site activities, including landscaping, are complete. Areas within the tree protection fencing shall remain undisturbed and shall not be used for the storage of building materials or equipment. No grade changes shall be permitted within the tree protection fencing. Surplus soil, equipment debris or materials shall not be placed over the root systems of the trees within the tree protection areas. No contaminants shall be dumped or flushed on site. The owner or owner's agents should take every precaution necessary to prevent damage to trees or shrubs to be retained.

*All trees on the subject site are to be protected from construction impacts including access and storage.

* Refer to Figure 1 – Tree Protection Fence Detail

Photos Enclosed

Table 1 – Tree Inventory

***All trees to be protected from construction impacts including access and storage.**

TREE NO.	SPECIES	SIZE	CONDITION	COMMENTS
House/ Lawn Area				
1	Colorado spruce (<i>Picea pungens</i>)	~25cm DBH	Good	Adjacent driveway and overhead wires, inner branch dieback
2	Colorado spruce (<i>Picea pungens</i>)	~35cm DBH	Fair	Adjacent overhead wires, top 30% dieback
3	Norway maple (<i>Acer platanoides</i>)	73cm DBH	Fair	Front yard, exposed buttress roots with mechanical damage, canker with decay to north at 1.5m ht, vertical seam and included bark, small dead branches with decay, 10% dieback
4	Colorado spruce (<i>Picea pungens</i>)	~45cm DBH	Fair	Yard, branches to ground, 20% dead branches towards north
5	white pine (<i>Pinus strobus</i>)	29cm DBH	Good	Yard
6	Poplar (<i>Populus spp.</i>)	~80cm DBH	Dead	Yard, dead
7	paper birch (<i>Betula papyrifera</i>)	23/27cm DBH	Good	Yard, 2 stems included from base, slight lean, 10% dieback
8	hybrid butternut (<i>Juglans spp.</i>)	49cm DBH	Good	Yard, cankers on trunk, data sheet for field identification of butternut hybrids completed (value = 6)
9	Colorado spruce (<i>Picea pungens</i>)	50cm DBH	Good	Yard, 10% low branch dieback
10	honeylocust (<i>Gleditsia triacanthos</i>)	64cm DBH	Good	Yard, dead inner branches

TREE NO.	SPECIES	SIZE	CONDITION	COMMENTS
11	common lilac (<i>Syringa vulgaris</i>)	multi-stems 5-10cm DBH	Good	Yard, multi-stems from base
12	Plum (<i>Prunus spp.</i>)	multi-stems 10-15cm DBH	Good	Yard, dense group with buckthorn throughout
13	hybrid butternut (<i>Juglans spp.</i>)	42cm DBH	Good	Yard, data sheet for field identification of butternut hybrids completed (value = 8)
14	buckthorn (<i>Rhamnus cathartica</i>)	3 stems @15cm DBH	Invasive	Southeast corner of yard, 3 stems from base, invasive
15	silver maple (<i>Acer saccharinum</i>)	>100cm DBH	Fair-Poor	East of house, co-dominant and included stems from base, two large stems pruned from branch union with decay, uneven canopy from house, exposed surface roots near foundation of house
16	eastern white cedar (<i>Thuja occidentalis</i>)	3 @ 15cm DBH	Dead	Dead - crowded out by Norway maples
17	Norway maple (<i>Acer platanoides</i>)	4 multi-stem groups 10- 20cm DBH	Good	4 groups of 5-7 stems each, co-dominant at base forming dense colony
Agricultural Field				
18	shagbark hickory (<i>Carya ovata</i>)	~45cm DBH	Good	Middle of wheat field
19	shagbark hickory (<i>Carya ovata</i>)	~50cm DBH	Good	Middle of wheat field
20	American elm (<i>Ulmus americana</i>)	54cm DBH	Good	Edge of field
Shoreline (west to east)				

TREE NO.	SPECIES	SIZE	CONDITION	COMMENTS
21	green ash (<i>Fraxinus pennsylvanica</i>)	4 @ ~15-20cm DBH	Good	
22	crack willow (<i>Salix fragilis</i>)	~80cm DBH	Poor	
23	silver maple (<i>Acer saccharinum</i>)	~30cm DBH	Good	
24	green ash (<i>Fraxinus pennsylvanica</i>)	3 @ ~15cm DBH	Good	
25	American elm (<i>Ulmus americana</i>)	~15cm DBH	Good	
26	crack willow (<i>Salix fragilis</i>)	~15/15cm DBH	Good	
27	green ash (<i>Fraxinus pennsylvanica</i>)	~10cm DBH	Good	
28	green ash (<i>Fraxinus pennsylvanica</i>)	~20cm DBH	Good	
29	silver maple (<i>Acer saccharinum</i>)	~30cm DBH	Good	
30	crack willow (<i>Salix fragilis</i>)	2@ ~70cm DBH	Fair-Good	
31	American elm (<i>Ulmus americana</i>)	~20cm DBH	Good	
32	crack willow (<i>Salix fragilis</i>)	~70cm DBH	Fair-Good	
33	American elm (<i>Ulmus americana</i>)	~20cm DBH	Good	
34	American elm (<i>Ulmus americana</i>)	~30/40cm DBH	Good	
35	crack willow (<i>Salix fragilis</i>)	2@~100cm DBH	Fair-Good	
36	crack willow (<i>Salix fragilis</i>)	~80/20/30cm DBH	Fair-Good	

TREE NO.	SPECIES	SIZE	CONDITION	COMMENTS
37	crack willow (<i>Salix fragilis</i>)	~100cm DBH	Fair-Good	
38	American elm (<i>Ulmus americana</i>)	~20cm DBH	Good	
39	silver maple (<i>Acer saccharinum</i>)	~20cm DBH	Good	
40	crack willow (<i>Salix fragilis</i>)	~100cm DBH	Fair-Good	
41	crack willow (<i>Salix fragilis</i>)	~80cm DBH	Fair-Good	
42	crack willow (<i>Salix fragilis</i>)	~90cm DBH	Fair-Good	
43	crack willow (<i>Salix fragilis</i>)	~80cm DBH	Fair-Good	
44	crack willow (<i>Salix fragilis</i>)	5@~100cm DBH	Fair-Good	
45	crack willow (<i>Salix fragilis</i>)	~80cm DBH	Fair-Good	
46	green ash (<i>Fraxinus pennsylvanica</i>)	~10cm DBH	Good	
47	silver maple (<i>Acer saccharinum</i>)	~10cm DBH	Good	
48	crack willow (<i>Salix fragilis</i>)	2@~100cm DBH	Fair-Good	
49	green ash (<i>Fraxinus pennsylvanica</i>)	10cm DBH	Good	
50	eastern cottonwood (<i>Populus deltoides</i>)	>100cm DBH	Good-Fair	
51	crack willow (<i>Salix fragilis</i>)	~90cm DBH	Fair-Good	
52	crack willow (<i>Salix fragilis</i>)	~90cm DBH	Fair-Good	
53	crack willow (<i>Salix fragilis</i>)	~50cm DBH	Fair-Good	

TREE NO.	SPECIES	SIZE	CONDITION	COMMENTS
54	American elm (<i>Ulmus americana</i>)	~40cm DBH	Good	
55	silver maple(<i>Acer saccharinum</i>)	~60cm DBH	Good	Adjacent property shoreline
Hedgerows / Field Edge				
56	buckthorn (<i>Rhamnus cathartica</i>)	~10cm DBH	Invasive	
57	red cedar (<i>Juniperus virginiana</i>)	~10cm DBH	Good	West hedgerow
58	apple (Malus spp.)	~30cm DBH	Fair	West hedgerow
59	red cedar (<i>Juniperus virginiana</i>)	~10cm DBH	Good	West hedgerow
60	buckthorn (<i>Rhamnus cathartica</i>)	~5-10cm DBH	Invasive	West hedgerow
61	American elm (<i>Ulmus americana</i>)	~10cm DBH	Good	West hedgerow
62	staghorn sumac (<i>Rhus tyhpina</i>)	multi-stem ~5cm DBH	Good	West hedgerow
63	staghorn sumac (<i>Rhus tyhpina</i>)	multi-stem ~5cm DBH	Good	South edge
64	buckthorn (<i>Rhamnus cathartica</i>)	~5-10cm DBH	Invasive	South edge
65	red cedar (<i>Juniperus virginiana</i>)	row of 5 @ ~20cm DBH	Good	South edge

TREE NO.	SPECIES	SIZE	CONDITION	COMMENTS
66	red cedar (<i>Juniperus virginiana</i>)	~30cm DBH	Good	South edge
67	staghorn sumac (<i>Rhus typhina</i>)	multi-stem ~5cm DBH	Good	South edge
68	red cedar (<i>Juniperus virginiana</i>)	6 @ ~20cm DBH	Good	South edge
69	green ash (<i>Fraxinus pennsylvanica</i>)	36cm DBH	Good	East hedgerow
70	red cedar (<i>Juniperus virginiana</i>)	~5cm DBH	Good	East hedgerow
71	green ash (<i>Fraxinus pennsylvanica</i>)	5 @ ~5cm DBH	Good	North roadside
72	red cedar (<i>Juniperus virginiana</i>)	~10cm DBH	Good	North roadside
73	green ash (<i>Fraxinus pennsylvanica</i>)	5 @ ~10-15cm DBH	Good	North roadside
74	green ash (<i>Fraxinus pennsylvanica</i>)	~30cm DBH	Good	North roadside

Site Photos



Tree No. 1



Tree No. 2



Tree No. 3



Trees No. 4, 5, 6



Trees No. 6, 7, 8



Trees No. 9, 10



Tree No. 10



Tree No. 9



Tree No. 15



Tree No. 15



Tree No. 17



Shoreline elm and willow



Shoreline vegetation



Shoreline willow



Shoreline willow



Shoreline eastern cottonwood



Eastern red cedar



Hedgerow – buckthorn, eastern red cedar



Eastern red cedar



Tree No. 69 – green ash

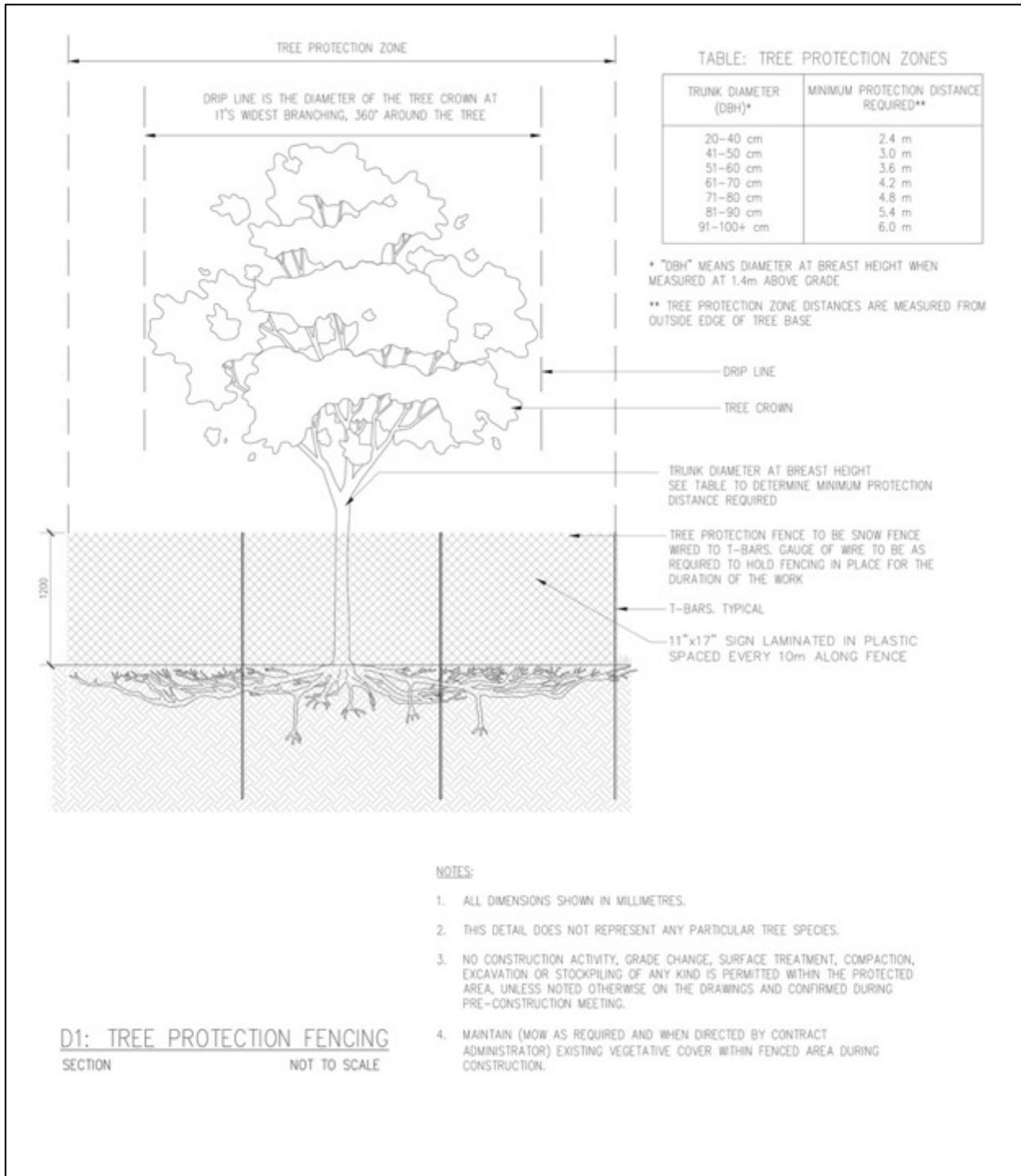


Figure 1

References:

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Certification:

I certify that all the statements of fact in this report are true, complete, and accurate to the best of my knowledge and belief, and that they are made in good faith.



Gina Brouwer, ISA Certified Arborist ON-0937A