Tree Inventory and Preservation Plan Report 157 and 165 Cross Avenue Oakville, Ontario

prepared for

Cross Realty Incorporated 90 Wingold Avenue, Unit 1 Toronto, Ontario M6B 1P5

prepared by



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29 June 2023

KUNTZ FORESTRY CONSULTING INC Project P3822

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1.0 Introduction

Kuntz Forestry Consulting Inc. was retained by Cross Realty Incorporated to complete a Tree Inventory and Preservation Plan as part of a proposed construction application for the properties located at 157 and 165 Cross Avenue in the Town of Oakville. The subject properties are located on the north side of Cross Avenue and on the west side of Trafalgar Road, within a commercial area.

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

- Prepare an inventory of tree resources 10cm diameter at breast height (DBH) and greater on and within six metres of the subject property and trees of all sizes within the road right-of-way;
- Evaluate potential tree saving opportunities based on proposed development plans; and
- Document the findings in a Tree Inventory and Preservation Plan Report.

The results of the evaluation are provided below.

2.0 Methodology

2.1 Tree Inventory

Trees measuring 10cm DBH and greater on and within six metres of the subject property and trees of all sizes within the road right-of-way were identified in the tree inventory. Trees were located using the topographic survey provided and measurements taken from known points in-field. Trees included in the inventory were tagged with numbers 757-796. Small landscape trees on adjacent property and within the road right-of-way are not tagged and identified with letters A-D. Refer to Table 1 for the results of the tree inventory, Figure 1 for the location of the trees, and Appendix A for photographs of the trees.

Tree resources were visually assessed utilizing the following parameters:

Tree # – Number assigned to trees that corresponds to Figure 1.
Species – Common and botanical names provided in the inventory table.
DBH – Diameter (cm) at breast height, measured at 1.4m above the ground.
Condition – Condition of tree considering trunk integrity (TI), crown structure (CS) and crown vigor (CV). Condition ratings include poor (P), fair (F), and good (G).
Crown Dieback – Percentage of dead branches within the crown.
Dripline – Crown diameter (m).
Comments – Any other relevant tree condition information.

2.2 Tree Valuation

A valuation was calculated for Town-owned trees. The value was calculated using the Trunk Formula Technique. This method is described in the Guide for Plant Appraisal, 10th Edition (CTLA 2018). The Ontario Supplement (2003) provides regionally relevant data pertaining to basic costs for trees.

Trunk Formula Technique

This method is used for trees that are larger than what is commonly available for transplant from a nursery. The Unit Tree Cost of the replacement tree is derived from a survey of nurseries or supplied by the Regional Plant Appraisal Council and published within the Ontario Supplement (2003). For Ontario, the Unit Tree Cost has been set at \$6.51/cm² within the Supplement and this value has been used for the calculation.

The Basic Tree Cost is calculated by multiplying the Unit Tree Cost by the cross-sectional area of the subject tree. For multi-stemmed trees, the appraised trunk area considers the cross-sectional area of all stems. The Appraised Value is calculated by multiplying the Basic Reproduction Cost by the three depreciation factors (Condition Rating, Functional Limitation Rating, and External Limitation Rating, as described in the Guide).

The appraised value is therefore calculated using the following equation:

Basic Tree Cost = Appraised Tree Trunk Area X Unit Tree Cost

Appraised Value = Basic Tree Cost X Condition Rating X Functional Limitation Rating X External Limitation Rating

Functional Limitation Ratings and External Limitation Ratings are calculated according to the methods outlined in the guide. Condition Ratings were calculated based on the assessed condition of the trees on the site and in accordance with the guide. The final values were rounded to the nearest \$100 for values greater than \$2000, and to the nearest \$5 for values less than \$2000.

2.3 Tree Replacement

The Town of Oakville requires replacement for healthy by-law protected tree removals. The ration of required replacement plantings per tree removal is below:

DBH of Trees to be Removed	Number of Replacement Trees
First tree 15-24cm DBH	1
Second and more trees 15-24cm DBH	2
25-34cm DBH	3
35-44cm DBH	4
45-54cm DBH	5
55-64cm DBH	6
65-74cm DBH	7
75-84cm DBH	8
85-94cm DBH	9
95-104cm DBH	10
105-114cm DBH	11
>115cm DBH	12

3.0 Existing Site Conditions

The subject property is currently occupied by two commercial buildings and associated surface parking. Tree resources exist in the form of landscape trees and natural generations. Refer to Figure 1 for the existing site conditions.

4.0 Individual Tree Resources

Field assessments for the tree inventory were conducted on 21 June 2023. The tree inventory documented 44 trees on and within six metres of the subject property and within the road right-of-way.

Tree resources are composed of Norway Maple (*Acer platanoides*), Northern Catalpa (*Catalpa speciosa*), Russian Olive (*Elaeagnus angustifolia*), Green Ash (*Fraxinus pennsylvanica*), Shademaster Honey Locust (*Gleditsia triacanthos 'inermis'*), White Mulberry (*Morus alba*), Austrian Pine (*Pinus nigra*), Red Oak (*Quercus rubra*), Willow (*Salix spp.*), Ivory Silk Lilac (*Syringa reticulata 'Ivory Silk'*), Little-leaf Linden (*Tilia cordata*), and Siberian Elm (*Ulmus pumila*).

Refer to Table 1 for the detailed tree inventory and Figure 1 for the location of trees reported in the tree inventory.

5.0 Proposed Development

The proposed development includes the demolition of the existing buildings and the construction of a 58-storey and a 44-storey buildings. The construction of new road is proposed on the north and east side of the subject properties. Refer to Figure 1 for the existing site conditions and the proposed site plan.

6.0 Discussion

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

6.1 Development Impacts/Tree Removals

The removal of 43 trees is required to accommodate the proposed development, including Trees 757-769, 771-796, and A-D. All trees that require removal have direct conflicts with the proposed development. The removal of Trees A-C is required due to conflicts with service easement. Trees A-C are located on the adjacent property; written consent if required prior to their removal. Refer to Figure 1 for the locations of the required tree removals.

6.2 Tree Preservation

Preservation of Tree 770 will be possible with the use of appropriate tree protection measures as indicated on Figure 1. The existing fence along the property boundary will suffice as tree preservation fence. Refer to Figure 1 for the location of required tree preservation fencing, general Tree Protection Plan Notes, and tree preservation fence details.

6.3 Tree Replacement

Planting of 89 replacement trees is required for the removal of 43 trees on the subject property. Any tree that will not be planted on the subject property will be provided in cash-in-lieu. Refer to Table 1 for the replacement plantings for each tree removal.

6.4 Tree Valuation

Refer to Table 2 for the results of the tree valuation. The total value of all Town-owned trees is \$2,635.00.

7.0 Summary and Recommendations

Kuntz Forestry Consulting Inc. was retained by Cross Realty Incorporated to complete a Tree Inventory and Preservation Plan as part of a development application for the properties located at 157 and 165 Cross Avenue in the Town of Oakville. A tree inventory was conducted and reviewed in the context of the proposed site plan.

The findings of the study indicate a total of 44 trees on and within six metres of the subject properties and within the right-of-way. The removal of 43 trees is required to accommodate the proposed development. The remaining 1 tree can be saved provided appropriate tree protection measures are installed prior to development.

The following recommendations are suggested to minimize impacts to trees identified for preservation. Refer to Figure 1 for the location of the required tree protection fencing, general Tree Protection Plan Notes, and tree preservation detail.

- Tree protection barriers and fencing should be erected at locations as prescribed on Figure 1. All tree protection measures should follow the guidelines as set out in the tree preservation plan notes and the tree preservation fencing detail.
- No construction activity including surface treatments, excavations of any kind, storage of materials or vehicles, unless specifically outlined above, is permitted within the area identified on Figure 1 as a tree protection zone (TPZ) at any time during or after construction.
- Branches and roots that extend beyond 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 is 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 measures are implemented.

Respectfully Submitted, Kuntz Forestry Consulting Inc.

Kaho Hayashi

Kaho Hayashi, B.Sc., M.Sc.F. Associate Forest Ecologist ISA Certified Arborist #ON-2153A

8.0 References

Council of Tree & Landscape Appraisers, 2019. Guide for Plant Appraisal, 10th Edition.

Ontario Supplement to the Guide for Plant Appraisal – 8th Edition, 2003. ISA Ontario. International Society of Arboriculture, Champaign, Illinois. 26 pp. Updated 2003.

Limitations of Assessment

Only the tree(s) identified in this report were included in the inventory. The assessment of the trees presented in this report has been made using accepted arboricultural techniques. These may include a visual examination taken from the ground of all the above-ground parts of the tree for structural defects, scars, external indications of decay such as fungal fruiting bodies, evidence of attack by insects, discoloured foliage, the condition of any visible root structures, the degree of lean (if any), the general condition of the trees and the identification of potentially hazardous trees or recommendations for removal (if applicable). Where trees could not be directly accessed (i.e. due to obstructions, and/or on neighbouring properties), trees were assessed as accurately as possible from nearby vantage points.

Locations of trees provided in the report are determined as accurately as possible based on the best information available. If official survey information is not provided, tree location in the report may not be exact. In this case, if trees occur on or near property boundaries, an official site survey may be required to determine ownership utilizing specialized survey protocol to gain precise location.

Furthermore, recommendations made in this report are based on the site plans that have been provided at the time of reporting. These recommendations may no longer be applicable should changes be made to the site plan and/or grading, servicing, or landscaping plans following report submission.

Notwithstanding the recommendations and conclusions made in this report, it must be recognized that trees are living organisms, and their health and vigor constantly change over time. They are not immune to changes in site conditions or seasonal variations in the weather conditions. Any tree will fail if the forces applied to the tree exceed the strength of the tree or its parts.

Although every effort has been made to ensure that this assessment is reasonably accurate, the trees should be re-assessed periodically. The assessment presented in this report is valid at the time of inspection.

Table 1. Tree Inventory

Location:	157 and 165 Cross Avenue, Oakville	
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Date: 21 June 2023 Surveyors: KH

Tag #	Common Name	Scientific Name	DBH	TI	CS	CV	CDB	DL	mTPZ	Comments	Ownership	Action	Comp.
757	Norway Maple	Acer platanoides	36.0	Ρ	Р	Ρ	75	2.0	3.0	Lost leader, pruning wounds (H) with rot, only 2 branches left, frost crack (H)	Private / Neighbour	Remove	0
758	Norway Maple	Acer platanoides	45.5	F	Р	Р	60	4.5	3.0	Sweep (L), half crown dead, dead leader	Private / Neighbour	Remove	0
759	Norway Maple	Acer platanoides	29.5	FG	F	PF	30	3.0	2.4	Co-dominance at 2m, dead branches (M)	Neighbour	Remove	0
760	Norway Maple	Acer platanoides	43.0	FG	F	PF	30	4.5	3.0	Union at 2m, dead leader, growth deficit (L)	Private / Neighbour	Remove	0
761	Norway Maple	Acer platanoides	42.0	G	G	FG	15	4.5	3.0		Private / Neighbour	Remove	4
762	Norway Maple	Acer platanoides	47.0	PF	F	PF	40	5.0	3.0	Missing bark - no response growth, dead branches (M)	Private / Neighbour	Remove	0
763	Norway Maple	Acer platanoides	40.5	FG	F	F	20	5.0	3.0	Dead leader, co-dominance at 1.8m, epicormic branches (M)	Neighbour	Remove	4
764	Norway Maple	Acer platanoides	32.0	G	G	F	15	4.0	3.0		Private / Neighbour	Remove	3
765	Siberian Elm	Ulmus pumila	~46, 32	FG	G	F	15	5.0	3.6	Co-dominance at 1m with included bark (M), deadwood, dead branches (L)	Private	Remove	6
766	Norway Maple	Acer platanoides	35.0	F	G	PF	30	4.0	3.0	Crack with rot - no response growth, lost leader	Private / Neighbour	Remove	0
767	Norway Maple	Acer platanoides	26.0	Ρ	F	F		4.0	2.4	Half of stem lost bark, hollow, lean (L) to east, lost leader at 2m ==> hazard	Private	Remove	0
768	Russian Olive	Elaeagnus angustifolia	17.0	FG	FG	FG		2.0	2.4	Bow (L) to south	Private	Remove	1
769	Siberian Elm	Ulmus pumila	14.0	G	G	G		2.0	2.4		Private	Remove	0
770	Norway Maple	Acer platanoides	40.5	FG	G	FG	10	4.5	3.0	Co-dominance at 3m	Neighbour	Preserve	
771	Siberian Elm	Ulmus pumila	~54	G	G	FG	10	4.5	3.6		Private	Remove	5
772	Green Ash	Fraxinus pennsylvanica	5-20 (avg. 12)	F	Ρ	Р	75	2.0	2.4	Coppice growth (H) from stump, 15 stems but larger stems dead	Private	Remove	0
773	Siberian Elm	Ulmus pumila	33, 25	FG	G	F	25	3.5	3.0	Co-dominance at 0.6m with included bark (M), dead branches (M)	Private	Remove	4
774	Siberian Elm	Ulmus pumila	~34, 26	FG	G	FG	5	4.5	3.0	Co-dominance at base	Private	Remove	4
775	Austrian Pine	Pinus nigra	38.5	G	G	G		3.5	3.0		Private	Remove	4
776	Little-leaf Linden	Tilia cordata	20.0	G	G	G		2.5	2.4		Private	Remove	2
777	Austrian Pine	Pinus nigra	35.0	FG	FG	FG		3.0	3.0	Lean (L) to southwest, co-dominance at 2m, asymmetrical crown (M)	Private	Remove	4
778	Austrian Pine	Pinus nigra	19.0	FG	G	G		1.5	2.4	Understory tree, crook (L)	Private	Remove	2
779	Willow	Salix spp.	100.0	F	G	F	20	6.0	6.0	Co-dominance at 2.5m with 6 stems, deadwood, dead branches (L), epicormic branches (M)	Private	Remove	10
780	Little-leaf Linden	Tilia cordata	34.5	G	G	G		3.0	3.0	Epicormic branches (M)	Neighbour	Remove	3

781	Little-leaf Linden	Tilia cordata	14, 11.5	FG	G	G		2.5	2.4	Union at 1m	Private	Remove	2
782	Norway Maple	Acer platanoides	18.5, 13, <10	FG	G	FG		3.0	2.4	Union at base and 0.6m with 5 stems, epicormic branches (M)	Private / Neighbour	Remove	2
783	White Mulberry	Morus alba	13.5, 11, 9.5	FG	G	F		3.0	2.4	Union at base	Neighbour	Remove	2
784	Siberian Elm	Ulmus pumila	20, 17.5	FG	G	FG	10	3.0	2.4	Co-dominance at 0.5m with included bark (M), bow (L) to north	Private	Remove	3
785	Siberian Elm	Ulmus pumila	22, 16.5, 15	FG	G	FG		2.5	3.0	Union at base, epicormic branches (M)	Private	Remove	3
786	Siberian Elm	Ulmus pumila	19.5, 18	FG	G	FG		2.0	2.4	Union at base, epicormic branches (H)	Private	Remove	3
787	Siberian Elm	Ulmus pumila	19.0	FG	G	FG		2.0	2.4	Co-dominance at 3m with included bark (M)	Private	Remove	2
788	Siberian Elm	Ulmus pumila	23.5, 18.5, 16, 15	FG	G	FG		3.0	3.0	Union at base and 0.2m, exposed roots (L)	Private	Remove	4
789	Honey Locust (shademaster)	Gleditsia triacanthos inermis	46.0	G	G	G		4.5	3.0		Private	Remove	5
790	Green Ash	Fraxinus pennsylvanica	~60	Ρ	Ρ	Ρ	75	3.5	3.6	Main stem dead, only epicormic branches (M) alive	Neighbour	Remove	0
791	Red Oak	Quercus rubra	~28	G	G	G		3.5	2.4		Town	Remove	Valuation
792	Red Oak	Quercus rubra	24.0	G	G	G		3.0	2.4		Town	Remove	Valuation
793	Little-leaf Linden	Tilia cordata	18, 16	FG	G	FG		2.5	2.4	Co-dominance at 1.2m	Town	Remove	Valuation
794	White Mulberry	Morus alba	28.0	F	G	F	10	3.0	2.4	Stem wound (M) with rot, co-dominance at 2m	Private	Remove	3
795	White Mulberry	Morus alba	22.5	G	G	F	20	3.0	2.4		Private	Remove	2
796	Honey Locust (shademaster)	Gleditsia triacanthos inermis	14.0	G	G	G		2.0	2.4		Private	Remove	0
А	Northern Catalpa	Catalpa speciosa	16.0	G	G	G		2.0	2.4		Neighbour	Remove	2
В	Northern Catalpa	Catalpa speciosa	8.0	FG	G	FG		1.5	1.8	Bow (L) to north	Neighbour	Remove	0
С	Northern Catalpa	Catalpa speciosa	13.5	F	G	FG		1.5	2.4	Stem wound (M) at base with rot - no response growth	Neighbour	Remove	0
D	lvory Silk Lilac	Syringa reticulata 'Ivory Silk'	6.5	G	G	G		1.0	1.8		Town	Remove	Valuation
			-									TOTAL	89

Codes								
DBH	Diameter at Breast Height	(cm)						
TI	Trunk Integrity	(G, F, P)						
CS	Crown Structure	(G, F, P)						
CV	Crown Vigour	(G, F, P)						
CDB	Crown Dieback	(%)						
DL	Dripline in radius	(m)						
mTPZ	minimum Tree Protection Zone	TPZ (m) based on Town of Oakville's Tree Protection During Construction (Procedure EN-TRE-001-001) from base of tree						
A. mTPZ	Actual minimum Tree Protection Zone	Actual TPZ (m) achievable during construction from base of tree						
Ownership Private, Neighbour, Town								
~ = estimate; (L) = light; (M) = moderate; (H) = heavy; G = good; F = fair; P = Poor								

Table 2. Tree Valuation of Town-Owned Trees

						Annraisa					Depreciation						
Location: 157 and 165 Cross Avenue, Oakville					Area (RPAC)		Basic Tree Cost (\$)	Rating	Limitation	Limitation Rating	Appraised Tree Value		Minimum Value Per Tree (\$)		Final opraised ee Value		
Tree #	Common Name	Scientific Name	DBH	DBH*	00	(cm²)				(%)	Rating (%)	(%)					
791	Red Oak	Quercus rubra	~28	28	Good	616	\$	3.44	2118.19	0.8	0.8	0.8	\$	1,084.51	\$	744.00	\$ 1,085.00
792	Red Oak	Quercus rubra	24	24	Good	452	\$	3.44	1556.22	0.8	0.8	0.8	\$	796.79	\$	744.00	\$ 795.00
793	Little-leaf Linden	Tilia cordata	18, 16	24	Fair/Good	452	\$	3.44	1556.22	0.7	0.8	0.8	\$	697.19	\$	744.00	\$ 695.00
D	lvory Silk Lilac	Syringa reticulata 'Ivory Silk'	6.5	6.5	Good	33	\$	3.44	114.15	0.8	0.8	0.8	\$	58.44	\$	744.00	\$ 60.00
																TOTAL	\$ 2,635.00

Appendix A. Photographs of Trees



Image 1. Tree 757



Image 2. Trees 758 (left) and A



Image 3. Trees 759 (left) and 760



Image 4. Tree 761

Image 5. Tree 762



Image 6. Tree 763

Image 7. Tree 764 Image



Image 8. Tree 765

Image 9. Tree 766



Image 11. Trees 768 (right) and 769



Image 12. Tree 770

Image 13. Tree 771



Image 14. Trees 772 (left) and 773

Image 15. Tree 774



Image 16. Tree 775

Image 17. Tree 776



Image 18. Tree 777



Image 19. Trees 778 (left) and 779



Image 20. Trees 780 (left) and dead spruce with buckthorn

Image 21. Tree 781



Image 22. Trees 782 (left) and 783



Image 23. Trees 784-788 (from left)



Image 24. Tree 789

Image 25. Tree 790



Image 26. Tree 791

Image 27. Tree 792



Image 28. Tree 793



Image 29. Trees 794 (left) and 795



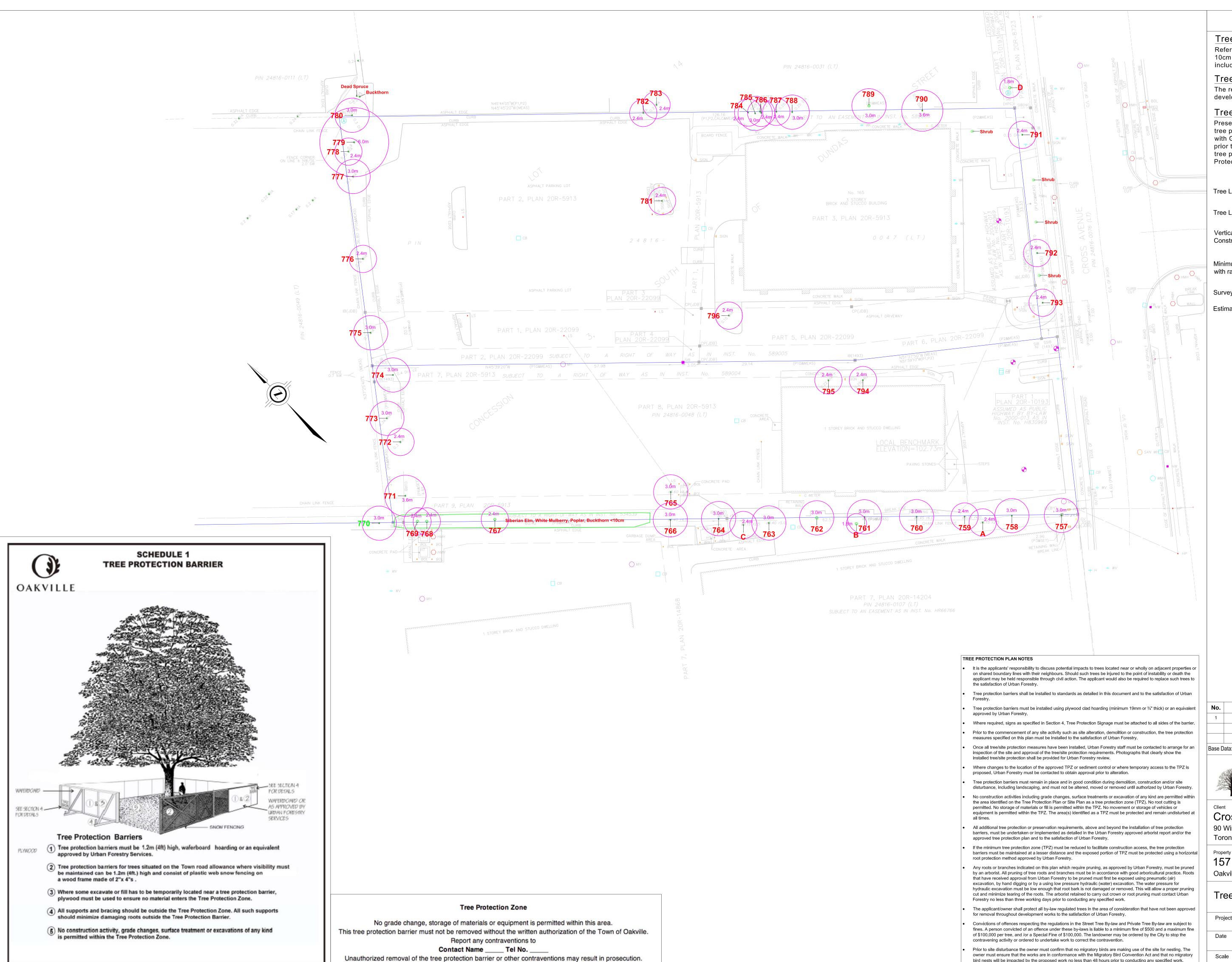
Image 30. Tree 796

Image 31. Tree B



Image 32. Tree C

Image 33. Tree D



bird nests will be impacted by the proposed work no less than 48 hours prior to conducting any specified work.

LEGEND

Tree Inventory

Refer to Table 1 of the report dated 29 June 2023. Trees greater than 10cm DBH on and within six metres of the subject property were included in the inventory.

Tree Removals

The removal of 43 trees will be required to accommodate the proposed development as indicated in RED labels.

Tree Preservation

Preservation of the remaining 1 tree will be possible with appropriate tree protection measures. Trees identified for preservation are indicated with GREEN labels. Tree protection measures must be implemented prior to construction. Minimum tree preservation zones and required tree preservation fencing is indicated in MAGENTA. Refer to Tree Protection Plan Notes for preservation details.

Tree Label (GREEN), preservation recommended	n
Tree Label (RED), removal required	n
Vertical Hoarding during Demolition & Construction of House (Thick MAGENTA)	
Minimum Tree Protection Zone (MAGENTA Circle, with radius, in metres)	×
Surveyed tree location	٠
Estimated tree location by KFCI	0

о.	Issue/Revisions	Date	Ву
1	Report Submission	29 Jun. '23	КН
se D	ata: J.D. Barnes Ltd. (topo), Cross Realty Incorporated (site plan)		
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90 '	t Toss Realty Incorporated Wingold Avenue, Unit 1 ronto, Ontario M6B 1P5		
	erty 57 and 165 Cross Avenue kville, ON L6K 1R3		

Tree Inventory and Preservation Plan

Project P3822

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Figure