ATTACHMENT 7
158-166 WALLACE

7 OAKS TREE CARE & URBAN FORESTRY CONSULTANTS INC.

TREE INVENTORY & PLAN OF PRESERVATION
158 & 166 WALLACE STREET
CITY OF VAUGHAN

Prepared for:	King Home Construction Inc.
Our Matter:	TA-16-038
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1.0 BACKGROUND INFORMATION

1.1 Introduction

This report has been prepared to address the proposed development at 158 and 166 Wallace Street in Vaughan. This report will address the requirements set out by the City of Vaughan for preparation of an Arborist Report and Tree Preservation Plan. All conclusions and recommendations in this report are based on the field data collected, as well as the proposed Site Plan, Grading Plan and Servicing Plans.

This report is to be read in conjunction with the Tree Preservation Plan (Drawing No. TP1).

1.2 General Overview

The subject property at 158-166 Wallace Street is located on the west side of Wallace Street at the southern extent of the street. Currently, there is one two-storey residence on site with a gravel driveway located south of the existing residence. There is a detached frame garage at the southern boundary of the site. The topography of the site is comprised of hilly terrain, with an extensive slope from west to east. The grade rises approximately 10 metres from east to west. There is a large concrete retaining wall along the central portion of the southern boundary. The western portion of the site is adjacent to Canadian National Railway lands and is densely treed.

From the available site survey, the legal description of the site is Part of Lot 6, Concession 7, City of Vaughan.

The vegetation on-site is comprised of mainly landscape plantings of shrubs around the existing residence and lower-lying areas. Further to the west, further up-slope, the vegetation is naturally occurring and dense. The predominant tree species within this are Black Walnut and Green Ash. The understory is comprised predominantly of natural regeneration of Black Walnut, Green Ash, European Buckthorn and Honeysuckle. Refer to Figure 1 for an aerial view of the subject site:

Figure 1. Aerial view of 158-166 Wallace Street. Boundaries are approximate.

1.3 Purpose of Assignment

7 Oaks Tree Care & Urban Forestry Consultants was retained to prepare a Tree Inventory, Arborist Report and Preservation Plan for a proposed multi-unit residential development project.

The intent of this report is to:

1. Identify all of the trees 10 cm or larger in diameter at breast height (1.4m above grade; *DBH*) located on the subject land and located within 6 metres of the subject land on adjacent private property
2. Identify trees of any size located on the adjacent municipal road allowance or within 6m on adjacent municipal property
3. Provide prescriptions for tree preservation, including mitigation of any tree injuries, as well as rationale for any tree removals
4. Prepare a Plan of Preservation with regard to the proposed development plans
5. Prepare recommendations for tree replacement, as required

1.4 Nature of Proposed Development

The proposed re-development of the site includes:

- Demolition of the existing residence and frame garage
- Construction of two townhouse complexes, comprised of 4 units each including integral garages and asphalt driveways
- Associated site grading and servicing
- Construction of an engineered berm and crash wall associated with the nearby CN rail line

2.0 METHODOLOGY

The following sections outline the methodology used in the preparation of this report as well as during the requisite field work.

All data used in this report is empirical in nature, unless stated otherwise.

All measurements in this report are expressed in the metric system of measurement.

2.1 Document Review

A review of all available drawings was conducted. This included:

- A Boundary and Topographic Survey, as prepared by KRCMAR, and dated July 27, 2016
- A Site Plan, as prepared by Caricari Lee Architects, and dated February 8, 2023
- Floorplans, as prepared by Caricari Lee Architects, and dated February 8, 2023
- Elevations, as prepared by Caricari Lee Architects, and dated February 8, 2023
- A Conceptual Crash Wall/Earth Berm Plan, as prepared by WSP and dated August 2020
- A Site Grading Plan, as prepared by WSP and dated February 1, 2023
- A Site Servicing Plan, as prepared by WSP and dated February 1, 2023

2.2 Field Study

On site inspection and data collection was initiated on July 13, 2016. A reassessment of the trees on the site was completed on July 31, 2019.

All trees located on the subject lands or within six metres of the subject lands whose diameter at breast height, 1.4 metres above grade (DBH), were 10 cm or larger were tagged, inventoried and assessed and are referred to in this report as *significant tree*.

All trees, regardless of size, located on adjacent municipal property within six metres of the subject lands, were tagged, inventoried, and assessed and are referred to in this report as *municipal tree*.

Any species ranked as Endangered, Threatened, or of Special Concern, located on the subject lands or within six metres of the subject lands, were tagged, inventoried and assessed, regardless of size. These trees are referred to in this report as *species at risk*.

2.3 Tree Species

All inventoried trees have been identified by their regionally used common name followed by their most current taxonomical nomenclature.

2.4 Tree Locations

The locations of all significant, municipal, and species at risk trees, were originally surveyed and plotted on A Boundary and Topographic Survey, as prepared by KRCMAR, and dated July 27, 2016

This information was utilized and accurately appears in this report along with the Site Plan as the Tree Preservation Plan (Drawing No. TIPP-01).

See Enclosure

2.5 Tree Sizes

All significant trees were sized by measuring their trunk diameter at 1.4 metres above existing grade. This is referred to as the diameter at breast height (DBH), as per accepted arboricultural standards.

All municipal and species at risk trees with a DBH less than 9 cm had their diameter measured at 15 cm above existing grade. This is referred to as the calliper diameter of the tree.

2.6 Tree Conditions

All inventoried trees are assessed based on a visual inspection of the above-ground portion of the tree, including root flare, trunk, limbs, branches and twigs, and foliage.

Any existing abiotic (environmental, physical or mechanical damage), or biotic (insects and disease) are also recorded and contribute to the overall assessment of condition.

A generalized assessment system was employed to describe the overall condition of each inventoried tree. A 5 level scale of plant health and structure with descriptors of very good, good, fair, poor, and very poor was used to quantify the range of the tree's condition.

Very Good condition was applied to a tree whose health, growth rate, crown closure and structural integrity was greater than eighty percent of a perfect specimen.

Conversely, Very Poor condition was applied to a tree whose condition is less than twenty percent of a perfect specimen.

The table below provides a summary of factors and rating scale for assessed plant condition:

Table 1. Condition assessment factors

Factors Assessed		Assessed Condition	Percentage of a Perfect Specimen
Roots · Collar/flare · Mechanical injury · Girdling roots · Insects/disease · Decay/fungi **Trunk** · Cavities · Mechanical injury · Cracks · Swollen/sunken areas · Insects/disease · Fungi **Foliage/Buds** · Size of foliage/buds · Foliage colour · Foliage injury · Dieback of buds/foliage · Insects/disease	**Scaffold Branches** · Attachments/included bark · Taper · Distribution · Decay/cavities · Deadwood · Insects/disease **Small Branches/Twigs** · Vigour/growth rates · Distribution · Appearance · Insects/disease · Dieback (Adapted from the CTLA *Guide for Plant Appraisal, 9th Ed.)*	Very Good	100 – 81
		Good	80 – 61
		Fair	60 – 41
		Poor	40 – 21
		Very Poor	20 – 0

3.0 TREE INVENTORY

A total of ninety-five (95) trees were inventoried. The following table summarizes the number and category of the inventoried tree:

Table 2. Tree Inventory summary for 158-166 Wallace Street

Category #	Category	Quantity
SL	Significant trees (≥ 10 cm DBH) located on Subject Lands	58
PP	Significant trees (≥ 10 cm DBH) located on adjacent Private Property within 6m	12
MT	Trees of all diameters situated within the City road allowance adjacent to the subject site.	9
RMT	Trees measuring 10 cm diameter of greater located along the adjacent Regional road allowance	15
B	Significant tree (≥ 10 cm DBH) located on a shared Boundary line	1
SAR	Species At Risk trees identified	0
Total number of Trees Inventoried		**95**

Refer to Appendix 1 for the detailed inventory and condition assessment of each individual tree.

Refer to Appendix 2 for tree photographs.

4.0 TREE PRESERVATION, PROTECTION & MANAGEMENT

This section outlines the prescriptions for tree preservation, protection and maintenance. This includes and required tree removals, pruning, fertilizing, root pruning and protection, mulching, and installation of tree protection hoarding.

All tree maintenance shall be carried out to the most current arboricultural standards and only by qualified arborists who are certified to practice in the province of Ontario.

Trees recorded in the inventory are assigned one of four levels of protection and/or preservation/removal:

1. **Preserve, Protect & Maintain**

   Includes protection with tree preservation hoarding, as well as pre- and post-construction arboricultural works

2. **Preserve & Protect**

   Includes the installation of tree protection hoarding; no maintenance will be required

3. **Retain**

   No protection or maintenance measures are required. Installation of tree protection barriers is optional

4. **Remove**

   Due to site or development constraints, tree condition or location, retention is not warranted.

4.1 Tree Protection Barriers

All trees scheduled to be ***Preserved, Protected & Maintained*** or ***Preserved & Protected*** shall have their critical rooting zones protected with the installation of tree protection barriers to form a Tree Protection Zone (TPZ).

Tree protection barriers shall be installed as per City of Vaughan *Heavy Duty Tree Hoarding Protection Detail* (Drawing No. ULA 110A) or Region of York *Tree Protection Zone (TPZ) Barrier* and *Tree Protection Zone (TPZ) Signage* (Detail NHF-400 and NHF-401). Refer to Appendix 3

The tree protection barriers shall be installed at the approved location and shall be maintained in its original location and condition until all construction activities within the site have ceased and all equipment is removed from the site. No equipment or material storage, flushing of fuel or washing of equipment is allowed within the TPZ.

Notification to the City of Vaughan that the tree protection barriers have been erected shall be given immediately after installation.

Approval from the City of Vaughan that the tree protection barriers are satisfactory shall be obtained prior to any further works commencing on the site.

4.2 Tree Maintenance

Specifications for tree maintenance are outlined in this section. This includes maintenance prior to construction, remedial action during construction and post-construction maintenance.

4.2.1 Pre-Construction Maintenance

Prior to any construction works commencing, all trees scheduled to be ***Preserved, Protected & Maintained*** shall undergo preventative maintenance. This may include:

i. Pruning

Trees shall be properly pruned to encourage healthy, vigorous growth. This includes the removal of deadwood, and crown cleaning and thinning. Additionally, any branches or limbs found to interfere with the proposed construction works shall be removed at this time to prevent improper pruning or mechanical injury.

ii. Fertilizing

The critical rooting zones specified to be protected with tree protection hoarding shall be deep root fertilized to assist the tree in mitigating any possible impacts or stresses caused by the proposed construction.
A suspendable fertilizer formulation of 30-8-8, 60% U.F. with a complete micronutrient package shall be used and applied at a rate of 1.2 kg nitrogen per $100m^2$.
Delivery of the fertilizer formulation shall be by high pressure injection using water as a medium.

4.2.2 Tree Maintenance during Construction

During the construction phase of development, mitigation of problems caused by excavation and other construction activities must be addressed. This shall include:

i. Excavation Monitoring & Root Pruning

During construction, any excavation that will affect the minimum TPZ of a tree shall be monitored by a certified arborist. When excavation is to occur within the minimum TPZ of a tree, the roots should be pruned first, prior to mechanical excavation of soils.

Where excavation is planned, the edge of the excavation must be clearly marked. The area can be cut utilizing root pruning equipment similar to that designed for curb and sidewalk repair. Alternatively, manual (hand) excavation or an approved alternate (i.e. air spade, hydro-vac) can be used to remove soils at the edge of the proposed excavation. All pre-construction excavation shall be monitored by an Ontario Qualified Arborist or ISA Certified Arborist. Exposed roots at the edge of the excavation should be immediately pruned back to the soil surface by the attending Arborist using appropriate, clean and sharp tools.

Should the excavation be deemed to be severe within the minimum TPZ of the tree, an exploratory excavation should be completed prior to any root severing. Hand excavation, pneumatic air spade or hydro-vac excavation by a qualified individual to expose a trench a minimum of 1.0m deep at the edge of the proposed excavation should be completed. The exposed trench should then be reviewed by the project Arborist (and any municipal staff, if deemed necessary). Exposed roots can then be cleanly cut using sharp tools (bypass pruners, loppers, hand saw, chainsaw) by the project Arborist upon municipal approval. No treatment to the cut root end shall be applied. The trench should be backfilled

immediately upon root severance and TPZ fencing maintained at the excavation edge.

ii. Irrigation

During construction, any trees that are subject to drought conditions shall have their critical rooting zones waters to maintain a moist/fresh moisture regime.

iii. Accidental Damage to Trees

If, during any phase of construction, damage occurs to any trees that are scheduled to be preserved, the Consulting Arborist shall be notified immediately. The consulting arborist shall prescribe the remedial works which shall commence immediately and at the owner's expense.

4.2.3 Post-Construction Maintenance

Once construction activities are completed, any required remedial works shall be prescribed by the consulting arborist. This will include:

i. Post-Construction Inspection

Once all construction activities have ceased, evaluation of the current condition of the trees scheduled for preservation should be conducted. This will include examination of the critical rooting zone and examination of the tree for any mechanical injury.

ii. Removal of Tree Protection Barriers

Upon the approval of the City of Vaughan, all tree protection barriers can be removed.

5.0 CONCLUSIONS & RECOMMENDATIONS

5.1 TREE REMOVALS – Privately-Owned Trees

A total of **TWENTY FIVE (25)** privately-owned trees will require removal due to the proposed construction works. Of these 25 trees:

- One (1) tree is located on adjacent lands to the north (Tree #70)
- One (1) tree is located on the shared northern boundary line (Tree #71)
- 23 trees are located within the development limits.

The following table summarizes the trees to be removed and the rationale behind the proposed removals:

Table 3. Privately-Owned trees requiring removal

TAG #	COMMON NAME	LATIN BINOMIAL	DBH (CM)	CONDITION	CATEGORY	REMARKS	RATIONALE FOR REMOVAL
019	Black Walnut	*Juglans nigra*	10	Poor	SL	Wild grape in crown; crown is suppressed	Tree conflicts with proposed earth berm construction
020	Black Walnut	*Juglans nigra*	26	Good	SL	Wild grape in lower crown	Tree conflicts with proposed earth berm construction
034	Green Ash	*Fraxinus pennsylvanica*	32	Dead	SL	Tree is dead due to EAB infestation	Tree is dead
044	Green Ash	*Fraxinus pennsylvanica*	34 x 34	Dead	SL	Tree is dead due to EAB infestation	Tree is dead
060	Norway Maple	*Acer platanoides cv.*	11 x 24	Fair	SL	Co-dominant stems	Tree conflicts with proposed earth berm construction
061	Norway Maple	*Acer platanoides cv.*	22	Fair	SL	Imbalanced crown due to shading Epicormic branching at base	Tree conflicts with proposed earth berm construction
066	Green Ash	*Fraxinus pennsylvanica*	19	Dead	SL	Tree is dead due to EAB infestation	Tree is dead
068	Green Ash	*Fraxinus pennsylvanica*	12	Dead	SL	Tree is dead due to EAB infestation	Tree is dead
069	Green Ash	*Fraxinus pennsylvanica*	13	Dead	SL	Tree is dead due to EAB infestation	Tree is dead

TAG #	COMMON NAME	LATIN BINOMIAL	DBH (CM)	CONDITION	CATEGORY	REMARKS	RATIONALE FOR REMOVAL
070	Green Ash	*Fraxinus pennsylvanica*	14	Dead	B	Located on shared northern boundary line. Tree is dead due to EAB infestation	Tree is dead
071	Manitoba Maple	*Acer negundo*	[10x8x5] x 17 x 15	Very Poor	PP	Tree has failed from base and many limbs broken Growing through chain link fence Extensive decay at base where broken	Due to condition of tree and growth through fence, removal is warranted Tree will not survive construction impacts
072	White Cedar	*Thuja occidentalis*	18	Fair	SL	Co-dominant leader	Tree conflicts with proposed construction activity
073	White Cedar	*Thuja occidentalis*	15	Good	SL		Tree conflicts with proposed construction activity
074	White Cedar	*Thuja occidentalis*	14	Good	SL		Tree conflicts with proposed construction activity
075	White Spruce	*Picea glauca*	15	Fair	SL		Tree conflicts with proposed construction activity
076	White Spruce	*Picea glauca*	18	Fair	SL	Misshapen bole	Tree conflicts with proposed construction activity
077	White Spruce	*Picea glauca*	32	Good	SL	Some deadwood in crown	Tree conflicts with proposed construction activity
078	White Spruce	*Picea glauca*	32	Poor	SL	Listing to the southwest Poor growth rates	Tree conflicts with excavation required for proposed underground parking
079	Norway Spruce	*Picea abies*	58	Very Good	SL		Tree conflicts with excavation required for proposed underground parking
080	Green Ash	*Fraxinus pennsylvanica*	12	Dead	SL	Tree is dead due to EAB infestation	Tree is dead
086	Horsechestnut	*Aesculus hippocastanum*	47	Good	SL	Scorch/blight	Tree conflicts with proposed construction activity

TAG #	COMMON NAME	LATIN BINOMIAL	DBH (CM)	CONDITION	CATEGORY	REMARKS	RATIONALE FOR REMOVAL
087	Apple	*Malus spp.*	47	Poor	SL	Extensive cavity/decay in main stem (hollow) branch dieback throughout	Tree conflicts with proposed construction activity
090	Manitoba Maple	*Acer negundo*	[33x37] x 31	Fair	SL	2 main stems with included bark at base	Tree is within building envelope
091	Norway Maple	*Acer platanoides cv.*	32 x 20	**HAZARD**	SL	Tree is splitting apart at main crotch Risk of failing onto driveway REMOVAL RECOMMENDED IMMEDIATELY	Tree is within building envelope
092	White Cedar	*Thuja occidentalis*	26	Good	SL	Multiple dominant leaders from main stem	Tree is within building envelope

Authorization from adjacent landowners to remove any tree located on adjacent private lands, including those trees on boundary lines, will be required prior to trees being removed.

5.1.1 TREE REMOVALS – Previous Tree Removals

A total of **TWENTY FOUR (24)** privately-owned trees were previously removed under the previous ownership:

Table 4. Privately-Owned trees located on the subject site that have previously been removed

TAG #	COMMON NAME	LATIN BINOMIAL	DBH (CM)	CONDITION	CATEGORY	REMARKS
047	White Spruce	*Picea glauca*	17	Poor	SL	Chlorotic foliage Thin crown Poor growth rates
048	White Cedar	*Thuja occidentalis*	16 x 16	Good	SL	Co-dominant stems
049	White Spruce	*Picea glauca*	19	Poor	SL	Thin crown Poor growth rates
050	Balsam Fir	*Abies balsamea*	16	Poor	SL	Thin crown Poor growth rates
051	Balsam Fir	*Abies balsamea*	19	Very Poor	SL	Extensive dieback throughout crown Tree is almost dead
052	Balsam Fir	*Abies balsamea*	10 x 12	Poor	SL	2 stems Thin crown
053	White Spruce	*Picea glauca*	16	Poor	SL	Pitch masses along bole Crown is thin
054	Green Ash	*Fraxinus pennsylvanica*	13	Poor	SL	
055	Norway Maple	*Acer platanoides cv.*	27	Poor	SL	Deadwood throughout crown
056	Black Walnut	*Juglans nigra*	13	Very Poor	SL	Misshapen bole Suppressed crown
057	Black Walnut	*Juglans nigra*	13	Fair	SL	Suppressed crown
059	Norway Maple	*Acer platanoides cv.*	13 x 12	Fair	SL	Co-dominant stems with included bark at base Crown is imbalanced
062	Green Ash	*Fraxinus pennsylvanica*	19	Dead	SL	Tree is dead
063	Eastern Red Cedar	*Juniperus virginiana*	13	Fair	SL	Thin crown

TAG #	COMMON NAME	LATIN BINOMIAL	DBH (CM)	CONDITION	CATEGORY	REMARKS
064	Green Ash	*Fraxinus pennsylvanica*	32	Very Poor	SL	EAB Branch dieback throughout crown Epicormic branching from base Tree has been topped
065	White Spruce	*Picea glauca*	12	Very Good	SL	
067	Eastern Red Cedar	*Juniperus virginiana*	13	Fair	SL	Crown is thin and suppressed
081	Eastern Red Cedar	*Juniperus virginiana*	19	Poor	SL	Co-dominant stem Thin crown
082	White Spruce	*Picea glauca*	16	Poor	SL	Thin crown
083	Balsam Fir	*Abies balsamea*	23	Fair	SL	Poor growth rates
084	White Spruce	*Picea glauca*	17	Poor	SL	Very thin crown Chlorotic
085	Eastern Red Cedar	*Juniperus virginiana*	13 x 6	Fair	SL	Crown listing to the southwest
088	Eastern Red Cedar	*Juniperus virginiana*	12 x 10	Poor	SL	2 Stems Broken top on smaller stem Thin crown Galls in crown
089	Eastern Red Cedar	*Juniperus virginiana*	10	Poor	SL	Thin crown Tip dieback Galls in crown

5.2 TREE REMOVALS – Municipally-Owned & Regionally-Owned Trees

A total of **SIXTEEN (16)** trees located on adjacent municipal and regional property will require to removal due to the proposed construction works.

Of these 12 trees:

- **NINE (9)** are located along the City of Vaughan's municipal right-of-way;
- **SEVEN (7)** are located on the adjacent regional road allowance to the south of the subject site.

Authorization from the City of Vaughan and the Region or York will be required for any tree removals recommended on adjacent municipal or Regionally-owned property.

5.2.1 TREE REMOVALS – Municipally-Owned Trees

A total of **NINE (9)** trees located on adjacent municipal property are recommended to be removed due to the proposed development:

Table 5. Tree removals on municipal property requiring removal

TAG #	COMMON NAME	LATIN BINOMIAL	DBH (CM)	CONDITION	REMARKS	RATIONALE FOR REMOVAL
093	Eastern Red Cedar	*Juniperus virginiana*	16	Fair	Crown has been raised	Tree conflicts with proposed construction activity
094	White Cedar	*Thuja occidentalis*	11	Fair	Crown has been raised	Tree conflicts with proposed construction activity
095	White Cedar	*Thuja occidentalis*	16 x 15	Poor	Co-dominant stems Thin crown Crown raised	Tree conflicts with proposed construction activity
096	White Cedar	*Thuja occidentalis*	13 x 11	Poor	Co-dominant stems Thin crown Crown raised	Tree conflicts with proposed construction activity
097	White Cedar	*Thuja occidentalis*	10 x 9 x 7	Poor	Co-dominant stems Thin crown Crown raised	Tree conflicts with proposed construction activity

TAG #	COMMON NAME	LATIN BINOMIAL	DBH (CM)	CONDITION	REMARKS	RATIONALE FOR REMOVAL
098	White Cedar	*Thuja occidentalis*	10 x 18	Poor	Co-dominant stems Thin crown Crown raised	Tree conflicts with proposed construction activity
099	White Cedar	*Thuja occidentalis*	11	Poor	Crown raised	Tree conflicts with proposed construction activity
100	White Cedar	*Thuja occidentalis*	18	Fair	Co-dominant stems Thin crown Crown raised	Tree conflicts with proposed construction activity
101	White Cedar	*Thuja occidentalis*	11	Fair	Crown raised	Tree conflicts with proposed construction activity

5.2.2 TREE REMOVALS – Regionally-Owned Trees

A total of **SEVEN (7)** trees located on adjacent Regional property are recommended to be removed due to the proposed development:

Table 6. Tree removals on regional property requiring removal

TAG #	COMMON NAME	LATIN BINOMIAL	DBH (CM)	CONDITION	REMARKS	RECOMMENDATIONS
008	Eastern Red Cedar	*Juniperus virginiana*	15	Very Poor	Extensive dieback in crown Top has died back	Due to existing condition and anticipated construction works, removal is warranted
010	Green Ash	*Fraxinus pennsylvanica*	11	Dead	Tree is dead due to EAB infestation	Tree to be removed by Regional forces
011	Manitoba Maple	*Acer negundo*	10×17×10	Poor	Tree is growing through chain link fence 3 dominant stems	Proposed retaining wall will require tree removal
012	Black Walnut	*Juglans nigra*	24	Poor	Main leader has failed in crown	Proposed retaining wall will require tree removal
013	Black Walnut	*Juglans nigra*	9	Poor	Crown is suppressed/misshapen Bole has grown through chain link fence	Proposed retaining wall will require tree removal

TAG #	COMMON NAME	LATIN BINOMIAL	DBH (CM)	CONDITION	REMARKS	RECOMMENDATIONS
014	Black Walnut	*Juglans nigra*	21	Fair	Limb from Tree #012 failed into tree's crown	Proposed retaining wall will require tree removal
016	Black Walnut	*Juglans nigra*	30	Good	Wild grape growing along bole and into lower crown	Tree conflicts with proposed crash wall

5.3 Tree Replanting Requirements

5.3.1 Tree Replanting Requirements – Privately Owned Trees

In accordance with the City of Vaughan Replacement Tree Requirements and the *Tree Protection Protocol*, the following tree replacement methodology is required for trees to be removed, *not including those trees located on city or regional property; dead trees are exempt from replacement as well*:

Table 7. City of Vaughan tree replacement specifications

DBH of Tree to be Removed (cm)	Number of Replacement Trees Required
20 – 30	1
31 – 40	2
41 – 50	3
51 or greater	4

The *Aggregate Inch Method* is used for multi-stemmed trees.

In addition, according to the City of Vaughan Standards, replacement trees must be:

1. *For evergreen (coniferous) trees, at least 200 cm (6.5 ft.) tall*
2. *For leafy (deciduous) trees, have a caliper of at least 50mm (2 in.)*
3. *If fruit trees are desired, you must plant two trees for each regular replacement*
4. *Planted within one year of the issuance of the tree removal permit*
5. *Not a shrub or low growing variety*
6. *Not an invasive species*
7. *Good quality, number one (1) grade, nursery grown stock and installed as per City approved details and standards*
8. *Shall meet the highest horticultural standards of the Canadian Nursery Trades Association with respect to grading and quality, and shall be in strict accordance with the approved Plant List and Specifications*

Given the abovementioned specifications, the following table outlines the number of required replacement trees:

Table 8. Private tree replacement calculation

Tag #	Common Name	DBH (cm)	Condition	Category	Required # of Replacement Trees
019	Black Walnut	10	Poor	SL	0
068	Green Ash	12	Dead	SL	0
080	Green Ash	12	Dead	SL	0
069	Green Ash	13	Dead	SL	0
074	White Cedar	14	Good	SL	0
070	Green Ash	14	Dead	B	0
073	White Cedar	15	Good	SL	0
075	White Spruce	15	Fair	SL	0
072	White Cedar	18	Fair	SL	0
076	White Spruce	18	Fair	SL	0
066	Green Ash	19	Dead	SL	0
061	Norway Maple	22	Fair	SL	1
020	Black Walnut	26	Good	SL	1
092	White Cedar	26	Good	SL	1
078	White Spruce	32	Poor	SL	2

Tag #	Common Name	DBH (cm)	Condition	Category	Required # of Replacement Trees
077	White Spruce	32	Good	SL	2
034	Green Ash	32	Dead	SL	0
086	Horsechestnut	47	Good	SL	3
087	Apple	47	Poor	SL	3
079	Norway Spruce	58	Very Good	SL	4
071	Manitoba Maple	[10x8x5] x 17 x 15	Very Poor	PP	1 (Aggregate Inch Method)
090	Manitoba Maple	[33x37] x 31	Fair	SL	3 (Aggregate Inch Method)
060	Norway Maple	11 x 24	Fair	SL	1 (Aggregate Inch Method)
091	Norway Maple	32 x 20	**HAZARD**	SL	4
044	Green Ash	34 x 34	Dead	SL	0
Total Calculated Replacement Trees					**22**

Therefore, a total of 22 large-growing native trees are required to be planted as compensation for the recommended tree removals

The value of the required replacement trees, per the 2023 replacement tree rate ($625) is $13 750.00

The following is a list of recommended species for replacement trees to be located within the naturalized area at the west of the site:

- Red Oak (*Quercus rubra*)
- Bur Oak (*Quercus macrocarpa*)
- Silver Maple (*Acer saccharinum*)
- Sugar Maple (*Acer saccharum*)
- Black Maple (*Acer nigrum*)
- Basswood (*Tilia americana*)
- Ironwood (*Ostrya virginiana*)
- Black Walnut (*Juglans nigra*)

It is recommended, due to the topography of the site, that smaller calliper trees be planted for logistical practicality. Consideration for a variety of tree sizes (ranging from saplings, whips, and smaller caliper trees) should be given to enhance the horizontal structure and variability of the planted slope area.

For cash-in-lieu of plantings, the following specifications are set out by the City of Vaughan:

In instances where more replacement trees are required than can reasonably be accommodated on the development site, a cash-in-lieu payment may be made to the Forestry Tree Reserve Fund to fund tree planting on city owned properties in the same community

5.3.2 Tree Replanting Requirements – Municipally Owned Trees

The City of Vaugh will dictate the compensation required for all municipally-owned trees that are removed

5.3.3 Tree Replanting Requirements – Regionally Owned Trees

As per the *York Region Street Tree and Forest Preservation Guidelines*, the following formula shall be applied to determine compensation for the removal of trees located within the regional right-of-way (A 50 mm (5cm) caliper replacement tree was used):

$$\#\ of\ Replacement\ Trees = \frac{DBH\ (cm) of\ Tree\ to\ be\ Removed}{Replacement\ Tree\ Caliper\ (cm)} \times Condition\ Rating$$

A total of three regionally owned trees are recommended for removal. The following table outlines the factors used, in conjunction with the above formula, to determine the required compensatory trees:

Table 9. Regional tree replacement calculation

Tag #	Common Name	DBH (cm)	Condition	Condition Factor	# of Replacement Trees Required
008	Eastern Red Cedar	15	Very Poor	0.2	1
010	Green Ash	11	Dead	0	0
011	Manitoba Maple	10×17×10	Poor	0.4	3
012	Black Walnut	24	Poor	0.4	2
013	Black Walnut	9	Poor	0.4	1
014	Black Walnut	21	Fair	0.6	3
016	Black Walnut	30	Good	0.8	5
TOTAL # OF REPLACEMENT TREES REQUIRED					**15**

The total number of regional replacement trees required is **FIFTEEN (15)**.

5.4 TREE INJURIES – Impacts to Minimum Required Tree Protection Zones

A total of THREE (3) privately-owned trees will have their minimum tree protection distance encroached upon due to the proposed development works. The following table outlines the trees to be impacted, the rationale for the impacts, and the proposed mitigation:

Table 10. Private tree injuries

Tag #	Species	DBH (cm)	Condition	Remarks	Rationale & Mitigation
021	Black Walnut *Juglans nigra*	13	Good	Wild grape in crown; crown is suppressed	A total of approximately 9% of the tree's minimum TPZ will be impacted due to the proposed construction of the earth berm and crash wall, and mainly due to the potential grade changes and site access route required to access the westerly side of the earth berm This tree is in Fair condition and, if the following recommendations are adhered to, it is not expected for the tree to succumb to the anticipated impacts of the proposed construction: - Install tree protection fencing as per the approved Tree Protection Plan. This tree protection fencing is to remain in place until all construction has been completed - NO HEAVY MACHINERY OR EQUIPMENT IS TO ENTER INTO THE TPZ OF THE TREE - Any exposed roots shall be immediately pruned by a qualified arborist - Prune any overhanging limbs to clear for construction, if required - This tree is a young specimen capable of incurring and tolerating the anticipated impacts. The anticipated impacts are not expected to cause the death or destabilization of the tree.

Tag #	Species	DBH (cm)	Condition	Remarks	Rationale & Mitigation
055	Norway Maple *Acer platanoides cv.*	27	Poor	Deadwood throughout crown	A total of approximately 2% of the tree's minimum TPZ will be impacted due to the proposed construction of the earth berm and crash wall, and mainly due to the potential grade changes and site access route required to access the westerly side of the earth berm This tree is in Poor condition and, if the following recommendations are adhered to, it is not expected for the tree to succumb to the anticipated impacts of the proposed construction: - Install tree protection fencing as per the approved Tree Protection Plan. This tree protection fencing is to remain in place until all construction has been completed - NO HEAVY MACHINERY OR EQUIPMENT IS TO ENTER INTO THE TPZ OF THE TREE - Any exposed roots shall be immediately pruned by a qualified arborist - Prune any overhanging limbs to clear for construction, if required Norway Maple is a species tolerant of root disturbance and capable of incurring and tolerating the anticipated impacts. The anticipated impacts are not expected to cause the death or destabilization of the tree.
058	Black Walnut *Juglans nigra*	34	Good	Imbalanced crown to east	A total of approximately 12% of the tree's minimum TPZ will be impacted due to the proposed construction of the earth berm and crash wall, and mainly due to the potential grade changes and site access route required to access the westerly side of the earth berm This tree is in Good condition and, if the following recommendations are adhered to, it is not expected for the tree to succumb to the anticipated impacts of the proposed construction: - Install tree protection fencing as per the approved Tree Protection Plan. This tree protection fencing is to remain in place until all construction has been completed - NO HEAVY MACHINERY OR EQUIPMENT IS TO ENTER INTO THE TPZ OF THE TREE - Any exposed roots shall be immediately pruned by a qualified arborist - Prune any overhanging limbs to clear for construction, if required This tree is a mature specimen in good condition, capable of incurring and tolerating the anticipated impacts. The anticipated impacts are not expected to cause the death or destabilization of the tree.

5.4.1 TREE INJURIES – Regional Trees

A total of TWO (2) Regionally-Owned trees will have very minor encroachments into their minimum TPZs. The following table outlines the trees to be impacted, the rationale for the impacts, and the proposed mitigation:

Table 11. Regional tree injuries

Tag #	Species	DBH (cm)	Condition	Remarks	Rationale & Mitigation
015	Black Walnut *Juglans nigra*	19 x 20 x 20 x 19 x 10	Good	5 stems Crowns are suppressed due to shading	A total of approximately 2% of the tree's minimum TPZ will be impacted due to the proposed construction of the retaining wall. This tree is in Good condition and, if the following recommendations are adhered to, it is not expected for the tree to succumb to the anticipated impacts of the proposed construction: - Install tree protection fencing as per the approved Tree Protection Plan. This tree protection fencing is to remain in place until all construction has been completed - NO HEAVY MACHINERY OR EQUIPMENT IS TO ENTER INTO THE TPZ OF THE TREE - Excavation for retaining wall is to be completed under the supervision of the Consulting Arborist. Any exposed roots shall be immediately pruned by the attending Arborist - Prune any overhanging limbs to clear for construction, if required - This tree is a young specimen capable of incurring and tolerating the anticipated impacts. The anticipated impacts are not expected to cause the death or destabilization of the tree.

Tag #	Species	DBH (cm)	Condition	Remarks	Rationale & Mitigation
017	Black Walnut *Juglans nigra*	13	Poor	Wild grape in crown; crown is suppressed	A total of approximately 6% of the tree's minimum TPZ will be impacted due to the proposed construction of the retaining wall. This tree is in Poor condition however, if the following recommendations are adhered to, it is not expected for the tree to succumb to the anticipated impacts of the proposed construction: - Install tree protection fencing as per the approved Tree Protection Plan. This tree protection fencing is to remain in place until all construction has been completed - NO HEAVY MACHINERY OR EQUIPMENT IS TO ENTER INTO THE TPZ OF THE TREE - Excavation for retaining wall is to be completed under the supervision of the Consulting Arborist. Any exposed roots shall be immediately pruned by the attending Arborist - Prune any overhanging limbs to clear for construction, if required - Remove wild grape from crown This tree is a young specimen capable of incurring and tolerating the anticipated impacts. The anticipated impacts are not expected to cause the death or destabilization of the tree.

6.0 LIMITATIONS OF ASSESSMENT

The assessment of the trees presented in this report has been made using current accepted arboricultural techniques. These include a visual examination 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 and direction of lean (if any), the general condition of the trees and the surrounding site, and the proximity of property and people. Except where specifically noted, the trees were not cored, probed or climbed and there was no detailed inspection of the root crowns involving excavations.

Notwithstanding the recommendations and conclusions made in this report, it must be recognized that trees are living organisms, and their health and vigour constantly change over time. They are not immune to changes in site conditions or seasonal variations in the weather conditions.

While reasonable efforts have been made to ensure that the subject trees are healthy, no guarantees are offered, or implied, that these trees or any of their parts will remain standing. It is both professionally and practically impossible to predict with absolute certainty the behaviour of any single tree or its component parts under all circumstances. Inevitably, a standing tree will always pose some level of risk. Most trees have the potential for failure under adverse weather conditions, and the risk can only be eliminated if the tree is removed.

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.

This 51 page report was prepared by

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Appendix 1
Tree Inventory, Assessment & Recommendations for Preservation

TAG #	COMMON NAME	LATIN BINOMIAL	DBH (CM)	CONDITION	CATEGORY	REMARKS	RECOMMENDATIONS
008	Eastern Red Cedar	*Juniperus virginiana*	15	Very Poor	RMT	Extensive dieback in crown Top has died back	**REMOVE** Due to existing condition and anticipated construction works, removal is warranted
009	Eastern Red Cedar	*Juniperus virginiana*	21 x 13	Good	RMT	Co-dominant stems Lower branches removed	**PRESERVE & PROTECT** Install Tree Protection Fencing
010	Green Ash	*Fraxinus pennsylvanica*	11	Dead	RMT	Tree is dead due to EAB infestation	**REMOVE** Tree to be removed by Regional forces
011	Manitoba Maple	*Acer negundo*	10 x 17 x 10	Poor	RMT	Tree is growing through chain link fence 3 dominant stems	**REMOVE** Proposed retaining wall will require tree removal
012	Black Walnut	*Juglans nigra*	24	Poor	RMT	Main leader has failed in crown	**REMOVE** Proposed retaining wall will require tree removal
013	Black Walnut	*Juglans nigra*	9	Poor	RMT	Crown is suppressed/misshapen Bole has grown through chain link fence	**REMOVE** Proposed retaining wall will require tree removal
014	Black Walnut	*Juglans nigra*	21	Fair	RMT	Limb from Tree #012 failed into tree's crown	**REMOVE** Proposed retaining wall will require tree removal
015	Black Walnut	*Juglans nigra*	19 x 20 x 20 x 19 x 10	Poor	RMT	5 stems Crowns are suppressed due to shading	**PRESERVE & PROTECT** Install Tree Protection Fencing
016	Black Walnut	*Juglans nigra*	30	Good	RMT	Wild grape growing along bole and into lower crown	**REMOVE** Tree conflicts with proposed crash wall
017	Black Walnut	*Juglans nigra*	13	Poor	RMT	Wild grape in crown; crown is suppressed	**PRESERVE & PROTECT** Install Tree Protection Fencing

TAG #	COMMON NAME	LATIN BINOMIAL	DBH (CM)	CONDITION	CATEGORY	REMARKS	RECOMMENDATIONS
018	Black Walnut	*Juglans nigra*	11	Poor	RMT	Wild grape in crown; crown is suppressed	**PRESERVE & PROTECT** Install Tree Protection Fencing
019	Black Walnut	*Juglans nigra*	10	Poor	SL	Wild grape in crown; crown is suppressed	**REMOVE** Tree conflicts with proposed crash wall
020	Black Walnut	*Juglans nigra*	26	Good	SL	Wild grape in lower crown	**REMOVE** Tree conflicts with proposed crash wall
021	Black Walnut	*Juglans nigra*	13	Good	SL	Wild grape in lower crown	**PRESERVE & PROTECT** Install Tree Protection Fencing Remove Wild Grape vines in crown
022	Black Walnut	*Juglans nigra*	21	Good	RMT	Wild grape in lower crown	**PRESERVE & PROTECT** Install Tree Protection Fencing
023	Black Walnut	*Juglans nigra*	20	Very Good	SL		**PRESERVE & PROTECT** Install Tree Protection Fencing
024	Black Walnut	*Juglans nigra*	15	Very Good	RMT		**PRESERVE & PROTECT** Install Tree Protection Fencing
025	White Spruce	*Picea glauca*	11	Very Poor	B/RMT	Located on shared boundary between regional ROW and subject site; Suppressed	**PRESERVE & PROTECT** Install Tree Protection Fencing
026	Black Walnut	*Juglans nigra*	9	Poor	PP	Deadwood throughout crown	**PRESERVE & PROTECT** Install Tree Protection Fencing
027	Black Walnut	*Juglans nigra*	9	Poor	PP	Crown listing to the south due to shading	**PRESERVE & PROTECT** Install Tree Protection Fencing

TAG #	COMMON NAME	LATIN BINOMIAL	DBH (CM)	CONDITION	CATEGORY	REMARKS	RECOMMENDATIONS
028	Black Walnut	*Juglans nigra*	11 x 11 x 12 x 6	Fair	PP	4 stems Sooty cankers observed (potential cankering disease) Deadwood in crown Leaves/leaflets somewhat undersized	**PRESERVE & PROTECT** Install Tree Protection Fencing
029	Black Walnut	*Juglans nigra*	15 x 13	Good	PP	Co-dominant stems from base with included bark Deadwood in crown	**PRESERVE & PROTECT** Install Tree Protection Fencing
030	Black Walnut	*Juglans nigra*	10	Fair	SL	Imbalanced crown Deadwood throughout crown	**PRESERVE & PROTECT** Install Tree Protection Fencing
031	Black Walnut	*Juglans nigra*	10 x 8 x 11	Poor	PP	3 stems from the base Crown is thin Wild grape in crown; crown listing to the east	**PRESERVE & PROTECT** Install Tree Protection Fencing
032	Black Walnut	*Juglans nigra*	10	Fair	SL	Misshapen bole Deadwood in crown	**PRESERVE & PROTECT** Install Tree Protection Fencing
033	Green Ash	*Fraxinus pennsylvanica*	20	Dead	PP	Tree is dead due to EAB infestation	**RETAIN**
034	Green Ash	*Fraxinus pennsylvanica*	32	Dead	SL	Tree is dead due to EAB infestation	**REMOVE** Tree is dead
035	Black Walnut	*Juglans nigra*	12	Fair	PP	Suppressed	**PRESERVE & PROTECT** Install Tree Protection Fencing
036	Green Ash	*Fraxinus pennsylvanica*	36	Dead	PP	Tree is dead due to EAB infestation	**RETAIN**
037	Green Ash	*Fraxinus pennsylvanica*	29 x 19	Dead	PP	Tree is dead due to EAB infestation	**RETAIN**
038	Green Ash	*Fraxinus pennsylvanica*	38	Dead	PP	Tree is dead due to EAB infestation	**RETAIN**
039	Black Walnut	*Juglans nigra*	19	Fair	PP	Leaves undersized Small crown	**RETAIN**

TAG #	COMMON NAME	LATIN BINOMIAL	DBH (CM)	CONDITION	CATEGORY	REMARKS	RECOMMENDATIONS
040	Green Ash	*Fraxinus pennsylvanica*	18	Dead	PP	Tree is dead due to EAB infestation	**RETAIN**
041	Black Walnut	*Juglans nigra*	30	Poor	PP	Small crown Leaves undersized Branch and tip dieback throughout	**PRESERVE & PROTECT** Install Tree Protection Fencing
042	Black Walnut	*Juglans nigra*	51	Good	SL	Leaves undersized Some branch and tip dieback	**PRESERVE & PROTECT** Install Tree Protection Fencing
043	Pear	*Pyrus spp.*	58	Fair	SL	Tree listing to the south Co-dominant stems Scaffold limb dieback on east side Canker on north side of bole	**PRESERVE & PROTECT** Install Tree Protection Fencing
044	Green Ash	*Fraxinus pennsylvanica*	34 x 34	Dead	SL	Tree is dead due to EAB infestation	**REMOVE** Tree is dead
045	Black Walnut	*Juglans nigra*	30	Good	SL	Imbalanced crown to the east due to shading Lower branch dieback	**PRESERVE & PROTECT** Install Tree Protection Fencing
046	Black Walnut	*Juglans nigra*	28	Good	SL	Imbalanced crown to the south east due to shading Wild grape in crown Some deadwood	**PRESERVE & PROTECT** Install Tree Protection Fencing
047	White Spruce	*Picea glauca*	17	Poor	SL	Chlorotic foliage Thin crown Poor growth rates	**TREE HAS BEEN PREVIOUSLY REMOVED**
048	White Cedar	*Thuja occidentalis*	16 x 16	Good	SL	Co-dominant stems	**TREE HAS BEEN PREVIOUSLY REMOVED**
049	White Spruce	*Picea glauca*	19	Poor	SL	Thin crown Poor growth rates	**TREE HAS BEEN PREVIOUSLY REMOVED**

TAG #	COMMON NAME	LATIN BINOMIAL	DBH (CM)	CONDITION	CATEGORY	REMARKS	RECOMMENDATIONS
050	Balsam Fir	*Abies balsamea*	16	Poor	SL	Thin crown Poor growth rates	**TREE HAS BEEN PREVIOUSLY REMOVED**
051	Balsam Fir	*Abies balsamea*	19	Very Poor	SL	Extensive dieback throughout crown Tree is almost dead	**TREE HAS BEEN PREVIOUSLY REMOVED**
052	Balsam Fir	*Abies balsamea*	10 x 12	Poor	SL	2 stems Thin crown	**TREE HAS BEEN PREVIOUSLY REMOVED**
053	White Spruce	*Picea glauca*	16	Poor	SL	Pitch masses along bole Crown is thin	**TREE HAS BEEN PREVIOUSLY REMOVED**
054	Green Ash	*Fraxinus pennsylvanica*	13	Poor	SL		**TREE HAS BEEN PREVIOUSLY REMOVED**
055	Norway Maple	*Acer platanoides cv.*	27	Poor	SL	Deadwood throughout crown	**PRESERVE & PROTECT** Install Tree Protection Fencing
056	Black Walnut	*Juglans nigra*	13	Very Poor	SL	Misshapen bole Suppressed crown	**TREE HAS BEEN PREVIOUSLY REMOVED**
057	Black Walnut	*Juglans nigra*	13	Fair	SL	Suppressed crown	**TREE HAS BEEN PREVIOUSLY REMOVED**
058	Black Walnut	*Juglans nigra*	34	Good	SL	Imbalanced crown to east	**PRESERVE & PROTECT** Install Tree Protection Fencing
059	Norway Maple	*Acer platanoides cv.*	13 x 12	Fair	SL	Co-dominant stems with included bark at base Crown is imbalanced	**TREE HAS BEEN PREVIOUSLY REMOVED**
060	Norway Maple	*Acer platanoides cv.*	11 x 24	Fair	SL	Co-dominant stems	**REMOVE** Tree conflicts with proposed earth berm construction
061	Norway Maple	*Acer platanoides cv.*	22	Fair	SL	Imbalanced crown due to shading Epicormic branching at base	**REMOVE** Tree conflicts with proposed earth berm construction

TAG #	COMMON NAME	LATIN BINOMIAL	DBH (CM)	CONDITION	CATEGORY	REMARKS	RECOMMENDATIONS
062	Green Ash	*Fraxinus pennsylvanica*	19	Dead	SL	Tree is dead	TREE HAS BEEN PREVIOUSLY REMOVED
063	Eastern Red Cedar	*Juniperus virginiana*	13	Fair	SL	Thin crown	TREE HAS BEEN PREVIOUSLY REMOVED
064	Green Ash	*Fraxinus pennsylvanica*	32	Very Poor	SL	EAB Branch dieback throughout crown Epicormic branching from base Tree has been topped	TREE HAS BEEN PREVIOUSLY REMOVED
065	White Spruce	*Picea glauca*	12	Very Good	SL		TREE HAS BEEN PREVIOUSLY REMOVED
066	Green Ash	*Fraxinus pennsylvanica*	19	Dead	SL	Tree is dead due to EAB infestation	**REMOVE** Tree is dead
067	Eastern Red Cedar	*Juniperus virginiana*	13	Fair	SL	Crown is thin and suppressed	TREE HAS BEEN PREVIOUSLY REMOVED
068	Green Ash	*Fraxinus pennsylvanica*	12	Dead	SL	Tree is dead due to EAB infestation	**REMOVE** Tree is dead
069	Green Ash	*Fraxinus pennsylvanica*	13	Dead	SL	Tree is dead due to EAB infestation	**REMOVE** Tree is dead
070	Green Ash	*Fraxinus pennsylvanica*	14	Dead	B	Located on shared northern boundary line. Tree is dead due to EAB infestation	**REMOVE** Tree is dead
071	Manitoba Maple	*Acer negundo*	[10x8x5] x 17 x 15	Very Poor	PP	Tree has failed from base and many limbs broken Growing through chain link fence Extensive decay at base where broken	**REMOVE** Due to condition of tree and growth through fence, removal is warranted Tree will not survive construction impacts
072	White Cedar	*Thuja occidentalis*	18	Fair	SL	Co-dominant leader	**REMOVE** Tree conflicts with proposed construction activity

TAG #	COMMON NAME	LATIN BINOMIAL	DBH (CM)	CONDITION	CATEGORY	REMARKS	RECOMMENDATIONS
073	White Cedar	*Thuja occidentalis*	15	Good	SL		**REMOVE** Tree conflicts with proposed construction activity
074	White Cedar	*Thuja occidentalis*	14	Good	SL		**REMOVE** Tree conflicts with proposed construction activity
075	White Spruce	*Picea glauca*	15	Fair	SL		**REMOVE** Tree conflicts with proposed construction activity
076	White Spruce	*Picea glauca*	18	Fair	SL	Misshapen bole	**REMOVE** Tree conflicts with proposed construction activity
077	White Spruce	*Picea glauca*	32	Good	SL	Some deadwood in crown	**REMOVE** Tree conflicts with proposed construction activity
078	White Spruce	*Picea glauca*	32	Poor	SL	Listing to the southwest Poor growth rates	**REMOVE** Tree conflicts with excavation required for proposed underground parking
079	Norway Spruce	*Picea abies*	58	Very Good	SL		**REMOVE** Tree conflicts with excavation required for proposed underground parking
080	Green Ash	*Fraxinus pennsylvanica*	12	Dead	SL	Tree is dead due to EAB infestation	**REMOVE** Tree is dead
081	Eastern Red Cedar	*Juniperus virginiana*	19	Poor	SL	Co-dominant stem Thin crown	**TREE HAS BEEN PREVIOUSLY REMOVED**

TAG #	COMMON NAME	LATIN BINOMIAL	DBH (CM)	CONDITION	CATEGORY	REMARKS	RECOMMENDATIONS
082	White Spruce	*Picea glauca*	16	Poor	SL	Thin crown	**TREE HAS BEEN PREVIOUSLY REMOVED**
083	Balsam Fir	*Abies balsamea*	23	Fair	SL	Poor growth rates	**TREE HAS BEEN PREVIOUSLY REMOVED**
084	White Spruce	*Picea glauca*	17	Poor	SL	Very thin crown Chlorotic	**TREE HAS BEEN PREVIOUSLY REMOVED**
085	Eastern Red Cedar	*Juniperus virginiana*	13 x 6	Fair	SL	Crown listing to the southwest	**TREE HAS BEEN PREVIOUSLY REMOVED**
086	Horsechestnut	*Aesculus hippocastanum*	47	Good	SL	Scorch/blight	**REMOVE** Tree conflicts with proposed construction activity
087	Apple	*Malus spp.*	47	Poor	SL	Extensive cavity/decay in main stem (hollow) branch dieback throughout	**REMOVE** Tree conflicts with proposed construction activity
088	Eastern Red Cedar	*Juniperus virginiana*	12 x 10	Poor	SL	2 Stems Broken top on smaller stem Thin crown Galls in crown	**TREE HAS BEEN PREVIOUSLY REMOVED**
089	Eastern Red Cedar	*Juniperus virginiana*	10	Poor	SL	Thin crown Tip dieback Galls in crown	**TREE HAS BEEN PREVIOUSLY REMOVED**
090	Manitoba Maple	*Acer negundo*	[33x37] x 31	Fair	SL	2 main stems with included bark at base	**REMOVE** Tree is within building envelope
091	Norway Maple	*Acer platanoides cv.*	32 x 20	**HAZARD**	SL	Tree is splitting apart at main crotch Risk of failing onto driveway REMOVAL RECOMMENDED IMMEDIATELY	**REMOVE** Tree is within building envelope

TAG #	COMMON NAME	LATIN BINOMIAL	DBH (CM)	CONDITION	CATEGORY	REMARKS	RECOMMENDATIONS
092	White Cedar	*Thuja occidentalis*	26	Good	SL	Multiple dominant leaders from main stem	**REMOVE** Tree is within building envelope
093	Eastern Red Cedar	*Juniperus virginiana*	16	Fair	MT	Crown has been raised	**REMOVE** Tree conflicts with proposed construction activity
094	White Cedar	*Thuja occidentalis*	11	Fair	MT	Crown has been raised	**REMOVE** Tree conflicts with proposed construction activity
095	White Cedar	*Thuja occidentalis*	16 x 15	Poor	MT	Co-dominant stems Thin crown Crown raised	**REMOVE** Tree conflicts with proposed construction activity
096	White Cedar	*Thuja occidentalis*	13 x 11	Poor	MT	Co-dominant stems Thin crown Crown raised	**REMOVE** Tree conflicts with proposed construction activity
097	White Cedar	*Thuja occidentalis*	10 x 9 x 7	Poor	MT	Co-dominant stems Thin crown Crown raised	**REMOVE** Tree conflicts with proposed construction activity
098	White Cedar	*Thuja occidentalis*	10 x 18	Poor	MT	Co-dominant stems Thin crown Crown raised	**REMOVE** Tree conflicts with proposed construction activity
099	White Cedar	*Thuja occidentalis*	11	Poor	MT	Crown raised	**REMOVE** Tree conflicts with proposed construction activity
100	White Cedar	*Thuja occidentalis*	18	Fair	MT	Co-dominant stems Thin crown Crown raised	**REMOVE** Tree conflicts with proposed construction activity

TAG #	COMMON NAME	LATIN BINOMIAL	DBH (CM)	CONDITION	CATEGORY	REMARKS	RECOMMENDATIONS
101	White Cedar	*Thuja occidentalis*	11	Fair	MT	Crown raised	**REMOVE** Tree conflicts with proposed construction activity
102	Black Walnut	*Juglans nigra*	13 x 10	Good	PP	smaller stem is misshapen	**RETAIN**

Key to Category Codes:
SL: Tree located on subject land PP: Tree Located on adjacent private land MT: Tree located on municipal right of way RMT: Tree located on regional right of way

Appendix 2
Photographs

Trees #093-101. Located on the municipal ROW. Crowns have been raised and most trees have multiple leaders

Trees #008-010 at southeast corner of subject site.

Trees #010 (foreground); Trees #011-013. Trees located just south of subject site on Regional right-of-way adjacent to site. Invasive Wild Grape is growing on most trees along this area

Tree #014 (foreground); Trees #015-018. Located along Regional right-of-way south of the subject site.

Approaching the southwest corner of the subject site, looking northwest along the Regional right-of-way

Facing southwest from just north of the gravel drive. Note the frame garage at centre-left of the photo

Facing northwest from just north of the gravel drive. Naturalized area west of the residence

Facing southeast from the rear of the residence. Naturalized area west of the residence

At first top of slope, facing south, southwest of residence

At first top of slope, facing north, southwest of residence

At top of slope closest to western property line. Facing southwest at northwest property corner. **Tree #042** in foreground

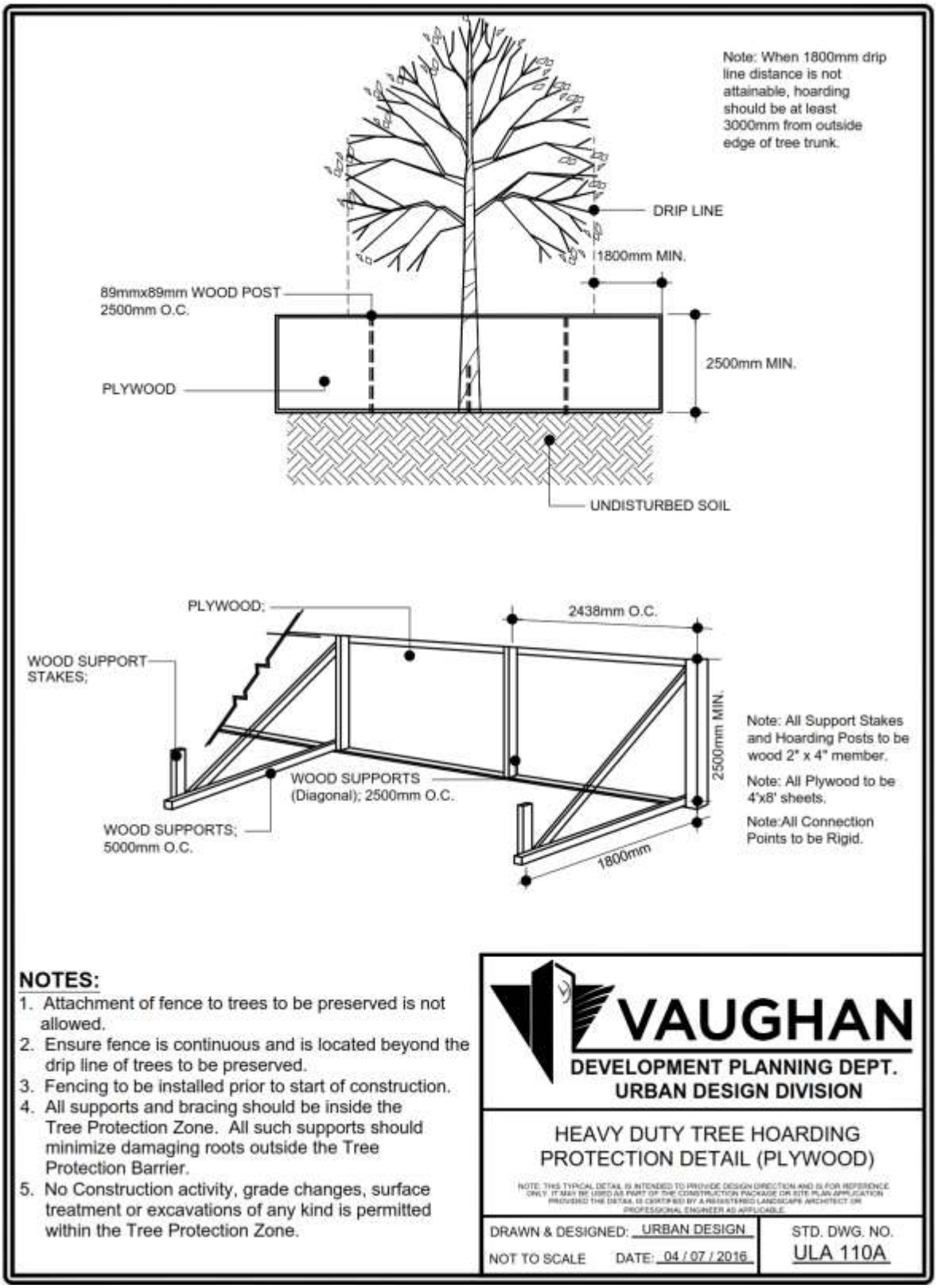
West of residence facing north.

Photo showing characteristic vegetation growth within wooded area along western boundary line. Many invasive species (Wild Grape, European Buckthorn, Norway Maple) and natural regeneration of native species (Black Walnut and Green Ash)

Trees #090 & 091. Located just north of gravel driveway

Tree #091. Located just north of gravel driveway. Tree is splitting apart and is in a hazardous condition.

Appendix 3
Tree Protection Fencing Specifications



NOTES:

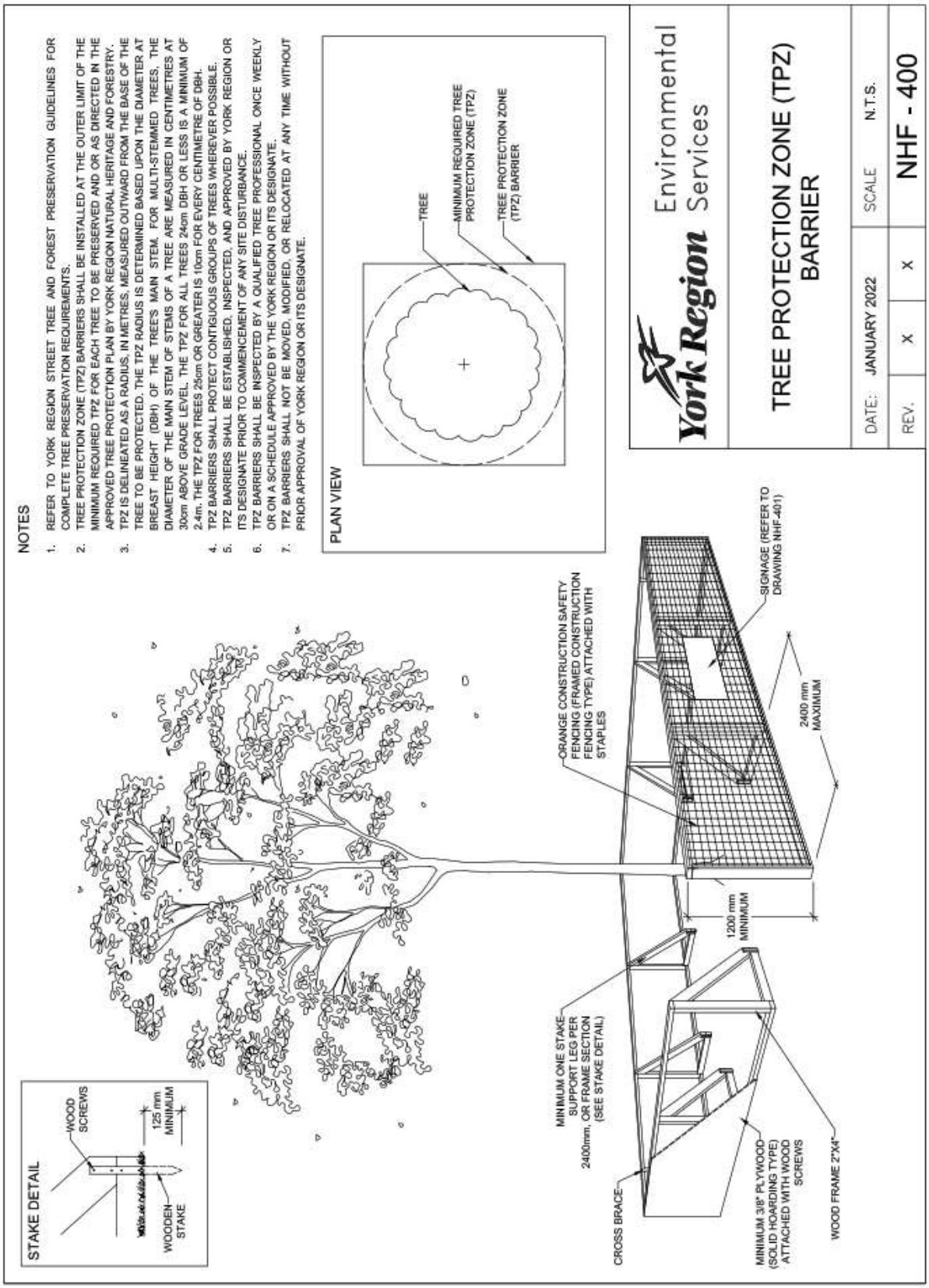
1. Attachment of fence to trees to be preserved is not allowed.
2. Ensure fence is continuous and is located beyond the drip line of trees to be preserved.
3. Fencing to be installed prior to start of construction.
4. All supports and bracing should be inside the Tree Protection Zone. All such supports should minimize damaging roots outside the Tree Protection Barrier.
5. No Construction activity, grade changes, surface treatment or excavations of any kind is permitted within the Tree Protection Zone.

VAUGHAN
DEVELOPMENT PLANNING DEPT.
URBAN DESIGN DIVISION

HEAVY DUTY TREE HOARDING PROTECTION DETAIL (PLYWOOD)

NOTE: THIS TYPICAL DETAIL IS INTENDED TO PROVIDE DESIGN DIRECTION AND IS FOR REFERENCE ONLY. IT MAY BE USED AS PART OF THE CONSTRUCTION PACKAGE OR SITE PLAN APPLICATION PROVIDED THE DETAIL IS CERTIFIED BY A REGISTERED LANDSCAPE ARCHITECT OR PROFESSIONAL ENGINEER AS APPLICABLE.

DRAWN & DESIGNED: URBAN DESIGN
NOT TO SCALE DATE: 04 / 07 / 2016
STD. DWG. NO. ULA 110A


NOTES
1. REFER TO YORK REGION STREET TREE AND FOREST PRESERVATION GUIDELINES FOR COMPLETE TREE PRESERVATION REQUIREMENTS.
2. TREE PROTECTION ZONE (TPZ) BARRIERS SHALL BE INSTALLED AT THE OUTER LIMIT OF THE MINIMUM REQUIRED TPZ FOR EACH TREE TO BE PRESERVED AND OR AS DIRECTED IN THE APPROVED TREE PROTECTION PLAN BY YORK REGION NATURAL HERITAGE AND FORESTRY.
3. TPZ IS DELINEATED AS A RADIUS, IN METRES, MEASURED OUTWARD FROM THE BASE OF THE TREE TO BE PROTECTED. THE TPZ RADIUS IS DETERMINED BASED UPON THE DIAMETER AT BREAST HEIGHT (DBH) OF THE TREE'S MAIN STEM. FOR MULTI-STEMMED TREES, THE DIAMETER OF THE MAIN STEM OF STEMS OF A TREE ARE MEASURED IN CENTIMETRES AT 30cm ABOVE GRADE LEVEL. THE TPZ FOR ALL TREES 24cm DBH OR LESS IS A MINIMUM OF 2.4m. THE TPZ FOR TREES 25cm OR GREATER IS 10cm FOR EVERY CENTIMETRE OF DBH.
4. TPZ BARRIERS SHALL PROTECT CONTIGUOUS GROUPS OF TREES WHEREVER POSSIBLE.
5. TPZ BARRIERS SHALL BE ESTABLISHED, INSPECTED, AND APPROVED BY YORK REGION OR ITS DESIGNATE PRIOR TO COMMENCEMENT OF ANY SITE DISTURBANCE.
6. TPZ BARRIERS SHALL BE INSPECTED BY A QUALIFIED TREE PROFESSIONAL ONCE WEEKLY OR ON A SCHEDULE APPROVED BY THE YORK REGION OR ITS DESIGNATE.
7. TPZ BARRIERS SHALL NOT BE MOVED, MODIFIED, OR RELOCATED AT ANY TIME WITHOUT PRIOR APPROVAL OF YORK REGION OR ITS DESIGNATE.
PLAN VIEW
TREE
MINIMUM REQUIRED TREE PROTECTION ZONE (TPZ)
TREE PROTECTION ZONE (TPZ) BARRIER
STAKE DETAIL
WOOD SCREWS
125 mm MINIMUM
WOODEN STAKE
ORANGE CONSTRUCTION SAFETY FENCING (FRAMED CONSTRUCTION FENCING TYPE) ATTACHED WITH STAPLES
SIGNAGE (REFER TO DRAWING NHF-401)
2400 mm MAXIMUM
1200 mm MINIMUM
MINIMUM ONE STAKE SUPPORT LEG PER 2400mm, OR FRAME SECTION (SEE STAKE DETAIL)
CROSS BRACE
MINIMUM 3/8" PLYWOOD (SOLID HOARDING TYPE) ATTACHED WITH WOOD SCREWS
WOOD FRAME 2"X4"
York Region
Environmental Services
TREE PROTECTION ZONE (TPZ) BARRIER
DATE: JANUARY 2022
SCALE N.T.S.
REV. X X X
NHF - 400

TREE PROTECTION ZONE (TPZ)
PLEASE NOTE THAT ANY:
GRADE CHANGE
DUMPING
STORAGE
UNAUTHORIZED ENTRY
TREE INJURY OR REMOVAL
DISTURBANCE OF ANY KIND
IS STRICTLY PROHIBITED WITHIN THIS TPZ
THIS BARRIER SHALL NOT BE DAMAGED OR MOVED
PLEASE REPORT ANY ENTRY INTO THIS ZONE
TO NATURAL HERITAGE AND FORESTRY:
Access York -
1-877-464-9675 ext. 73000
accessyork@york.ca
York Region
MIN. 400 MM
MIN. 600 MM
York Region Environmental Services
TREE PROTECTION ZONE (TPZ) SIGNAGE
DATE: JANUARY 2022
SCALE N.T.S.
REV. X X
NHF - 401
NOTES
1. REFER TO YORK REGION STREET TREE AND FOREST PRESERVATION GUIDELINES FOR COMPLETE TREE PRESERVATION REQUIREMENTS.
2. TPZ SIGNAGE SHALL BE INSTALLED ON AT LEAST TWO SIDES OF THE TPZ BARRIER WITH DISTANCE BETWEEN SIGNS NOT TO EXCEED 10 METRES ON ANY ONE SIDE.