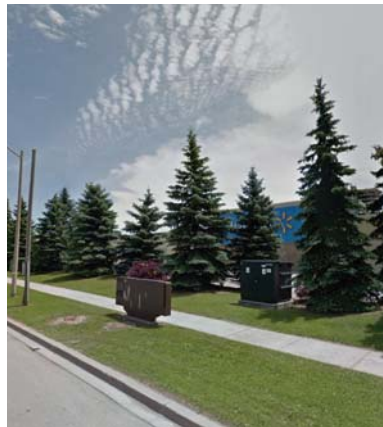




The City Above Toronto



**Tree Inventory and
Assessment:
EA for Portage Parkway
Widening and Extension,
Applewood Crescent to
Creditstone Road**

February 2016

Cima+ project #B000541



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Appendix A

Tree Inventory and Assessment Drawing TI-1 to TI-6



1. INTRODUCTION

CIMA+ has been retained by the City of Vaughan to complete an Environmental Assessment Study for Portage Parkway Widening and Extension from Applewood Crescent to Creditstone Road. The purpose of this Tree Inventory and Assessment Report is to record species, size, and condition of trees within the right-of-way, evaluate the expected impact of proposed construction, and to provide information and specifications to assist with tree preservation.

2. LIMITATIONS

The assessment presented in this report has been made using accepted standard arboriculture techniques as outlined in the Council of Tree and Landscape Appraisers *Guide for Plant Appraisal*, 9th Edition (2000). These techniques include visual examination of above ground parts of each tree. The trees observed were not climbed, 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.

Since trees are living organisms, 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 that are deemed to be in good condition. It is recommended that the trees be re-assessed periodically to identify changes in condition. 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.

CIMA+ has prepared this report for the sole use of the client. Any use of this report by a third party, as any decision based on this report, is the singular responsibility of the third party. CIMA+ will not be held responsible for eventual damages towards a third party resulting from decisions taken, or based, on this report.

3. METHODOLOGY

The site was visited by a CIMA+ ISA Certified Arborist on December 8, 2015. Trees were numbered, identified, measured, and assessed for condition. The tree inventory and assessment table containing this information is included in Section 5.

Drawings No. TI-1 to TI-6 show locations of the numbered trees included in the assessment. The drawings are included as Appendix A.

3.1 Tree Size

Size refers to trunk diameter (caliper or DBH) measured in centimetres at 1.4m above the ground. Where trees had more than one trunk from the base, the size of each trunk was recorded. Where trees forked to codominant trunks, each trunk was measured or the diameter was measured under the flare and the approximate height of the measurement was noted.

The size of smaller trees and shrubs is recorded in the Notes section as approximate height and/or width.

3.2 Condition Rating

Trees and shrubs were given a subjective condition rating of Excellent, Good, Fair, or Poor. Following is a summary of how the ratings are determined:

- + **EXCELLENT (E)**: no apparent health problems; good structural form
- + **GOOD (G)**: minor problems with health and/or structural form
- + **FAIR (F)**: more serious problems with health and/or structural form
- + **POOR (P)**: major problems with health and structural form
- + **DEAD (D)**: tree is dead

The notes section of the assessment table in this report includes details of observations made concerning the structural form and health of trees.

3.3 Observations

Several structural defects are included in the Notes section of the tree inventory and assessment table. Structural defects are often insignificant when a tree is small, but can pose problems when the tree grows larger and the weight of branches put added stress on defects that can cause weakness. Larger trees also have the potential to cause more damage should they fail. Following is an explanation of some of the problems included in the Notes section of the inventory and assessment table, and how they can affect trees over time.

- + *Girdling roots* are roots that cross over each other or around the trunk of the tree. As these roots grow larger, they can restrict the uptake of nutrients and water, and inhibit structural anchorage.
- + *Exposed surface roots* can be a result of erosion and soil compaction combined with increasing root diameter. It is important to protect exposed roots from pedestrian and vehicular traffic, and lawn mowers. Damage to roots can cause stress and can result in canopy dieback.
- + *Included bark* is bark that has become embedded in a crotch where limbs join, and causes weakened branch attachments. As the trunk and branch increase in diameter, the bark of each stem in the tight crotch begin to push apart, increasing the likelihood of failure.
- + *Narrow branch angles*, especially where there is included bark, can be a problem as trees grow larger because the inner wood is poorly attached.
- + *Codominant leaders* (2 trunks or branches of approximately equal size) often have narrow branch angles, and are associated with weak branch attachment. Strong branch attachments occur between 2 limbs of unequal size with enough space for branch enlargement and formation of a branch bark ridge.
- + When a tree has *multiple branches from the same point of attachment*, the branches usually have characteristics of weakly attached branches.



- + *Crossing branches* are often associated with narrow branch angles. Branches that cross over each other often rub, causing damage and therefore weakness to one or both branches, and crossing branches can eventually girdle each other.
- + *Sunken areas under scaffold branches* is often an indication of internal decay.
- + *Sapsucker holes* refers to holes in the trunk or branches made by birds in search of insects. This damage is a sign of insects in the tree, and can make trees more susceptible to other infection.
- + A tree with a *lean* can be more susceptible to windthrow and soil failure. *Self-correcting lean* refers to a natural correction of the lean by development of new growth that counteracts the lean of the trunk to provide a more balanced form.
- + *Dieback* refers to the ends of branches dying, which is often associated with root problems.
- + *Staghorn effect* refers to dead branches protruding through the crown of a tree, and often indicates a state of significant decline.
- + *Grapevines* growing over the canopy of trees suppress vigour and eventually kill trees by blocking sunlight. They also add weight that can make trees more susceptible to breakage during storms.
- + *Witches' broom* is a dense mass of shoots that result in a stunted appearance and can look like a bundle of twigs (or witches' broom). This can be caused by adverse environmental conditions such as road salt that kill terminal buds, or by insect or disease problems.

The detailed observations made concerning tree species, size, and condition are included in the tree inventory and assessment table in Section 4.

4. TREE INVENTORY AND ASSESSMENT TABLE

Tree No.	Species	Size (cm)	Rating	Notes	Impact
1	Blue Spruce	16	G	Small dead branches near base.	-
2	Blue Spruce	12	F	Somewhat sparse, small dead branches.	Remove due to new entrance location
3	Blue Spruce	13.5	FP	very short branches through the middle of canopy, sparse, small dead branches.	Remove due to new entrance location
4	Blue Spruce	16	FG	Somewhat sparse, small dead branches.	Remove due to new entrance location
5	Garden		F	Euonymus.	Remove due to new entrance location
6	Norway Maple	14	G	Codominant leaders, Euonymus in the garden at base	Preserve, install TPF; close to proposed sidewalk location

Tree No.	Species	Size (cm)	Rating	Notes	Impact
7	Norway Maple	7.5	FG	Girdling roots, wound on the trunk	Remove due to road widening
8	Norway Maple	9	F	Codominant leaders, one leader is dead. Garden at the base with Mugho Pine.	Preserve, install TPF; close to proposed sidewalk location
9	Norway Maple	7	FG	Girdling roots, adventitious shoots.	Remove due to road widening
10	Norway Maple	7.5	G	Girdling roots	Remove due to road widening
11	Norway Maple	10	G	Codominant leaders with crossing branches.	Preserve, install TPF; close to proposed sidewalk location
12	Norway Maple	7.5	G	Girdling roots and codominant leaders.	Remove due to road widening
13	Norway Maple	13	G	Codominant leaders with narrow branch angles. Euonymus in fair condition in garden at the base.	Preserve, install TPF; close to proposed sidewalk location
14	Norway Maple	8	FG	Girdling roots and codominant leaders.	Remove due to road widening
15	Norway Maple	13	G	Codominant leaders with narrow branch angles, included bark, and crossing branches.	Preserve, install TPF; close to proposed sidewalk location
16	Norway Maple	7.5	FG	Girdling roots, codominant leaders with narrow branch angles, small dead branches, and adventitious shoots.	Remove due to road widening
17	Norway Maple	16.5	G	Codominant leaders with narrow branch angles and included bark; crossing branches.	Preserve, install TPF; close to proposed sidewalk location
18	Norway Maple	8.5	FG	Girdling roots, crossing branches, small dead branches.	Remove due to road widening
19	Garden			Ornamental grasses.	Minor conflict with proposed sidewalk
20	Garden			Smart Centres sign. Mugho Pine shrubs with browning on edges.	Remove due to new entrance location
21	Norway Maple	8.5	F	Stunted growth.	Remove due to new entrance location



Tree No.	Species	Size (cm)	Rating	Notes	Impact
22	Norway Maple	14	G	Codominant leaders, adventitious shoots. Wound on trunk.	Remove due to new entrance location
23	Norway Maple	11.5	FG	Girdling roots, exposed surface roots, somewhat stunted growth.	Remove due to road widening
24	Norway Maple	17	G	Codominant leaders with narrow branch angles, wounds on the trunk.	Remove due to proposed sidewalk location
25	Norway Maple	8.5	F	Girdling roots and stunted growth. Mugho Pine shrubs at base	Remove due to road widening
26	Norway Maple	14.5	G	Girdling roots.	Remove due to road widening
27	Norway Maple	17	G		Remove due to proposed sidewalk location
28	Norway Maple	8.5	F	Adventitious shoots and somewhat stunted growth.	Remove due to proposed sidewalk location
29	Norway Maple	9.5	F	Girdling roots, leader is dead	Remove due to road widening
30	Honey Locust	11.5	G		-
31	Norway Maple	18	G	Wounds on trunk.	Remove due to proposed sidewalk location
32	Norway Maple	14	FG	Severe girdling roots, crossing branches, wounds on trunk	Remove due to road widening
33	Norway Maple	11	F	Codominant leaders, one is dead. Sunken wound on the trunk. Euonymus at the base	Remove due to proposed sidewalk location
34	Norway Maple	12	G	Girdling roots	Remove due to road widening
35	White Spruce	10	F	Sparse, top dead	Remove due to proposed sidewalk location
36	Norway Maple	10	FG	Girdling roots and small dead branches.	Remove due to road widening
37	Norway Maple	13	G	Mugho pine shrubs at the base.	Remove due to proposed sidewalk location
38	Norway Maple	8	FG	Girdling roots and codominant leaders.	Remove due to road widening

Tree No.	Species	Size (cm)	Rating	Notes	Impact
39	Ornamental Pear	11.5	G		Preserve, install TPF; close to proposed sidewalk location
40	Ornamental Pear	12	G		Preserve, install TPF; close to proposed sidewalk location
41	Ornamental Pear	10	FG	Dead leader, ornamental grasses at the base.	-
42	Norway Maple	8	FG	Girdling roots and small dead branches.	Remove due to road widening
43	Ornamental Pear	10.5	G	Ornamental grasses at the base.	-
44	Blue Spruce	17, 18, 17	G	Group of 3 trees, somewhat sparse.	Remove 1 tree due to proposed sidewalk location
45	Norway Maple	22.5	G	Girdling roots.	Preserve, install TPF; between proposed curb and sidewalk
46	Norway Maple	19	G	Girdling roots, codominant leaders with narrow branch angles and included bark, crossing branches.	Remove due to road widening
47	Norway Maple	19.5	G	Narrow branch angles with included bark, Burning Bush shrubs at the base.	Preserve, install TPF; between proposed curb and sidewalk
48	Norway Maple	24	G	Girdling roots.	Preserve, install TPF; between proposed curb and sidewalk
49	Honey Locust	7	G	Ornamental shrubs at the base.	Preserve, install TPF; between proposed curb and sidewalk
50	Blue Spruce	20	G		Preserve, install TPF; between proposed curb and sidewalk
51	Blue Spruce	22	G	Inner needle dieback.	Preserve, install TPF; between proposed curb and sidewalk
52	Blue Spruce	22	G		Preserve, install TPF; between proposed curb and sidewalk



Tree No.	Species	Size (cm)	Rating	Notes	Impact
53	Colorado Spruce	23	G	Browning at branch ends.	Remove due to road widening
54	Blue Spruce	19	G	Small dead branches.	Preserve, install TPF; between proposed curb and sidewalk
55	Blue Spruce	22	G	Small dead branches.	Preserve, install TPF; between proposed curb and sidewalk
56	Shrubs		G	Shrub bed with 3cm Honeylocust tree.	Possible impact due to sidewalk location; install TPF, preserve
57	Norway Maple	24.5	G	Girdling roots, codominant leaders with narrow branch angles and included bark, crossing branches.	Preserve, install TPF; between proposed curb and sidewalk
58	Norway Maple	23	G	Girdling roots, codominant leaders with narrow branch angles and included bark, crossing branches.	Preserve, install TPF; between proposed curb and sidewalk
59	Norway Maple	22.5	G	Girdling roots.	Preserve, install TPF; between proposed curb and sidewalk
60	Blue Spruce	17	F	Sparse.	Remove due to proposed sidewalk location
61	Blue Spruce	18	G		Preserve, install TPF; between proposed curb and sidewalk
62	Blue Spruce	19	G		Remove due to proposed sidewalk location
63	Blue Spruce	24	G		Preserve, install TPF; between proposed curb and sidewalk
64	Ornamental Shrubs		G		Preserve, install TPF; between proposed curb and sidewalk
65	Blue Spruce	21	G		Remove due to proposed sidewalk location
66	Blue Spruce	21	G		Preserve, install TPF; between proposed curb and sidewalk

Tree No.	Species	Size (cm)	Rating	Notes	Impact
67	Blue Spruce	19	FG	Somewhat sparse.	Remove due to proposed sidewalk location
68	Blue Spruce	18	FG	Branch dieback near the base.	Preserve, install TPF; between proposed curb and sidewalk
69	Blue Spruce	25	G		Preserve, install TPF; between proposed curb and sidewalk
70	Blue Spruce	24	FG	Somewhat sparse.	Preserve, install TPF; between proposed curb and sidewalk
71	Blue Spruce	18, 16	G	Needle dieback. 2 trunks from the base.	Remove due to proposed sidewalk location
72	Blue Spruce	21	FG	Needle dieback.	Preserve, install TPF; between proposed curb and sidewalk
73	Blue Spruce	20	G		Remove due to proposed sidewalk location
74	Ornamental Shrubs		G		Preserve, install TPF; between proposed curb and sidewalk
75	Blue Spruce	20	G		Preserve, install TPF; between proposed curb and sidewalk
76	Blue Spruce	20	G		Preserve, install TPF; between proposed curb and sidewalk
77	Norway Maple	16.5	FG	Girdling roots, decay at pruning wounds, small dead branches, adventitious shoots, wounds on trunk.	Remove due to road widening
78	Norway Maple	13	G	Girdling roots, decay at pruning wounds, adventitious shoots.	Remove due to road widening
79	Blue Spruce	24	G		Preserve, install TPF; between proposed curb and sidewalk
80	Blue Spruce	22	G	Browning on branch ends.	Preserve, install TPF; between proposed curb and sidewalk

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Tree No.	Species	Size (cm)	Rating	Notes	Impact
81	Blue Spruce	19	G	Needle dieback.	Preserve, install TPF; between proposed curb and sidewalk
82	Blue Spruce	23	G		Remove due to proposed sidewalk location
83	Norway Maple	25	G	Girdling roots, ornamental shrubs at the base.	Preserve, install TPF; between proposed curb and sidewalk. Remove shrubs due to sidewalk location and sight lines for new entrance
84	Norway Maple	22	G	Girdling roots, exposed surface roots.	Preserve, install TPF; between proposed curb and sidewalk
85	Norway Maple	24.5	G	Girdling roots, exposed surface roots.	Remove due to new entrance location
86	Norway Maple	17	FG	Girdling roots, decay at pruning wounds, small dead branches, adventitious shoots.	Remove due to road widening
87	Austrian Pine	12	G	Codominant leaders, staking wire around the trunk.	Remove due to new entrance location
88	Honey Locust	6.5	F	Girdling roots, crooked trunk, leader is dead.	Remove due to road widening
89	Blue Spruce	15	G	Somewhat sparse.	Remove due to new entrance location
90	Blue Spruce	12	P	Almost dead.	Remove due to new entrance location
91	Blue Spruce	17	G		Remove due to proposed sidewalk location
92	Norway Maple	20	G	Girdling roots and 3 codominant leaders, multiple branches from the same point of attachment, decay at pruning wounds, adventitious shoots.	Remove due to road widening
93	Ornamental Shrubs		G		Preserve, install TPF; between proposed curb and sidewalk
94	Ash	7.5	D	Emerald Ash Borer exit holes.	Remove – dead
95	Ash	7.5	D	Emerald Ash Borer exit holes.	Remove – dead

Tree No.	Species	Size (cm)	Rating	Notes	Impact
96	Colorado Spruce	11	G		Preserve, install TPF; between proposed curb and sidewalk
97	Colorado Spruce	12	G		Remove due to proposed sidewalk location
98	Colorado Spruce	10	G		Preserve, install TPF; between proposed curb and sidewalk
99	Norway Maple	20.5	FG	Codominant leaders with narrow branch angles and included bark. Adventitious shoots. Large wound with decay at the base of the trunk.	Remove due to road widening
100	Ash	21	P	Codominant leaders with narrow branch angles and included bark, adventitious shoots. Marked for removal. Emerald Ash Borer exit holes.	Remove due to road widening
101	Ash	24	P	Codominant leaders with narrow branch angles and included bark, adventitious shoots. Marked for removal. Emerald Ash Borer exit holes.	Remove due to road widening
102	Ash	14	P	Codominant leaders, adventitious shoots. Marked for removal. Emerald Ash Borer exit holes.	Remove due to road widening
103	Ash	25	P	Adventitious shoots, broken branches. Marked for removal. Emerald Ash Borer exit holes	Remove due to road widening
104	Norway Maple	24	FP	Codominant leaders with narrow branch angles and included bark, crossing branches, multiple branches from the same point of attachment. Large canker at the main union.	Remove due to road widening
105	Austrian Pine	40	FG	Slight lean, clear of branches to approx. 3m.	-
106	Spirea Shrubs		G		-
107	Norway Maple	15	G	Girdling roots, codominant leaders, small dead branches, adventitious shoots.	Remove due to road extension

Tree No.	Species	Size (cm)	Rating	Notes	Impact
108	Lilac Shrubs		G	Multi stem.	Remove due to road extension
109	White Spruce	26	G	Tree tag 0974. Somewhat sparse at base.	Remove due to road extension
110	White Spruce	37	G	Tree tag 1043.	Remove due to road extension
111	White Spruce	36	G	Tree tag 0761. Dead branches near base.	Remove due to road extension
112	Hybrid Maple	33.5, 17	F	Tree tag 1046. 2 trunks from the base.	Remove due to road extension
113	Hybrid Maple	15-39		Tree tag 1047. Red Osier Dogwood at the base, grapevine growing through canopy	Remove due to road extension
114	Ash	12.5	D	Tree tag 1041.	Remove due to road extension
115	Austrian Pine		G	Approx. 2m height. Similar trees nearby.	Remove due to road extension
116	Hybrid Maple	17	FG	Tree tag 1040. Small dead branches. 2 trunks from the base.	Preserve, install TPF; between proposed curb and sidewalk
117	Hawthorn Shrubs		G	Approx. 3m height	Remove due to road extension
118	Willow Shrub		G	Multi stem	Remove due to road extension
119	Group		G	3 Silver Maple trees, 10-30cm, 1 Malus approx. 20cm	Remove due to road extension
120	Poplar	8.5	G	Branching to base of trunk	Remove due to road extension
121	Hawthorn Shrub		G	Multi stem.	Remove due to road extension
122	Hawthorn Shrub		G	Multi stem.	Remove due to road extension
123	Red Osier Dogwood		G	Multi stem.	Remove due to road extension
124	Willow Shrub		G	Multi stem thicket of shrubs	Remove due to road extension

Tree No.	Species	Size (cm)	Rating	Notes	Impact
125	Willow	25	F	Branching to the base, broken branches.	Remove due to road extension
126	Russian Olive	12	F	Multi stem, broken branches. Red Osier Dogwood adjacent	Preserve, install TPF; beyond proposed right of way
127	Group		G	12cm Manitoba Maple, 15cm Norway Maple, 5-12cm Hybrid Maples.	Remove north end of group due to road extension
128	Silver Maple	57.5		Tree tag 1024. Codominant leaders with narrow angle branches and included bark, small dead branches	Preserve; beyond proposed right of way
129	Group			15cm Bur Oak with grapevine smothering canopy, and sap sucker holes. 25cm Bur Oak with tree tag 787, and 30cm Bur Oak with tree tag 788. Bur Oak with codominant leaders -17cm and 15cm. 28cm Black Walnut with sapsucker holes and codominant leaders. 3 trunk Bitternut Hickory – 9cm, 8cm, 9cm. 5cm Bitternut Hickory. Norway Maple trees up to 10cm. Grove of shrubby Hawthorn up to 10cm, dog-strangling vine.	Preserve; beyond proposed right of way
130	Crack Willow	Approx 100	FP	Large live trunk off failed leader which is crushing fence. Several failed branches, extensive decay	Preserve; beyond proposed right of way
131	Group			10cm Bur Oak, Red Osier Dogwood, Honeysuckle shrubs, row of Cedar chumps 5-15cm along the bottom of the bank. 3 White Pines approx. 25cm adjacent to cedar row near the top of slope. 6cm Black Walnut, 20 Poplars ranging from 5-15cm, Manitoba Maple clumps ranging from 20-25cm and leaning. Group of about 10 White Spruce at North end of the group ranging from 5-10cm.	Remove most of group due to road extension; preserve south end beyond proposed ROW
132	Norway Maple	25	G	Girdling roots, narrow branch angles with included bark. Seam along the trunk.	Remove due to road widening

Tree No.	Species	Size (cm)	Rating	Notes	Impact
133	Ash	18.5	P	Codominant leaders, adventitious shoots. Emerald Ash Borer exit holes, sap sucker holes. Tree has been marked for removal.	Remove due to road widening
134	Ash	16.5	P	Adventitious shoots, Emerald Ash Borer exit holes. Marked for removal.	Remove due to road widening
135	Norway Maple	14.5	G	Multiple branches from the same point of attachment, small dead branches.	Remove due to road widening
136	Group			Low branching, multi stem ornamental trees in garden beds with a few day lilies at base.	-
137	Honey Locust	15	G		-
138	Honey Locust	11	G		-
139	Blue Spruce	14	G	Inner needle dieback.	Remove due to proposed sidewalk location
140	Blue Spruce	16	G		Remove due to proposed sidewalk location
141	Norway Maple	13	G	Girdling roots.	Remove due to proposed sidewalk location
142	Shrubs			Row of green juniper and 2 Spirea Shrubs.	Remove due to proposed sidewalk location
143	Norway Maple	13.5	G	Girdling roots.	Remove due to proposed sidewalk location
144	Red Osier Dogwood		F	Pruned	Remove due to proposed sidewalk location
145	2 Mugho Pine		G		Remove due to proposed sidewalk location
146	3 Multi-Stem Serviceberry Shrubs		G		Remove due to proposed sidewalk location
147	Mugho Pine Shrubs		F	Scale insect	Remove due to proposed sidewalk location
148	Norway Maple	14	G	3 codominant leaders.	Remove due to proposed sidewalk location
149	Shrub group		G	Row of Green Junipers, 2 Spirea	Remove due to proposed sidewalk location

Tree No.	Species	Size (cm)	Rating	Notes	Impact
150	Norway Maple	12.5	G	Girdling roots, 3 codominant leaders, crossing branches.	Remove due to proposed sidewalk location
151	Yew Shrub		G	1m tall and 2m wide.	Remove due to new entrance location
152	Norway Maple	20	G	Girdling roots, broken branch.	Remove due to new entrance location
153	Norway Maple	24	G	Girdling roots, codominant leaders with narrow branch angles and included bark, small dead branches.	Remove due to proposed sidewalk location
154	Norway Maple	17, 8.5	G	Shrubby form, low branches.	Remove due to proposed sidewalk location
155	Austrian Pine	30	G	Lower branch dieback.	Preserve, install TPF; close to proposed sidewalk location
156	Austrian Pine	32	G		Remove due to proposed sidewalk location
157	Shrubs		G	Group of multi stem ornamental shrubs	-
158	Shrubs		G	Group approx. 3m tall.	-
159	Austrian Pine	22	FP	Dead lower canopy.	-
160	Austrian Pine	39	G		Remove due to proposed sidewalk location
161	Austrian Pine	36	G		Preserve, install TPF; close to proposed sidewalk location
162	Norway Maple	26.5	G	Girdling roots, codominant leaders with narrow branch angles and included bark.	Remove due to road widening
163	Blue Spruce	22	G	Slight lean.	-
164	Blue Spruce	30	G	Small dead branches. Dead lower branches.	-
165	Blue Spruce	26	G	Needle dieback.	-
166	Norway Maple	25.5		Severe girdling roots, codominant leaders with narrow branch angles and included bark, multiple branches from the same point of attachment.	-

Tree No.	Species	Size (cm)	Rating	Notes	Impact
167	Yew Shrubs			Adjacent to a transformer. 1.5-2m tall and 2-3m wide.	-
168	Group		G	2 Upright Blue Juniper Shrubs approx. 2m tall. Crimson Sentry Norway Maple, approx. 10cm at base, branching to the base, trunk being girdled by staking wire	-
169	Norway Maple	7.5	G	Adventitious shoots.	-
170	Group			2 Narrow Blue Spruce, Crimson Sentry Norway Maple 10cm with a slight lean and staking wire girdling the trunk. Blue Carpet Juniper shrubs.	-
171	Norway Maple	6.5	F	Being girdled by staking wire.	-
172	Norway Maple	23	G	3 codominant leaders	Remove due to road widening
173	Spirea Shrubs		G		Remove due to proposed sidewalk location
174	Honey Locust	21	G	Codominant leaders.	-
175	Garden		G	Burning Bush shrubs.	Remove due to proposed sidewalk location
176	Honey Locust	22	G		Remove due to proposed sidewalk location
177	Austrian Pine	32	G		Remove due to proposed sidewalk location
178	Honey Locust	22	G	Multiple branches from the same point of attachment.	Remove due to proposed sidewalk location
179	Honey Locust	15	G	Codominant leaders.	Remove due to proposed sidewalk location
180	Honey Locust	19	G	Codominant leaders, buried root collar	Remove due to proposed sidewalk location
181	Honey Locust	20	G	Codominant leaders, buried root collar. Burning Bush shrubs at the base.	Remove due to proposed sidewalk location
182	Honey Locust	19	G	Buried root collar.	Remove due to proposed sidewalk location
183	Honey Locust	22	G		Remove due to proposed sidewalk location

Tree No.	Species	Size (cm)	Rating	Notes	Impact
184	Honey Locust	21	G	Codominant leaders and Burning Bush at the base.	Remove due to proposed sidewalk location
185	Austrian Pine	32	G		Remove due to proposed sidewalk location
186	Austrian Pine	33.5	G		Remove due to proposed sidewalk location
187	Austrian Pine	24	G		Remove due to proposed sidewalk location
188	Austrian Pine	29	G		Remove due to proposed sidewalk location
189	Honey Locust	18	G		Remove due to proposed sidewalk location
190	Honey Locust	24.5	G	Codominant leaders.	Remove due to proposed sidewalk location
191	Austrian Pine	24	G		Remove due to proposed sidewalk location
192	Austrian Pine	25	G		Remove due to proposed sidewalk location
193	Austrian Pine	25	G		Remove due to proposed sidewalk location
194	Honey Locust	28	G		Remove due to proposed sidewalk location
195	Honey Locust	19	G		Remove due to proposed sidewalk location
196	Honey Locust	30	G	Codominant leaders, decay at pruning wounds. Spreading Green Juniper and Burning Bush shrubs at the base.	Remove due to proposed sidewalk location
197	Norway Maple	26.5	G	Decay at pruning wounds, buried root collar. Burning Bush shrubs at base.	-
198	Norway Maple	21	G	Codominant leaders.	-
199	Norway Maple	17	FG	Girdling roots, small dead branches.	Preserve, install TPF; close to proposed curb alignment
200	Norway Maple	16	G	Girdling roots, small dead branches, adventitious shoots.	Preserve, install TPF; close to proposed curb alignment

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Tree No.	Species	Size (cm)	Rating	Notes	Impact
201	Linden	25	G	Red mulch.	-
202	Shrubs		G	9 Potentilla.	-
203	Linden	27	G	Codominant leaders.	-
204	Shrubs		G	Spreading Green Juniper & Potentilla	-
205	Honey Locust	19	G	Small dead branches, adventitious shoots.	Remove due to proposed sidewalk location
206	Honey Locust	11	FP	Adventitious shoots, dead leader, extensive trunk decay	Remove due to proposed sidewalk location
207	Honey Locust	17	G	Small dead branches, recent bark damage.	Remove due to proposed sidewalk location
208	Austrian Pine	20	FG	Bow at base of trunk	Remove due to proposed sidewalk location
209	Austrian Pine	20.5	FG	Lean, broken branch.	Remove due to proposed sidewalk location
210	Austrian Pine	20	FG		Remove due to proposed sidewalk location
211	Honey Locust	17	G	Codominant leaders, shrubs at base.	Remove due to proposed sidewalk location
212	Honey Locust	16.5	G	Adventitious shoots.	Remove due to proposed sidewalk location
213	Austrian Pine	24	F	Sparse, bow at base of trunk	Remove due to proposed sidewalk location
214	Honey Locust	17	G	Codominant leaders, adventitious shoots.	Remove due to proposed sidewalk location
215	Honey Locust	16	G		Remove due to proposed sidewalk location
216	Honey Locust	16.5	G	Garden at the base with Spirea shrubs	Remove due to proposed sidewalk location
217	Honey Locust	15	G	Codominant leaders. Garden at the base with Spirea shrubs	Remove due to proposed sidewalk location
218	Honey Locust	14.5	G	Leader is dead. Garden at the base with Spirea Shrubs.	Remove due to proposed sidewalk location
219	Honey Locust	17.5	G		Remove due to proposed sidewalk location

Tree No.	Species	Size (cm)	Rating	Notes	Impact
220	Honey Locust	15.5	G	Leaning, shrubs at the base.	Remove due to proposed sidewalk location
221	Austrian Pine	28.5	FG		Remove due to proposed sidewalk location
222	Austrian Pine	28	G		Remove due to proposed sidewalk location
223	Linden	16.5	G	Adventitious shoots.	Remove due to proposed sidewalk location
224	Linden	27	G	Codominant leaders with narrow branch angles and included bark, adventitious shoots.	Remove due to proposed sidewalk location
225	Honey Locust	9	G	Small dead branches.	Remove due to road widening
226	Linden	14	FG	Adventitious shoots.	Preserve, install TPF; close to proposed sidewalk location
227	Linden	14.5	G	Slight witches' broom.	Preserve, install TPF; close to proposed sidewalk location
228	Linden	13.5	G	Slight witches' broom.	Preserve, install TPF; close to proposed sidewalk location
229	Linden	15.5	G		Preserve, install TPF; close to proposed sidewalk location
230	Linden	13.5	G		Preserve, install TPF; close to proposed sidewalk location
231	Linden	16	G		Preserve, install TPF; close to proposed sidewalk location
232	Privet Hedge		G	Clipped, 1.2m height	Preserve, install TPF; close to proposed sidewalk location
233	Ginkgo	9	G		Preserve, install TPF; close to proposed sidewalk location



Tree No.	Species	Size (cm)	Rating	Notes	Impact
234	Ginkgo	9	G	Spirea at the base.	Preserve, install TPF; close to proposed sidewalk location
235	Ginkgo	12	G	Juniper and Spirea Shrubs at the base.	-
236	Pin Oak	8	F	Adventitious shoots, witches broom'	Preserve, install TPF; close to proposed sidewalk location
237	Pin Oak	15	FG	Decay at pruning wounds, adventitious shoots, witches' broom	Preserve, install TPF; close to proposed sidewalk location
238	Pin Oak	15	G		Preserve, install TPF; close to proposed sidewalk location
239	Pin Oak	13.5	G		Preserve, install TPF; close to proposed sidewalk location
240	Privet Hedge		G	Clipped, approx. 1.2m tall.	Preserve, install TPF; close to proposed sidewalk location
241	Group			Ornamental trees and spreading green junipers.	-
242	Honey Locust	7	G	Small dead branches, decay at the branch union.	-
243	Honey Locust	8	G		Remove due to road widening
244	Honey Locust	9.5	FG	Seam with decay along the trunk.	Remove due to road widening
245	Honey Locust	8.5	G	Small dead branches.	Remove due to road widening
246	Honey Locust	9	G		Remove due to road widening
247	Honey Locust	9	G	Dead branch lodged in the canopy.	Remove due to road widening
248	Honey Locust	10	G	Small dead branches.	Remove due to road widening
249	Honey Locust	10	G	Small dead branches.	Remove due to road widening

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Tree No.	Species	Size (cm)	Rating	Notes	Impact
250	Honey Locust	10.5	G	Decay at pruning wounds.	Remove due to road widening
251	Honey Locust	10	G	Decay at pruning wounds.	Remove due to road widening
252	White Pines	App. 15	G		-
253	Norway Maple	App. 15	G		-
254	Blue Spruce	App. 10	G		-
255	Blue Spruce	App. 10	G		-
256	White Spruce	App. 15	G		Remove due to proposed sidewalk location
257	White Spruce	App. 15	G		Remove due to proposed sidewalk location
258	White Spruce	App. 15	G		Remove due to road extension
259	Red Oak	App. 15	G		Remove due to road extension
260	3 Emerald Cedar		G	Approx. 4m tall.	Remove due to road extension
261	Mixed			Hawthorn and Manitoba Maple.	Remove due to road extension
262	Manitoba Maple	App. 6	F	Growing through chain link fence. Prunus sapling adjacent	Remove due to road extension
263	Manitoba Maple	App. 5	F	Growing from corner of fence.	Remove due to road extension
264	Red Osier Dogwood Shrubs		G	1.5-2m tall.	Remove due to road extension
265	Manitoba Maple Sapling	App. 5		Shrubby form.	Remove due to road extension
266	Manitoba Maple	App. 15	F	Codominant leaders, low branching.	Remove due to road extension
267	3 Ash	6-10	F		Remove due to road extension and condition

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Tree No.	Species	Size (cm)	Rating	Notes	Impact
268	Ash Shrub	2-4	F	Regenerated from stump.	Remove due to road extension and condition
269	Ash	App. 35	FP	Codominant leaders, adventitious shoots, Emerald Ash Borer exit holes, broken branches.	Remove due to road extension and condition
270	Sumac	8-10	G	Codominant trunks, saplings nearby.	Remove due to road extension
271	Black Locust		FG	Trunks South of the fence cut off.	Remove due to proposed sidewalk location
272	Black Locust	App. 40	FG	Codominant leaders with decay at pruning wounds, small dead branches.	Remove due to proposed sidewalk location
273	Blue Spruce	28.5	G	Clear of branches to 2m.	-
274	Blue Spruce	19	F	Top is dead; clear of branches to 2m.	-
275	Blue Spruce	26	G	Clear of branches to 2m.	-
276	Hawthorn Shrubs		FG	Up to 2m tall.	-
277	Willow	App. 20-25	F	Small dead branches.	-
278	Manitoba Maple		F	Sapling	-
279	Russian Olive	App. 30 at base	F	Codominant leaders with narrow branch angles and included bark, broken branches, dead branches.	-
280	Manitoba Maple			Sapling. Red Osier Dogwood along top of slope adjacent to the sidewalk.	-
281	Saplings			One cut off.	-
282	Norway Maple	29.5	G	Adventitious branches along the lower trunk, grapevine interfering with growth	-
283	Linden	12.5	FP	Codominant leaders with narrow branch angle and included bark, adventitious shoots, decayed seam along trunk, broken branches.	Remove due to road extension
284	Garden		F	Spirea, Sandcherry and willow shrubs approx. 1-1.5m height	Remove due to road extension

Tree No.	Species	Size (cm)	Rating	Notes	Impact
285	Linden	19	F	Adventitious shoots, many pruned branches.	Remove due to road extension
286	Honeylocust	20	G		Remove due to road extension
287	Garden		F	Sandcherry shrubs	Remove due to road extension
288	Blue Spruce	App 25	FG	Somewhat sparse	Remove due to road extension
289	Blue Spruce	App 25	G		Remove due to road extension
290	Ash		P	Shrub form, regenerated from stump	Remove due to species and road extension
291	Ash		P	Shrub form, regenerated from stump	Remove due to species and road extension
292	Garden		FG	Sandcherry shrubs, approx. 1.2m height	Remove due to road extension
293	Blue Spruce	App 25	G		Remove due to road extension
294	Blue Spruce	App 25	G		Remove due to road extension
295	Norway Maple – Crimson leaves	20	G	Girdling roots, wound with decay on trunk	Remove due to road extension

5. CONSTRUCTION MANAGEMENT

The most typical construction damage to trees is root damage from compaction and severance. While the dripline of a tree's canopy is typically thought to be associated with the root area, the root zones can actually extend significantly beyond the dripline of the tree, sometimes up to 2 or 3 times the height of the tree.

To protect trees, grade changes and construction activities that could cause soil compaction should be kept away from trees as much as possible. If roots will be damaged by excavation equipment, it is better to cut roots cleanly with sharp pruning tools rather than allow them to be torn by large equipment. Clean cuts will help to minimize decay and entry points for disease.

Equipment and materials should not be stored near trees, and equipment should not be left idling where exhaust could burn foliage.

In developing the site, new potential targets will be introduced (people and property), and this must be considered when developing a tree preservation plan. For example a tree with broken branches and



decay is not hazardous if there are no potential targets present, but if development brings a potential target within the vicinity of the tree, pruning to reduce the likelihood of failure should be carried out. The effect of construction must also be considered in how it will affect the likelihood of failure of a tree, such as whether roots will be affected or whether removing adjacent trees will make a retained tree more susceptible to windthrow.

6. ASSESSMENT OF CONSTRUCTION IMPACT

The Impact column in the Tree Inventory and Assessment table notes the expected impact of the road widening based on a cross-section that includes 2 lanes and a centre median, with turning lanes. When the preferred solution is finalized, removals required should be re-assessed.

A dash (-) in the Impact column indicates that there is no expected impact.

The reason for required removals is noted.

Where construction limits will be close to existing trees, Tree Protection Fencing has been suggested to ensure that disturbance to the root zone is limited.

It is recommended that new tree planting take place along the road corridor where space allows, possibly including on adjacent private property. Species should be non-invasive, and tolerant of urban conditions.

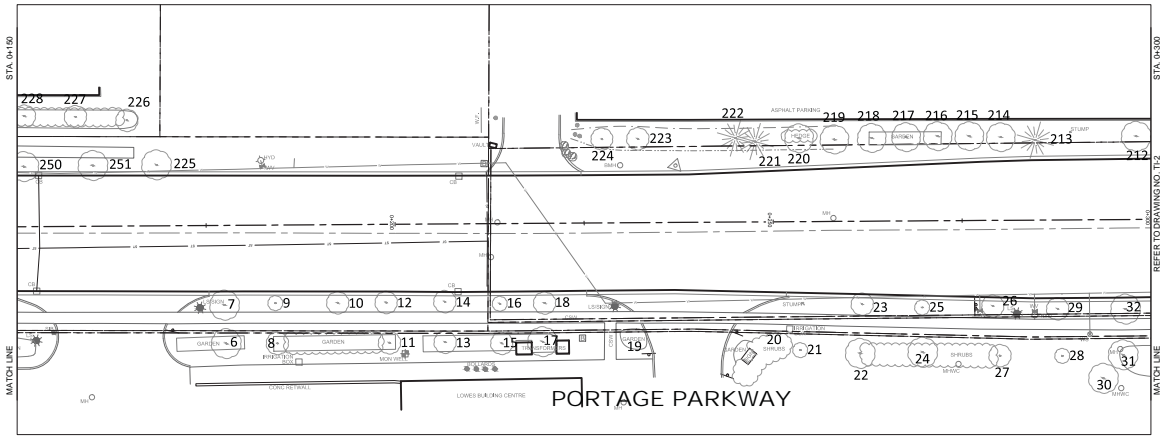
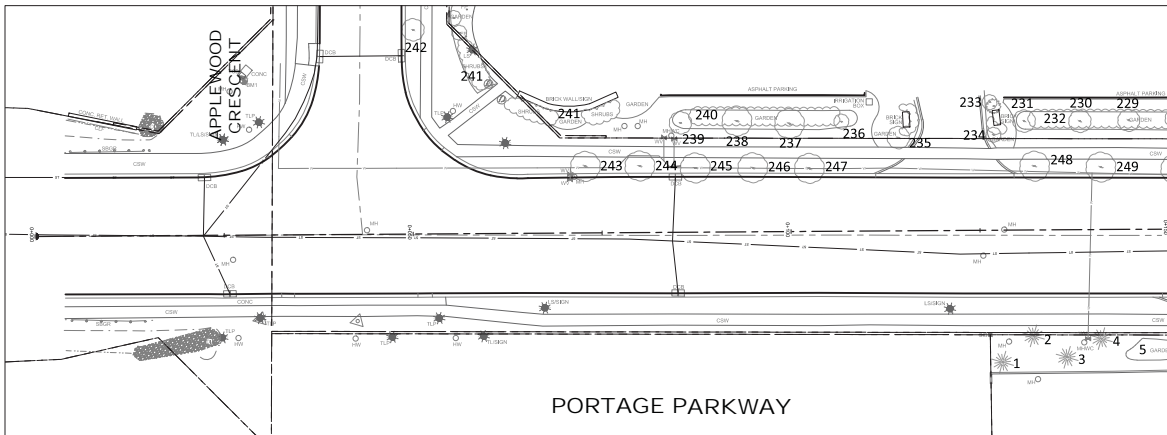
7. Certification

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



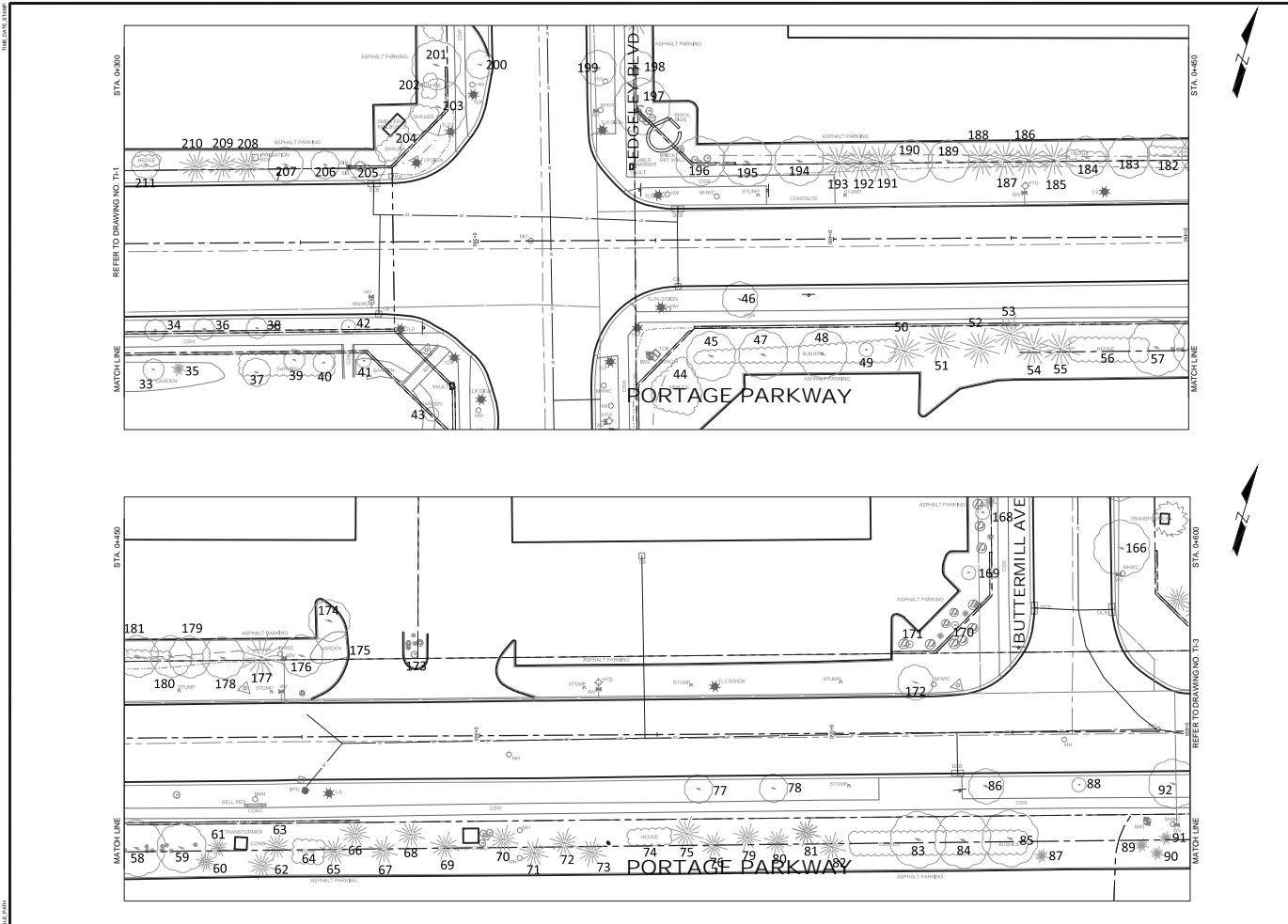
Lisa Cullen, ISA Certified Arborist ON-0741A

**APPENDIX A
TREE INVENTORY DRAWINGS
TI-1 TO TI-6**



<p>EXISTING TREES WITH TREE INVENTORY NUMBERS (SEE TREE REPORT)</p>	
<p>CIMA <small>CITY IMPROVEMENTS IN ASSOCIATION</small> 2027 Hurvick Road, Suite 400 Burlington ON, L7M 3J7 Phone: 905 288-2222 Fax: 905 288-2222 www.cima.ca</p>	
<p>City of Vaughan <small>The City Above Toronto</small></p>	
<p>EA FOR PORTAGE PARKWAY WIDENING AND EXTENSION, APPLEWOOD CRES. TO CREDITSTONE RD.</p>	
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<p>DESIGNER: [Name]</p>	<p>CHECKER: [Name]</p>
<p>DATE: DECEMBER 2015</p>	<p>1 of 6</p>



EXISTING TREES WITH TREE INVENTORY NUMBERS (SEE TREE REPORT)

CIMA
CONSULTANTS IN EXCELLENCE
 2027 Hurontario Road, Suite 430
 Burlington ON L7M 2J7
 Phone: 905-336-0352
 Fax: 905-336-0353
 www.cima.ca

City of Vaughan
 The City Above Toronto

EA FOR PORTAGE PARKWAY WIDENING AND EXTENSION, APPELWOOD CRES. TO CREDITSTONE RD.

No.	Date	Description	By

TREE INVENTORY AND ASSESSMENT from Sta 0+300 to Sta 0+600

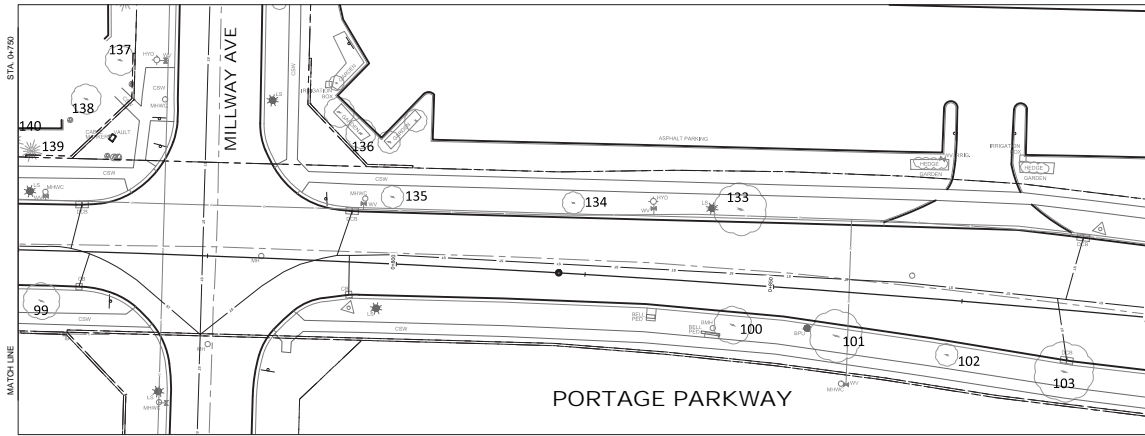
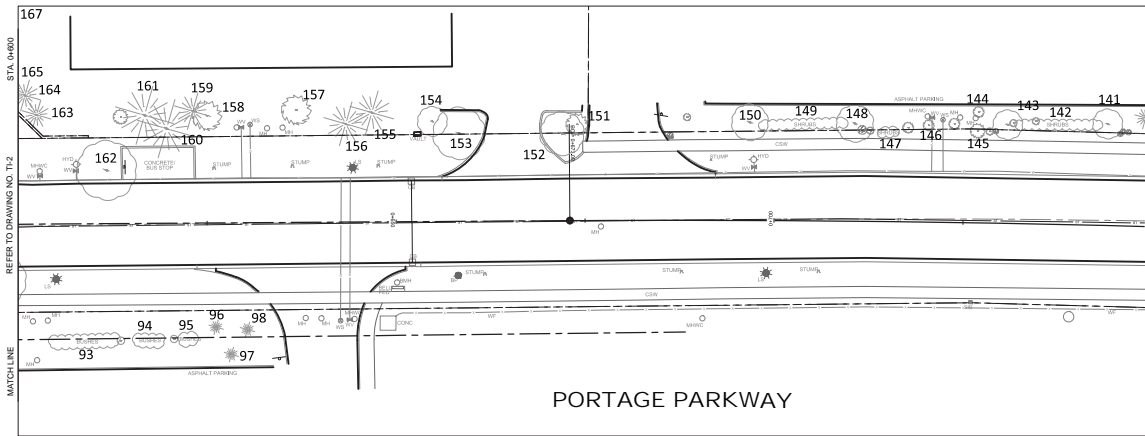
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CHECKED BY	DATE	SCALE
APPROVED BY	DATE	SCALE

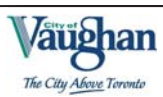
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 DECEMBER 2015 2 of 6

FILE # 1040 2/21/15 DATE PLOTTED: 2/21/15



140 139 EXISTING TREES WITH TREE INVENTORY NUMBERS (SEE TREE REPORT)

CIMA
CONSULTANTS IN EXCELLENCE
 2027 Hurontario Road, Suite 400
 Burlington ON L7R 2J7
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 Fax: 905 289-0548
 www.cima.ca



EA FOR PORTAGE PARKWAY WIDENING AND EXTENSION, APPELWOOD CRES TO CREDITSTONE RD.

No.	Date	Description	By

TREE INVENTORY AND ASSESSMENT
 from Sta 0+600 to Sta 0+900

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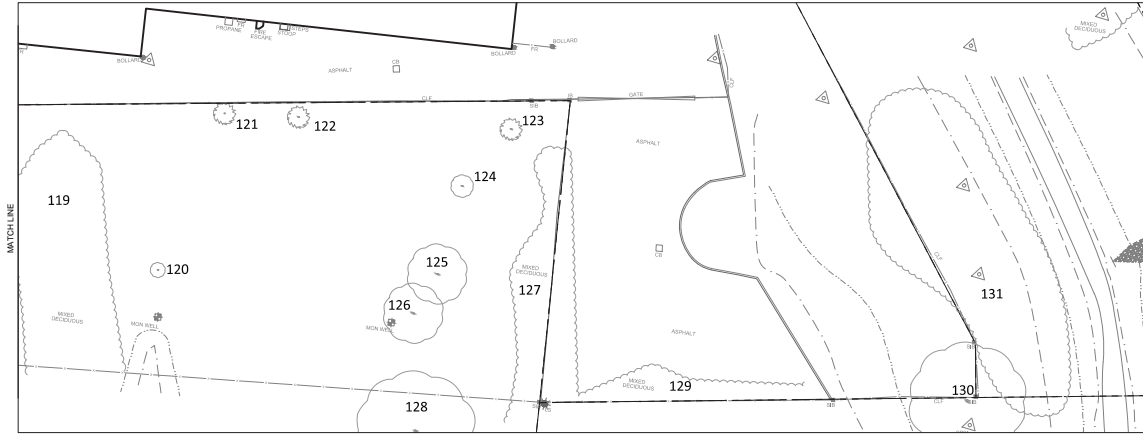
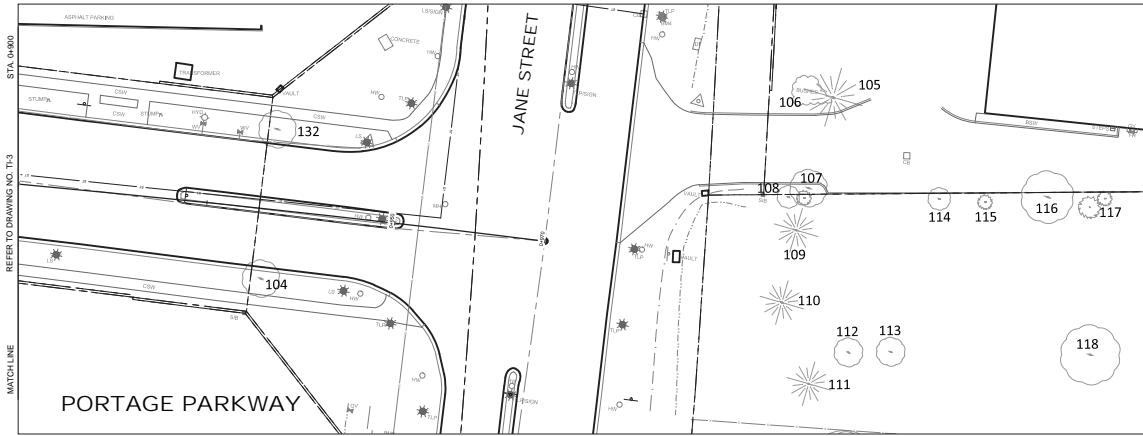
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ALL DIMENSIONS ARE IN METERS UNLESS OTHERWISE SPECIFIED

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CHECKED BY	DATE	SCALE	
APPROVED BY	DATE	SCALE	Ti-3


DATE: DECEMBER 2015 PAGE NO: 3 of 6

DATE: 04/23/2015




139
146

EXISTING TREES WITH TREE INVENTORY NUMBERS (SEE TREE REPORT)



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Burlington ON L7M 2P7
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Fax: 225-238-0262
www.cima.ca



The City Above Toronto

EA FOR PORTAGE PARKWAY WIDENING AND EXTENSION, APPELWOOD CRES TO CREDITSTONE RD.

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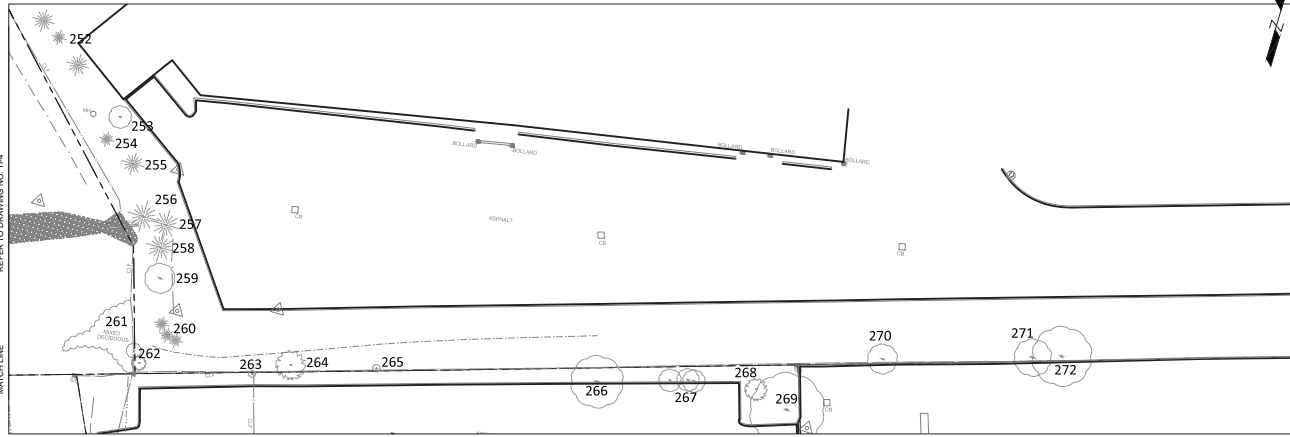
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from Sta 0+900 to Sta 0+970

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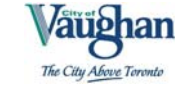
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DECEMBER 2015 4 of 6



140 139
 EXISTING TREES WITH
 TREE INVENTORY NUMBERS
 (SEE TREE REPORT)

CIMA
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 Burlington ON, L7M 2J7
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 Fax: 905-336-0268
 www.cima.ca



EA FOR PORTAGE PARKWAY
 WIDENING AND EXTENSION,
 APPLEWOOD CRES TO CREDITSTONE RD.

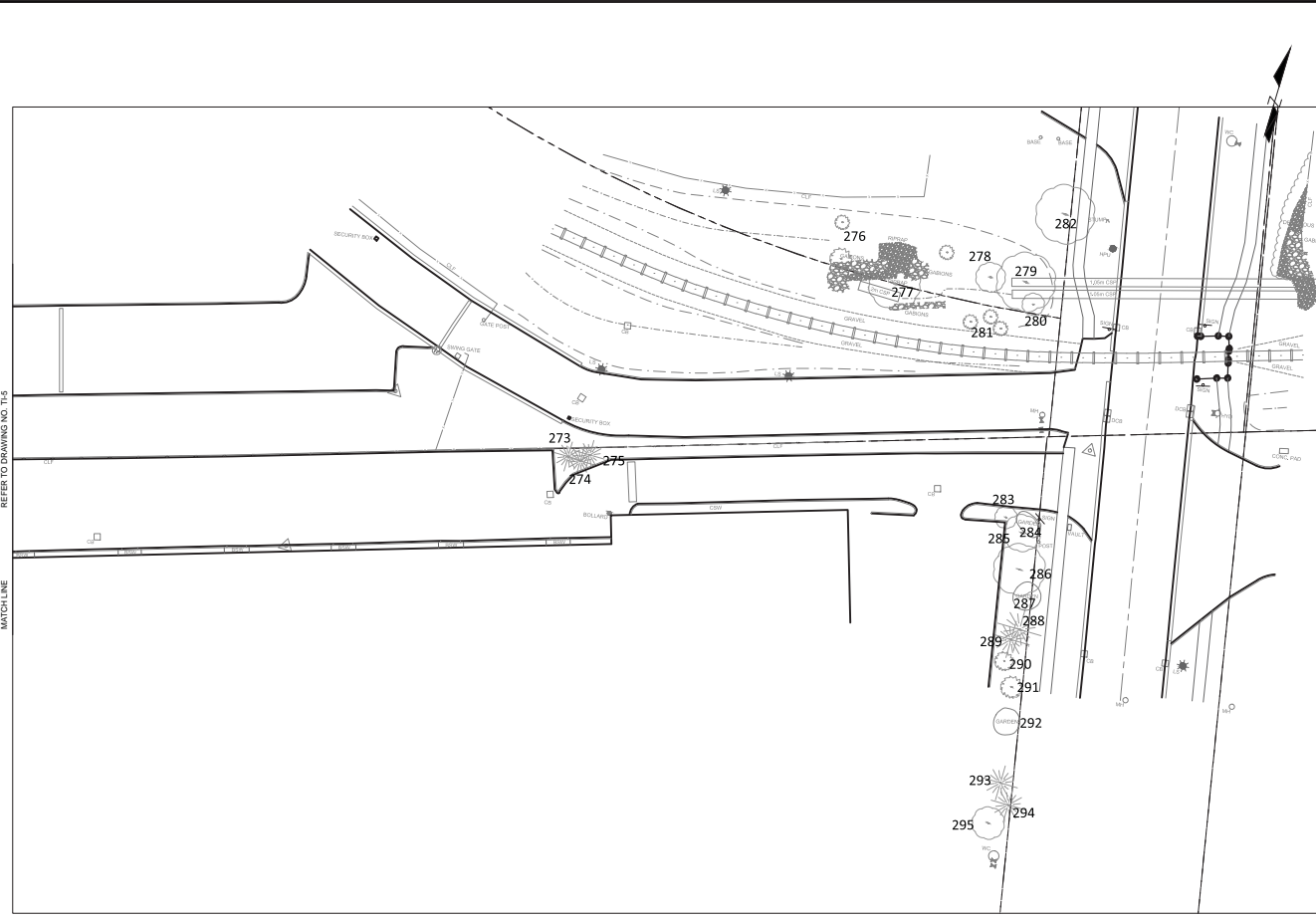
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CHECKED BY:	TI-5

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TREE INVENTORY
 AND ASSESSMENT

CIVIL

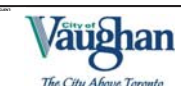
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PAGE:	5 of 6



REFER TO DRAWING NO. T1-5

MATCHLINE

146 139
EXISTING TREES WITH TREE INVENTORY NUMBERS (SEE TREE REPORT)



EA FOR PORTAGE PARKWAY WIDENING AND EXTENSION, APPELWOOD CRES. TO CREDITSTONE RD.

No.	Date	Description	By

TREE INVENTORY AND ASSESSMENT

CIVIL

PROJECT NO.	T1-6
DATE	DECEMBER 2015
SCALE	1:500

55 King Street East
Bowmanville, Ontario
L1C 1N4
T. 905-697-4464
F. 905-697-0443
www.cima.ca

