



Arborist Report

Highway 404 North Collector Roads

August, 2019

C11-08 - B000801

SUBMITTED BY CIMA CANADA INC.

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City of Markham

Arborist Report

Highway 404 North Collector Roads

Project no C11-08 – B000801

PREPARED BY:



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August, 2019

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Appendix A – Tree Inventory Drawings TI-0 to TI-7, Tree Inventory Table, Tree Preservation Detail

1. Introduction

CIMA Canada Inc. (CIMA) was retained by the City of Markham to complete a Tree Assessment for the Highway 404 North Collector Roads.

Refer to the Tree Inventory Key Plan (TI-0) for the proposed collector roads scope and location. The purpose of the Tree Assessment is to review the trees potentially affected by the proposed road construction.

Using the latest engineering design drawings, this report includes the project's impacts to trees and provides recommendations to avoid and mitigate tree loss and injury.

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 or trees in each group. 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

CIMA+ conducted a site visit on July 23 and August 15, 2019 to complete the following inventory and assessment. The on-site inventory of existing trees was carried out using the existing engineering design drawings overlaid with the latest available aerial photography.

All trees located within and adjacent to the proposed Right-of-Way (ROW) were inventoried. Trees were numbered, identified, measured, and assessed for condition. The tree inventory tables containing this information are included in Appendix A along with drawings TI-0 to TI-7 which shows the locations of the numbered trees surveyed.

3.1 Tree Size

Size refers to trunk diameter (caliper or DBH) measured in centimetres at 1.37 m 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. A plus/minus symbol has been added to the DBH of numbered trees that were not accessible and therefore the size is approximate, as noted in the Tree Inventory Table in Appendix A.

3.2 Observations

Several structural defects and health problems are included in the Comments section of the tree inventory and assessment table.

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

3.3 Tree Condition

Each tree was given a subjective rating for trunk integrity, canopy structure, and crown vigour, and an overall health condition rating of Excellent, Good, Fair, Poor, or Dead. The 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):** dead

3.4 Tree Protection Recommendations

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, where space is available, 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. If branches are likely to hang in the way of passing equipment, the branches should be pruned by a qualified arborist to avoid tearing and undue injury to the tree.

It is recommended that tree protection measures be followed for all trees that are identified to be retained. Where possible, hand dig areas closest to each tree to prevent any unnecessary

tearing or pulling of roots. Removal of roots that are greater than 2.5 centimetres in diameter or roots that are injured or diseased should be performed as follows:

- All roots that require pruning or removal shall be cut cleanly with sharp hand tools, by an ISA Certified Arborist or under direct supervision of an ISA Certified Arborist.
- Directional Root Pruning (DRP) is the recommended technique and should be employed during hand excavation around tree roots. Preserve the root bark ridge (similar in structure to the branch bark ridge). With DRP, objectionable and severely injured roots are properly cut to a lateral root that is growing downward or in a favorable direction.
- Avoid prolonged exposure of tree roots during construction - keep any exposed roots moist with water, burlap wrap or mulching material if exposed for longer than 4 hours.
- Equipment should not be left idling where exhaust could burn foliage.

3.4.1 Establish a Tree Protection Zone (TPZ)

The purpose of the tree protection zone is to prevent physical damage, soil compaction, root damage, and soil contamination during construction. Workers and all equipment necessary to complete the works shall not enter or disturb the tree protection zone. In order to prevent any damage, the following recommendations are offered:

- Tree protection fence to be installed as per detail in Appendix A.
- During construction it should be ensured that no equipment, supplies, fill or waste be placed within the tree protection zone.
- Tree protection shall be maintained in good condition at all times during construction.
- Tree protection fencing to remain until all construction activities have been completed.

The City of Markham outlines the following recommended TPZ's per Tree Permit Requirements, dated July 10, 2019.

Table 1. Tree Protection Zones for Individual Specimen Trees

DBH (cm)	Minimum Tree Protection Zone (TPZ) (radius in m)
<10	1.2
11-19	1.8
20-40	2.4
41-50	3.0
51-60	3.6
61-70	4.2
71-80	4.8
81-90	5.4
91-100	6.0
>100	6cm per 1cm ø

4. Summary

A total of 309 individual trees were surveyed and uniquely numbered within the ROW. As well as 17 tree groupings (Groups A to Q).

The drawings TI-1 to TI-7 in Appendix A illustrate each tree's location and proposed impact (if removal is required).

4.1 Tree Impacts

A total of 8 trees are expected to be injured, mostly due to proposed grading through TPZs as required for the roadway construction.

A total of 34 individual trees are expected to require removal due to conflict with construction zones along the roadway (trees #32-33, 94-96, 138-147, 152-159, 166-170, 177-178, 180, 194, 208 and 210). Tree groupings C, J and K will require complete removal and tree groupings F, M, N, O and P will require partial removal for the roadway completion.

5. Protected Species

Certain tree species are protected under the Ontario Endangered Species Act, 2007 (e.g., butternut), however, no species at risk were found on site at the time of inspection.

The *Migratory Birds Convention Act*, 1994 protects the nests of migratory birds. Trees to be removed from the site should be removed outside of the migratory bird-nesting window, the timing of which differs regionally across Canada as determined by Environment Canada. Following Environment Canada's guidelines, the window at this site is from April 1 to August 31. Trees may be removed during this restricted period only when trees are inspected for nests of protected bird species by a qualified avian biologist immediately prior to removal.

6. Certification and Closure

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

We trust that this report meets your needs at this time. If you have any questions, please do not hesitate to contact the undersigned.

Sincerely,



Lisa Cullen, OALA, ISA
ISA Certified Arborist ON-0741A

Attachments:

1. TI-0 to T17 TREE INVENTORY DRAWINGS
2. TREE INVENTORY TABLE
3. TREE PRESERVATION AND PROTECTION DETAIL



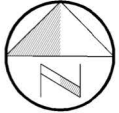
Appendix

TREE INVENTORY DRAWING TI-0 to TI-7

TREE INVENTORY TABLE

TREE PRESERVATION DETAIL





T: 289-289-0267
400-3027 Harvester Rd, Burlington ON L7N 3G7 CANADA

SCALE

N.T.S.

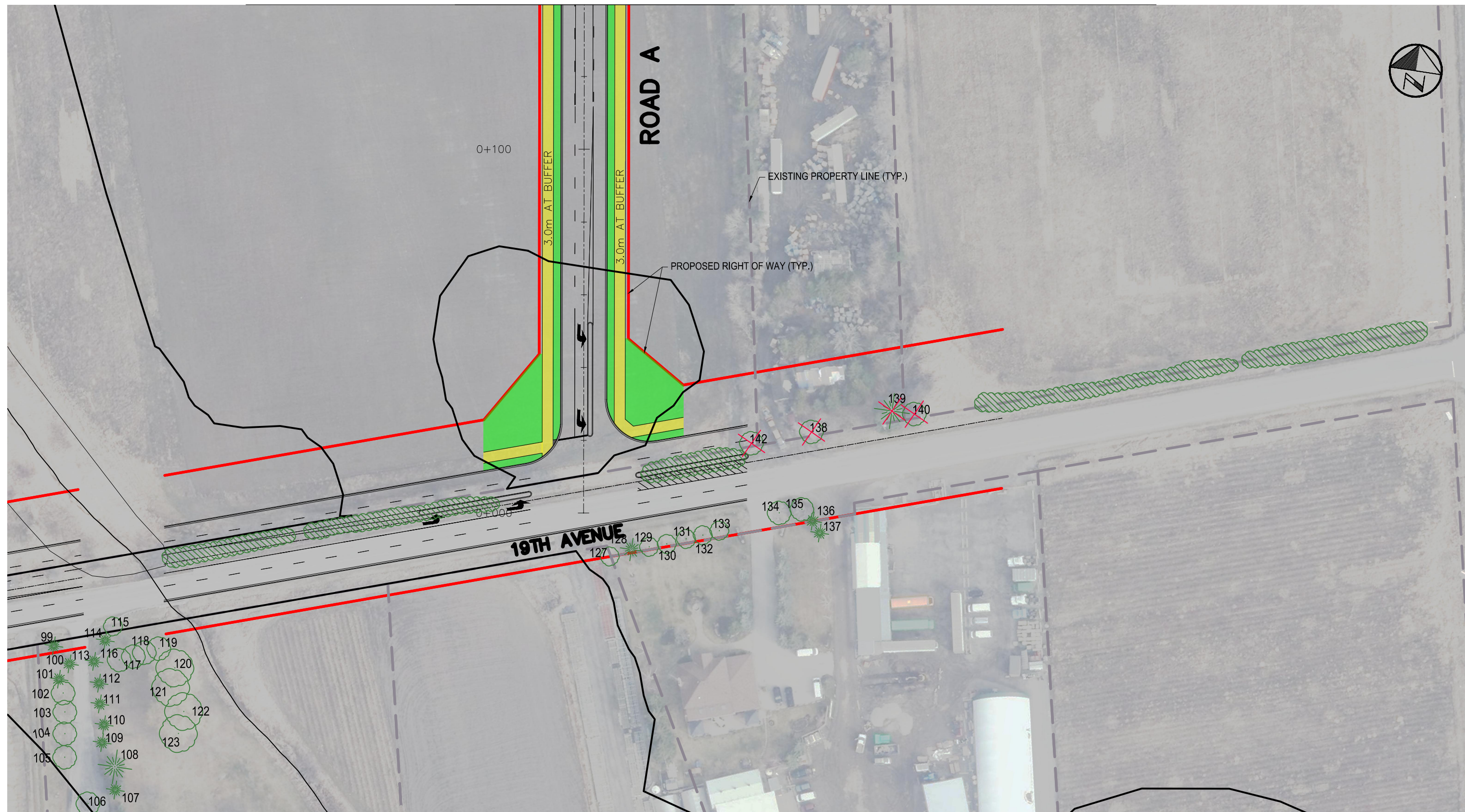
TREE INVENTORY KEY PLAN

THE REGIONAL MUNICIPALITY OF YORK
MARKHAM 404 COLLECTORS EA
FROM 19TH AVENUE TO WOODBINE AVENUE

PLATE

TI-0

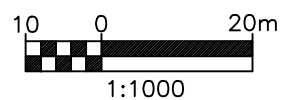
JULY 2019



CIMA+

T: 289-288-0267
400-3027 Harvester Rd, Burlington ON L7N 3G7 CANADA

SCALE



TREE INVENTORY

ROAD A – FROM STA. 0+000 TO STA. 0+140

THE REGIONAL MUNICIPALITY OF YORK
MARKHAM 404 COLLECTORS EA
FROM 19TH AVENUE TO WOODBINE AVENUE

LEGEND

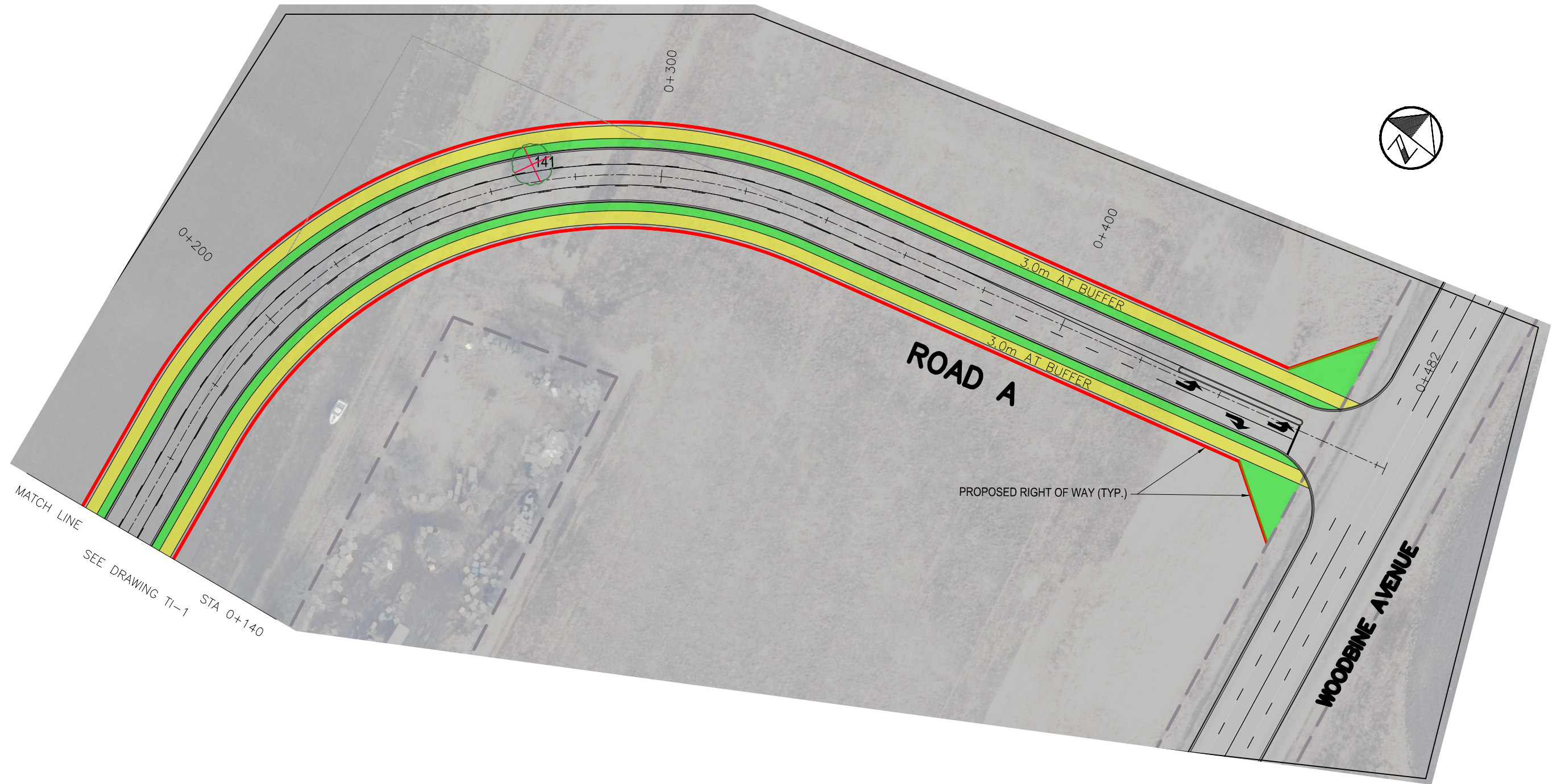
- EXISTING PROPERTY LINE
- PROPOSED RIGHT OF WAY
- 3.0m ACTIVE TRANSPORTATION (AT) BUFFER
- EXISTING BUCKTHORN AND CRABAPPLE

- EXISTING CRABAPPLE
- EXISTING BUCKTHORN
- EXISTING TREES TO BE RETAINED
- EXISTING TREES TO BE REMOVED

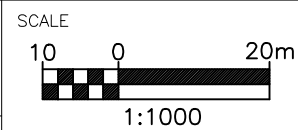
PLATE

TI-1

JULY 2019



T: 905-288-0267
400-3027 Harvester Rd, Burlington ON L7N 3G7 CANADA



TREE INVENTORY

ROAD A – FROM STA. 0+140 TO STA. 0+482

THE REGIONAL MUNICIPALITY OF YORK
MARKHAM 404 COLLECTORS EA
FROM 19TH AVENUE TO WOODBINE AVENUE

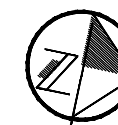
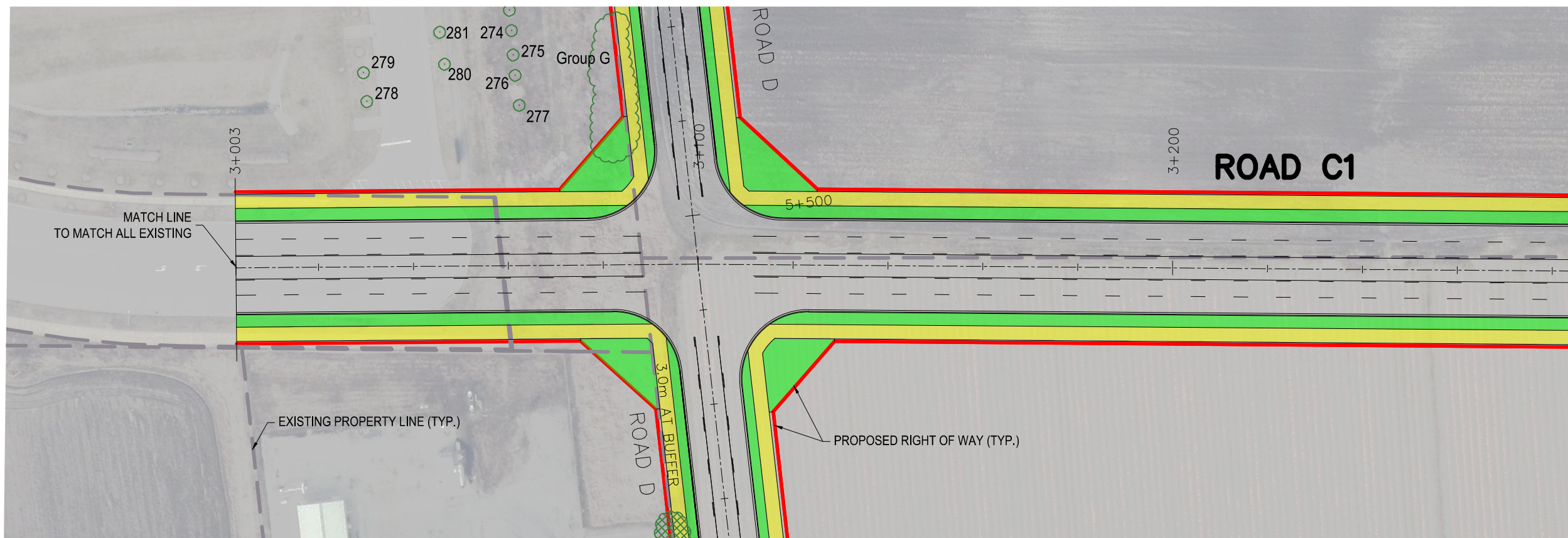
LEGEND

- EXISTING PROPERTY LINE
- PROPOSED RIGHT OF WAY
- 3.0m ACTIVE TRANSPORTATION (AT) BUFFER
- EXISTING BUCKTHORN AND CRABAPPLE
- EXISTING CRABAPPLE
- EXISTING BUCKTHORN
- EXISTING TREES TO BE RETAINED
- EXISTING TREES TO BE REMOVED

PLATE

TI-2

JULY 2019



STA 3+285

SEE DRAWING TI-4

MATCH LINE

MATCH LINE
TO MATCH ALL EXISTING

EXISTING PROPERTY LINE (TYP.)

PROPOSED RIGHT OF WAY (TYP.)

ROAD D

ROAD C1

ROAD D

Group G

279
278
281
280
275
276
277

3+100

3+200

5+500

3.0m AT BUFFER

TREE INVENTORY **ROAD C1 - FROM STA. 3+003 TO STA. 3+285 AND** **ROAD B - FROM STA. 0+000 TO STA 0+080**

THE REGIONAL MUNICIPALITY OF YORK
 MARKHAM 404 COLLECTORS EA
 FROM SOUTH OF ROAD D TO 19TH AVENUE

LEGEND

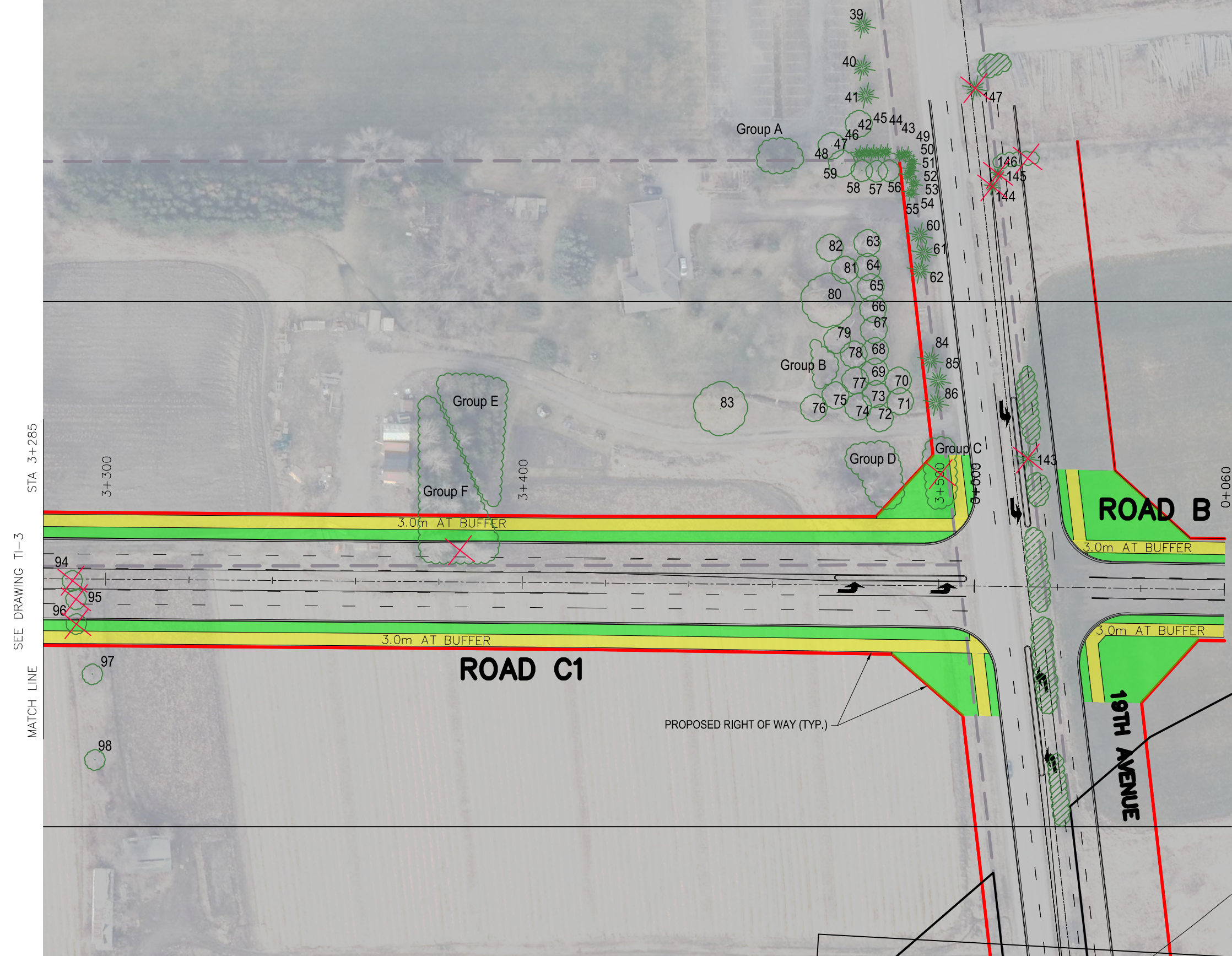
- EXISTING PROPERTY LINE
- PROPOSED RIGHT OF WAY
- 3.0m ACTIVE TRANSPORTATION (AT) BUFFER
- EXISTING BUCKTHORN AND CRABAPPLE
- EXISTING CRABAPPLE
- EXISTING BUCKTHORN
- EXISTING TREES TO BE RETAINED
- EXISTING TREES TO BE REMOVED

PLATE
TI-3
 JULY 2019

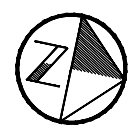


T: 289-289-0267
 400-3027 Harvester Rd, Burlington ON L7N 3G7 CANADA

SCALE
 10 0 20m
 1:1000



STA 3+285
SEE DRAWING TI-3
MATCH LINE

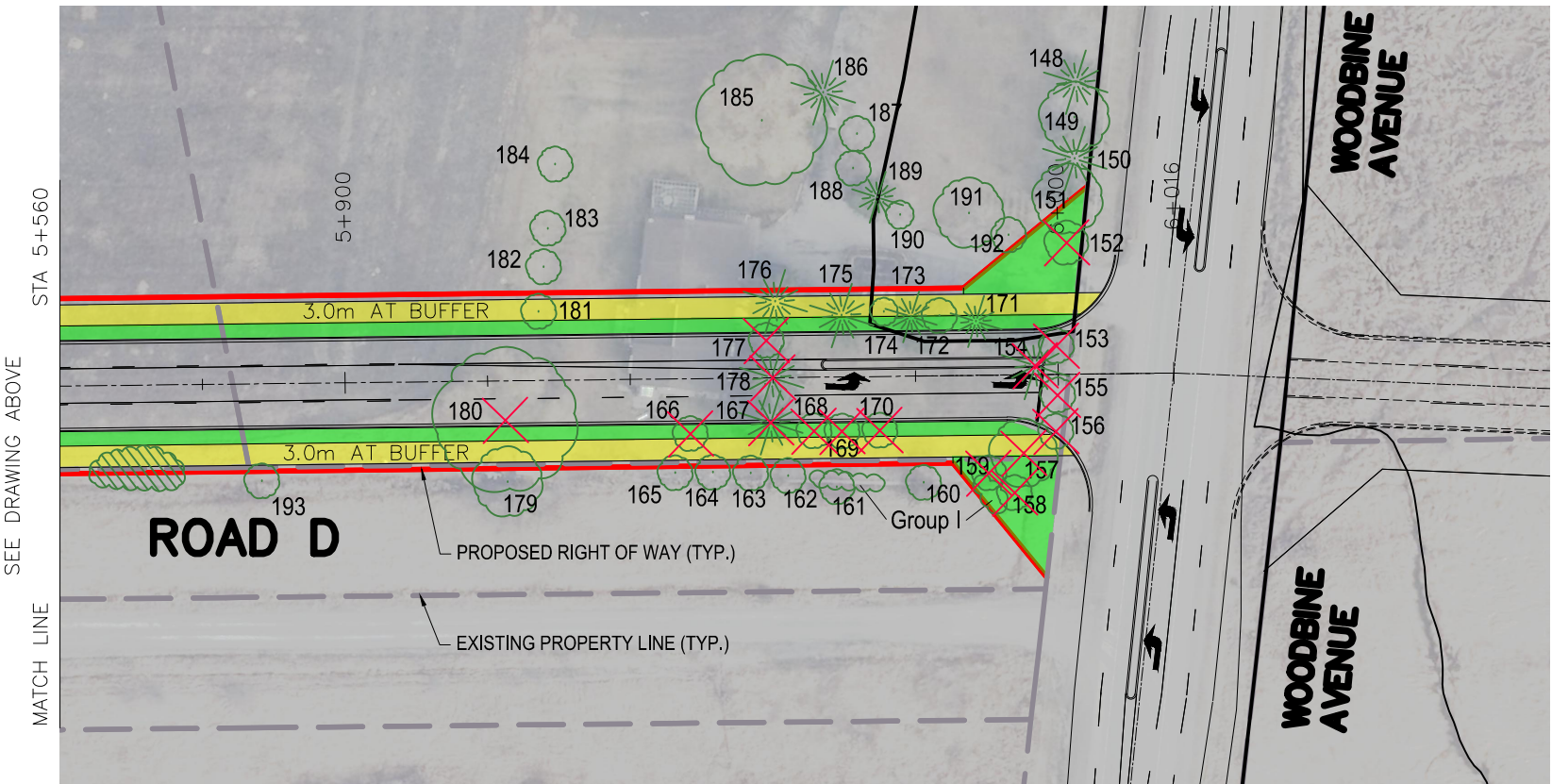
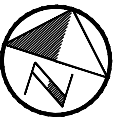
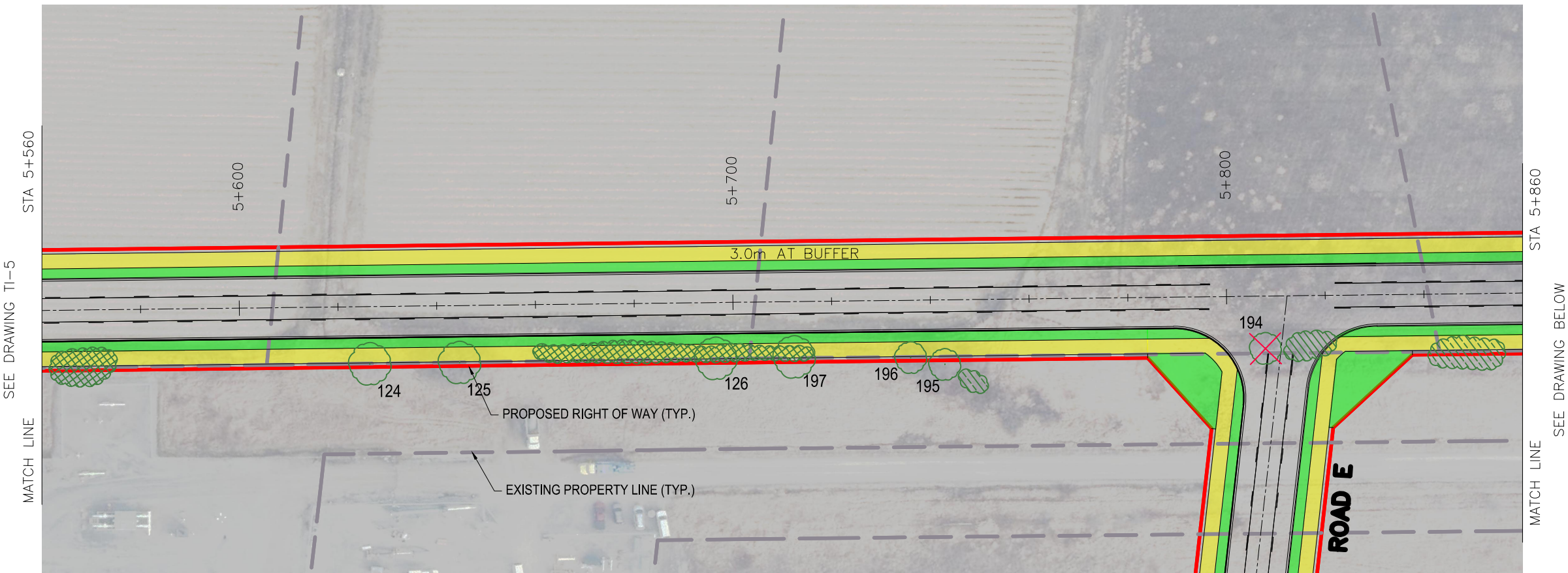




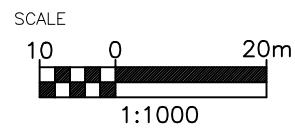
SEE DRAWING TI-6

MATCH LINE





T: 289-288-0267
400-3027 Harvester Rd, Burlington ON L7N 3G7 CANADA



MARKHAM **TREE INVENTORY** **ROAD D – FROM STA. 5+560 TO STA. 6+016**

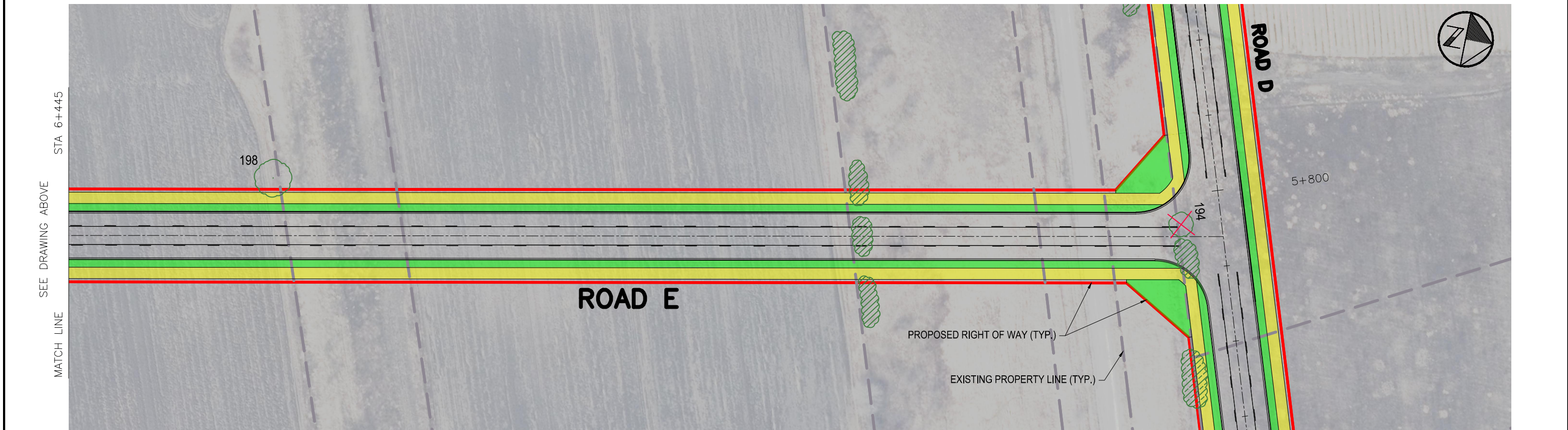
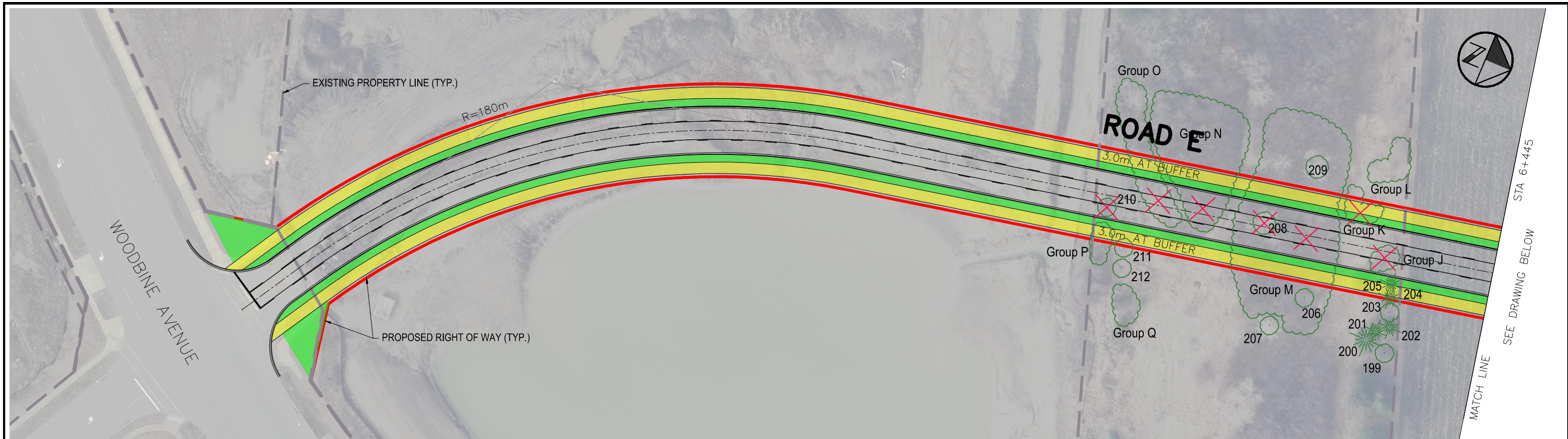
THE REGIONAL MUNICIPALITY OF YORK
MARKHAM 404 COLLECTORS EA
FROM WEST OF ROAD C1 TO WOODBINE AVENUE

LEGEND

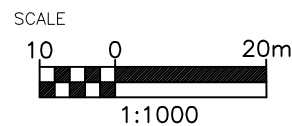
- EXISTING PROPERTY LINE
- PROPOSED RIGHT OF WAY
- 3.0m ACTIVE TRANSPORTATION (AT) BUFFER
- EXISTING BUCKTHORN AND CRABAPPLE
- EXISTING CRABAPPLE
- EXISTING BUCKTHORN
- EXISTING TREES TO BE RETAINED
- EXISTING TREES TO BE REMOVED

PLATE
TI-6

JULY 2019



T: 905-268-0267
400-3027 Harvester Rd, Burlington ON L7N 3G7 CANADA



TREE INVENTORY

ROAD E1 - FROM STA. 6+100 TO STA. 6+750

THE REGIONAL MUNICIPALITY OF YORK
MARKHAM 404 COLLECTORS EA
FROM WOODBINE AVENUE TO ROAD D

LEGEND

- EXISTING PROPERTY LINE
- PROPOSED RIGHT OF WAY
- 3.0m ACTIVE TRANSPORTATION (AT) BUFFER
- EXISTING BUCKTHORN AND CRABAPPLE

- EXISTING CRABAPPLE
- EXISTING BUCKTHORN
- EXISTING TREES TO BE RETAINED
- EXISTING TREES TO BE REMOVED

PLATE

TI-7

JULY 2019

Tree No.	Common name	Scientific name	DBH (cm)	Overall Condition (D), (P), (F), (G), or (E)	Tree Ownership (C)ity / (P)ivate	Minimum TPZ (m)	Tree Impacts (I)njure / (R)emove	Comments	Tree Groupings
(2) 2743 19th Avenue, Fletcher's Fields Ltd.									
1	Spruce	Picea sp.	20-30	F	P	2.4			Group A 13 Spruce, <i>Picea sp.</i> 6 stems - 10-20cm DBH 7 stems - 20-30cm DBH
2	Spruce	Picea sp.	20-30	F	P	2.4			
3	Spruce	Picea sp.	20-30	F	P	2.4			
4	Spruce	Picea sp.	20-30	F	P	2.4			
5	Spruce	Picea sp.	20-30	F	P	2.4			
6	Ash	Fraxinus sp.	30-40	D	P	2.4		Multi-stem, Signs of EAB	
7	Spruce	Picea sp.	20-30	F	P	2.4			
8	Spruce	Picea sp.	20-30	F	P	2.4			
9	Spruce	Picea sp.	20-30	F	P	2.4			
10	Spruce	Picea sp.	20-30	F	P	2.4			
11	Spruce	Picea sp.	20-30	F	P	2.4			
12	Ash	Fraxinus sp.	20-30	D	P	2.4		Signs of EAB	
13	Maple	Acer sp.	84	F/G	P	5.4		Tag 0892	
14	Ash	Fraxinus sp.	60-70	D	P	4.2		Signs of EAB	
15	Maple	Acer sp.	10-20	F/G	P	2.4		2 stem	
16	Scots Pine	Pinus sylvestris	29	F	P	2.4		Tag 0890	
17	Scots Pine	Pinus sylvestris	39	F	P	2.4		Tag 0889	
18	Dead Deciduous	Dead Deciduous	69	D	P	4.2			
19	Crab Apple	Malus sp.	20-30	F	P	2.4	I	Multi-stem	
20	Willow	Salix sp.	65	F	P	4.2	I	Tag 0886, Moderate to significant deadwood in canopy	
21	Willow	Salix sp.	62	F	P	4.2	I	Tag 0885, Moderate to significant deadwood in canopy	
22	Willow	Salix sp.	40-50	F	P	3.0		Multi-stem, Moderate to significant deadwood in canopy	
23	Willow	Salix sp.	40-50	F	P	3.0		Multi-stem, Moderate to significant deadwood in canopy	
24	Willow	Salix sp.	40-50	F	P	3.0		Multi-stem, Moderate to significant deadwood in canopy	
25	Willow	Salix sp.	40-50	F	P	3.0		Multi-stem, Moderate to significant deadwood in canopy	
26	Willow	Salix sp.	40-50	F	P	3.0		Multi-stem	
27	Dead Deciduous	Dead Deciduous	20-30	D	P	2.4			
28	Elm	Ulmus sp.	49	P	P	3.0		Tag 0878	
29	Elm	Ulmus sp.	38	F/P	P	2.4		Tag 0877, Moderate deadwood in canopy	
30	Willow	Salix sp.	20-30	F	P	2.4		Tag 0876, Multi-stem	
31	Crab Apple	Malus sp.	30-40	F/P	P	2.4	I		
32	Willow	Salix sp.	10-20	F	P	2.4	R	Clump	
33	Ash	Fraxinus sp.	20	D	P	2.4	R	Signs of EAB	
34	Ash	Fraxinus sp.	30	D	P	2.4		Signs of EAB	
35	Maple	Acer sp.	64	F	P	4.2		Co-dominant stems	
36	Ash	Fraxinus sp.	37	D	P	2.4		Signs of EAB	
37	Ash	Fraxinus sp.	10	D	P	1.2		Signs of EAB	
38	Ash	Fraxinus sp.	30	D	P	2.4		Signs of EAB	
39	Spruce	Picea sp.	20	F	P	2.4			
40	Spruce	Picea sp.	22	F	P	2.4			
41	Spruce	Picea sp.	15,21	F	P	2.4		Co-dominant stems	
42	Ash	Fraxinus sp.	12,10	F/P	P	1.8		2 stem	
43	Spruce	Picea sp.	20-30	F	P	2.4			
44	Spruce	Picea sp.	20-30	F	P	2.4			
45	Spruce	Picea sp.	20-30	F	P	2.4			
46	Spruce	Picea sp.	20-30	F	P	2.4			
47	Spruce	Picea sp.	20-30	F	P	2.4			
48	Schwedler Maple	Acer platanoides 'Schwedleri'	24	F	P	2.4			
49	Spruce	Picea sp.	10-20	F	C	2.4			
(4) 2787 19th Avenue, Colangelo									
50	Spruce	Picea sp.	10-20	F	C	2.4			Group B Manitoba Maple, <i>Acer negundo</i> Norway Maple, <i>Acer platanoides</i>
51	Spruce	Picea sp.	10-20	F	C	2.4			
52	Spruce	Picea sp.	10-20	F	P	2.4			
53	Spruce	Picea sp.	20-30	F	P	2.4			

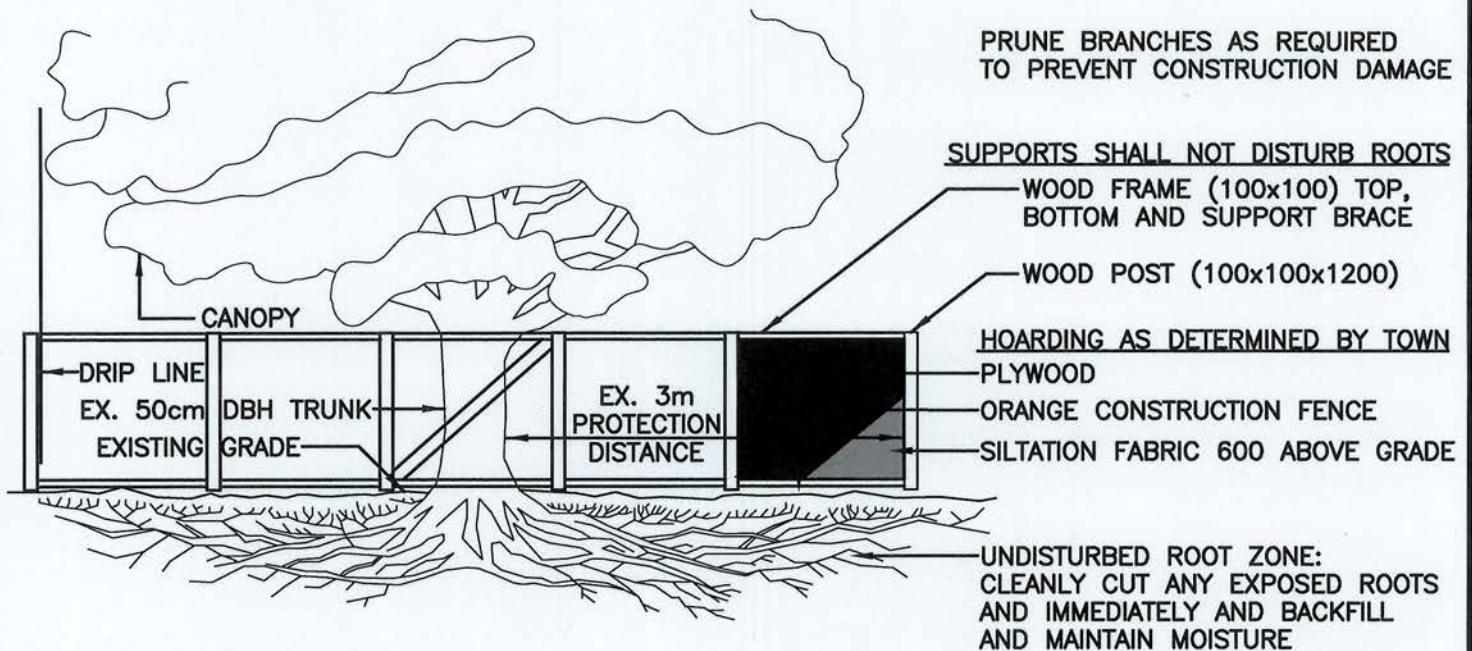
Tree No.	Common name	Scientific name	DBH (cm)	Overall Condition (D), (P), (F), (G), or (E)	Tree Ownership (C)ity / (P)ivate	Minimum TPZ (m)	Tree Impacts (I)njure / (R)emove	Comments	Tree Groupings
54	Spruce	Picea sp.	20-30	F	C	2.4			Ash, <i>Fraxinus sp.</i> (Dead)
55	Spruce	Picea sp.	20-30	F	P	2.4			
56	Schwedler Maple	Acer platanoides 'Schwedleri'	21	F	P	2.4			Group C - Remove
57	Schwedler Maple	Acer platanoides 'Schwedleri'	13	F	P	1.8			10 Spruce, <i>Picea sp.</i>
58	Schwedler Maple	Acer platanoides 'Schwedleri'	22	F	P	2.4			5 stems - 10-20cm DBH
59	Schwedler Maple	Acer platanoides 'Schwedleri'	20	F	P	2.4			4 stems - 20-30cm DBH
60	Spruce	Picea sp.	40-50	F	P	3.0			1 stem - 30-40cm DBH
61	Spruce	Picea sp.	20-30	F	C	2.4			
62	Spruce	Picea sp.	20-30	F	P	2.4			Group D
63	Birch	Betula sp.	30-40	F	P	2.4		Multi-stem	Manitoba Maple, <i>Acer negundo</i> - 20-30cm DBH
64	Birch	Betula sp.	30-40	F	P	2.4		Multi-stem	Birch, <i>Betula sp.</i> - 10-20cm DBH
65	Birch	Betula sp.	30-40	F	P	2.4		Multi-stem	Ash, <i>Fraxinus sp.</i> - 0-10cm DBH
66	Birch	Betula sp.	30-40	F	P	2.4		Multi-stem	Spruce, <i>Picea sp.</i> - 0-10cm DBH
67	Birch	Betula sp.	30-40	F	P	2.4		Multi-stem	
68	Birch	Betula sp.	30-40	F	P	2.4		Multi-stem	Group E
69	Birch	Betula sp.	30-40	F	P	2.4		Multi-stem	90% Cedar, <i>Thuja occidentalis</i>
70	Birch	Betula sp.	30-40	F	P	2.4		Multi-stem	10% Manitoba Maple, <i>Acer negundo</i>
71	Birch	Betula sp.	30-40	F	P	2.4		Multi-stem	
72	Birch	Betula sp.	30-40	F	P	2.4		Multi-stem	Group F - Remove
73	Birch	Betula sp.	30-40	F	P	2.4		Multi-stem	80% Poplar, <i>Populus sp.</i>
74	Birch	Betula sp.	30-40	F	P	2.4		Multi-stem	- 10% - 0-10cm DBH
75	Birch	Betula sp.	30-40	F	P	2.4		Multi-stem	- 75% - 10-20cm DBH
76	Manitoba Maple	Acer negundo	30-40	F	P	2.4			- 15% - 20-30cm DBH
77	Birch	Betula sp.	30-40	F	P	2.4		Multi-stem	10% Manitoba Maple, <i>Acer negundo</i>
78	Birch	Betula sp.	30-40	F	P	2.4		Multi-stem	10% Cedar, <i>Thuja occidentalis</i>
79	Birch	Betula sp.	30-40	F	P	2.4		Multi-stem	
80	Willow	Salix sp.	80-90	F/P	P	5.4		Signs of rot, significant deadwood in canopy	Group G
81	Birch	Betula sp.	30-40	F	P	2.4		Multi-stem	90% Basswood, <i>Tilia americana</i> ± 10 stems
82	Ash	Fraxinus sp.	20-30	D	P	2.4		Signs of EAB	8 - 10-20cm DBH
83	Willow	Salix sp.	40-50	F	P	3.0			2 - 20-30cm DBH
84	Spruce	Picea sp.	30-40	F	P	2.4			10% Manitoba Maple, <i>Acer negundo</i> ± 3 stems
85	Spruce	Picea sp.	30-40	F	C	2.4			3 - 10-20cm DBH
86	Spruce	Picea sp.	20-30	F	P	2.4		Co-dominant stems	
87	Spruce	Picea sp.	10-20	F	P	2.4			Group H
88	Spruce	Picea sp.	10-20	F	P	2.4			30% Manitoba Maple, <i>Acer negundo</i>
89	Spruce	Picea sp.	10-20	F	P	2.4			30% Ash, <i>Fraxinus sp.</i> (Dead)
90	Spruce	Picea sp.	10-20	F	P	2.4			20% Buckthorn, <i>Rhamnus sp.</i>
91	Spruce	Picea sp.	10-20	F	P	2.4			10% Silver Maple, <i>Acer saccharinum</i>
92	Spruce	Picea sp.	10-20	F	P	2.4			10% Ash, <i>Fraxinus sp.</i>
93	Spruce	Picea sp.	10-20	F	P	2.4			
(5) 2801 19th Avenue, City of Markham									
94	Manitoba Maple	Acer negundo	20-30	F	P	2.4	R		
95	Crab Apple	Malus sp.	20-30	F	P	2.4	R		
96	Manitoba Maple	Acer negundo	30-40	P	P	2.4	R	Signs of rot, significant deadwood, one major stem dead	
97	Elm	Ulmus sp.	20-30	F	P	2.4		Co-dominant stems	
98	Maple	Acer sp.	20-30	F	P	2.4			
(6) 2825 19th Avenue, Bavaro									
99	Spruce	Picea sp.	28	F	P	2.4			
100	Spruce	Picea sp.	24	F	P	2.4			
101	Spruce	Picea sp.	16	F	P	1.8			
102	Maple	Acer sp.	14	F	P	1.8			
103	Maple	Acer sp.	5	F	P	1.2			
104	Manitoba Maple	Acer negundo	15	F/P	P	1.8		Girdled by rope	
105	Manitoba Maple	Acer negundo	30	F	P	2.4			
106	Schwedler Maple	Acer platanoides 'Schwedleri'	30	F	P	2.4			

Tree No.	Common name	Scientific name	DBH (cm)	Overall Condition (D), (P), (F), (G), or (E)	Tree Ownership (C)ity / (P)ivate	Minimum TPZ (m)	Tree Impacts (I)njure / (R)emove	Comments	Tree Groupings
107	Spruce	Picea sp.	34	F	P	2.4			
108	Spruce	Picea sp.	43	F	P	3.0			
109	Cedar	Thuja occidentalis	32	F	P	2.4			
110	Spruce	Picea sp.	20	F	P	2.4			
111	Spruce	Picea sp.	15	F	P	1.8			
112	Spruce	Picea sp.	12	F	P	1.8			
113	Spruce	Picea sp.	22	F	P	2.4			
114	Spruce	Picea sp.	23	F	P	2.4			
115	Common Hackberry	Celtis occidentalis	5	F	C	1.2			
116	Maple	Acer sp.	17	F	P	1.8		Girdled by rope	
117	Maple	Acer sp.	17	F	P	1.8			
118	Maple	Acer sp.	27	F	P	2.4			
119	Manitoba Maple	Acer negundo	14	F	P	1.8			
120	Willow	Salix sp.	101	F	P	6.1		Signs of rot	
121	Willow	Salix sp.	79	F	P	4.8			
122	Willow	Salix sp.	113	F	P	6.8			
123	Willow	Salix sp.	108	P	P	6.5		Significant signs of rot	
124	Basswood	Tilia americana	30-40	F	P	2.4		Multi-stem	
125	Basswood	Tilia americana	30-40	F	P	2.4		Multi-stem	
126	Basswood	Tilia americana	30-40	P	P	2.4		Multi-stem, significant deadwood	
(7) 2931 19th Avenue, De Filippis									
127	Poplar	Populus sp.	25-30	F	P	2.4			
128	Spruce	Picea sp.	±30	F	C	2.4			
129	Manitoba Maple	Acer negundo	±30	F	C	2.4			
130	Manitoba Maple	Acer negundo	±30	F	C	2.4			
131	Manitoba Maple	Acer negundo	±40	F	C	2.4			
132	Manitoba Maple	Acer negundo	±40	F	C	2.4			
133	Manitoba Maple	Acer negundo	±40	F	C	2.4		No trespassing sign attached	
134	Manitoba Maple	Acer negundo	±40	F	C	2.4			
135	Manitoba Maple	Acer negundo	±20	F/P	C	2.4			
136	Spruce	Picea sp.	±20	F/P	P	2.4			
137	Spruce	Picea sp.	±20	F	P	2.4			
(8) 2936 19th Avenue, Sadetsky									
138	Elm	Ulmus sp.	±50	P	P	3.0	R	Major limb has fallen, significant deadwood	
139	Scots Pine	Pinus sylvestris	±50	F	P	3.0	R		
(3) 2780 19th Avenue, City of Markham									
140	Crab Apple	Malus sp.	±20	F	P	2.4	R		
141	Crab Apple	Malus sp.	30-40	F	P	2.4	R	Multi-stem	
142	Elm	Ulmus sp.	±30	F	P	2.4	R	Co-dominant stems, moderate deadwood	
143	Juniper	Juniperus sp.	±15	F	C	1.8	R		
144	Cedar	Thuja occidentalis	5-10	F	C	1.2	R		
145	Cedar	Thuja occidentalis	5-10	F	P	1.2	R		
146	Elm	Ulmus sp.	10-20	F	P	2.4	R	Remnant hedgerow	
147	Juniper	Juniperus sp.	±20	F	C	2.4	R		
(27) 11358 Woodbine Avenue, De Filippis									
148	Spruce	Picea sp.	38	F	P	2.4			Group I Manitoba Maple, <i>Acer negundo</i> Buckthorn, <i>Rahmnus sp.</i> Ash, <i>Fraxinus sp.</i> Mulberry, <i>Morus sp.</i>
149	Manitoba Maple	Acer negundo	49	F	P	3.0			
150	Spruce	Picea sp.	41	F	P	3.0			
151	Manitoba Maple	Acer negundo	36	F/P	P	2.4		Significant deadwood	
152	Manitoba Maple	Acer negundo	35	P	P	2.4	R	Topped, significant deadwood	
153	Manitoba Maple	Acer negundo	24,19	F	P	2.4	R	Co-dominant stems	
154	Spruce	Picea sp.	38	F	P	2.4	R		

Tree No.	Common name	Scientific name	DBH (cm)	Overall Condition (D), (P), (F), (G), or (E)	Tree Ownership (C)ity / (P)ivate	Minimum TPZ (m)	Tree Impacts (I)njure / (R)emove	Comments	Tree Groupings
155	Manitoba Maple	Acer negundo	28	F	P	2.4	R		
156	Manitoba Maple	Acer negundo	16	F	P	1.8	R		
157	Oak	Quercus sp.	93	F	P	6.0	R		
158	Oak	Quercus sp.	20	F	P	2.4	R		
159	Manitoba Maple	Acer negundo	15	F	P	1.8	R		
160	Manitoba Maple	Acer negundo	49	F/P	P	3.0		Signs of rot, damage at base, significant deadwood	
161	Ash	Fraxinus sp.	15	F	P	1.8			
162	Russian Olive	Elaeagnus angustifolia	10	F	P	1.2			
163	Crab Apple	Malus sp.	20	F	P	2.4			
164	Black Walnut	Juglans nigra	23	F	P	2.4			
165	Dead Deciduous	Dead Deciduous	±45	D	P	3.0			
166	Mulberry	Morus sp.	10-15	F	P	1.8	R	Multi-stem	
167	Spruce	Picea sp.	56	F	P	3.6	R	Root girdling	
168	Crab Apple	Malus sp.	10-15	F	P	1.8	R		
169	Crab Apple	Malus sp.	10-15	F	P	1.8	R		
170	Crab Apple	Malus sp.	10-15	F	P	1.8	R		
171	Spruce	Picea sp.	37	F	P	2.4	I		
172	Manitoba Maple	Acer negundo	41	F	P	3.0			
173	Spruce	Picea sp.	45	F	P	3.0	I		
174	Horse Chestnut	Aesculus hippocastanum	9	F	P	1.2			
175	Spruce	Picea sp.	49	F	P	3.0	I		
176	Spruce	Picea sp.	51	F	P	3.6			
177	Magnolia	Magnolia sp.	10	F	P	1.2	R	Multi-stem	
178	Spruce	Picea sp.	58	F	P	3.6	R	Exposed roots	
179	Willow	Salix sp.	40-50	F/P	P	3.0		Multi-stem, significant deadwood	
180	Willow	Salix sp.	163	F/P	P	9.8	R	Typical old growth Willow, signs or rot, significant deadwood	
181	Pear	Pyrus sp.	10-15	F	P	1.8			
182	Pear	Pyrus sp.	10-15	F	P	1.8			
183	Pear	Pyrus sp.	10-15	F	P	1.8			
184	Pear	Pyrus sp.	10-15	F	P	1.8			
185	Willow	Salix sp.	125	F/P	P	7.5		Typical old growth Willow, signs of rot, significant deadwood	
186	Spruce	Picea sp.	26	F	P	2.4			
187	Manitoba Maple	Acer negundo	47	F/P	P	3.0		Significant deadwood in canopy	
188	Manitoba Maple	Acer negundo	38	F	P	2.4			
189	Spruce	Picea sp.	40	F	P	2.4			
190	Manitoba Maple	Acer negundo	46	P	P	3.0		Trunk cavity, significant deadwood in canopy	
191	Manitoba Maple	Acer negundo	43	F	P	3.0			
192	Manitoba Maple	Acer negundo	22	F	P	2.4			
193	Ash	Fraxinus sp.	5-10	F	P	1.2		Multi-stem	
194	Dead Deciduous	Dead Deciduous	30-40	D	P	2.4	R		
195	Dead Deciduous	Dead Deciduous	30-40	D	P	2.4			
196	Crab Apple	Malus sp.	15	F/P	P	1.8		Vine growing throughout	
197	Basswood	Tilia americana	20-30	F/P	P	2.4		Multi-stem, moderate deadwood in canopy	
(23) West of Woodbine Avenue and East of Honda Boulevard (Part of Lot 29 Concession 3), Gallo									
198	White Poplar	Populus alba	10-15	F	P	1.8		Multi-stem	
(22) West of Woodbine Avenue and East of Honda Boulevard (Roll No: 1936-020-1564-4200-0000), 1099490 Ontario Inc.									
199	Linden	Tilia sp.	10-15	F	P	1.8		Clump	
200	White Pine	Pinus strobus	±30	F	P	2.4			Group J - Remove
201	White Pine	Pinus strobus	±30	F/P	P	2.4			5 Linden, Tilia sp.
202	Spruce	Picea sp.	±30	F	P	2.4			15-25cm DBH
203	Buckthorn	Rhamnus sp.	0-5	F	P	1.2		Multi-stem	(multi-stem)
204	Spruce	Picea sp.	±30	F	P	2.4			
205	Spruce	Picea sp.	15-20	F	P	2.4	I		Group K - Remove
206	Silver Maple	Acer saccharinum	±20	F/G	P	2.4			Poplar, Populus sp.
207	Poplar	Populus sp.	30-40	F/G	P	2.4			Maple, Acer sp.

Tree No.	Common name	Scientific name	DBH (cm)	Overall Condition (D), (P), (F), (G), or (E)	Tree Ownership (C)ity / (P)ivate	Minimum TPZ (m)	Tree Impacts (I)njure / (R)emove	Comments	Tree Groupings
208	Poplar	Populus sp.	39	F/P	P	2.4	R		Buckthorn, <i>Rhamnus sp.</i> (all smaller stuff)
209	Poplar	Populus sp.	30-40	F/G	P	2.4			
210	Linden	Tilia sp.	±40	F	P	2.4	R		
211	Elm	Ulmus sp.	15	F	P	1.8			Group L
212	Elm	Ulmus sp.	15	F	P	1.8			5 Linden, <i>Tilia sp.</i> 15-25cm DBH (multi-stem)
(24) 180 Honda Boulevard, Honda Canada Inc.									
213	Pear	Pyrus sp.	0-5	P	P	1.2			Group M - Remove
214	Pear	Pyrus sp.	0-5	P	P	1.2			90% Linden, <i>Tilia sp.</i>
215	Pear	Pyrus sp.	0-5	P	P	1.2			5-15cm DBH
216	Birch	Betula sp.	5-10	F/P	P	1.2			5% Poplar, <i>Populus sp.</i>
217	Maple	Acer sp.	10-20	F	P	2.4			10-20cm DBH
218	Spruce	Picea sp.	10-20	F/P	P	2.4			5% Buckthorn, <i>Rhamnus sp.</i>
219	Spruce	Picea sp.	0-10	F	P	1.2			0-5cm DBH
220	Spruce	Picea sp.	0-10	F	P	1.2			
221	Spruce	Picea sp.	0-10	F	P	1.2			Group N - Remove
222	Spruce	Picea sp.	0-10	F	P	1.2			90% Linden, <i>Tilia sp.</i>
223	Spruce	Picea sp.	0-10	F	P	1.2			5-15cm DBH
224	White Pine	Pinus strobus	7	F	P	1.2			5% Poplar, <i>Populus sp.</i>
225	White Pine	Pinus strobus	9	F	P	1.2			10-20cm DBH
226	White Pine	Pinus strobus	13	F	P	1.8			5% Buckthorn, <i>Rhamnus sp.</i>
227	Amur Maple	Acer ginnala	0-5	F	P	1.2		Multi-stem	0-5cm DBH
228	White Pine	Pinus strobus	10	F	P	1.2			
229	Serviceberry	Amelanchier sp.	0-5	F	P	1.2			Group Q - Remove
230	Amur Maple	Acer ginnala	0-5	F	P	1.2		Multi-stem	Poplar, <i>Populus sp.</i>
231	Larch	Larix sp.	5-10	F	P	1.2			30-40cm DBH
232	Larch	Larix sp.	5-10	F	P	1.2			(leaning heavily, Dead/Poor condition)
233	Larch	Larix sp.	5-10	F	P	1.2			
234	Larch	Larix sp.	5-10	F	P	1.2			Group P - Remove
235	Amur Maple	Acer ginnala	0-5	F	P	1.2		Multi-stem	Linden, <i>Tilia sp.</i>
236	Amur Maple	Acer ginnala	0-5	F	P	1.2		Multi-stem	20-30cm DBH
237	Amur Maple	Acer ginnala	0-5	F	P	1.2		Multi-stem	Elm, <i>Ulmus sp.</i>
238	White Pine	Pinus strobus	5	F	P	1.2			20-30cm DBH
239	White Pine	Pinus strobus	7	F	P	1.2			
240	Larch	Larix sp.	0-10	F	P	1.2			Group Q
241	Maple	Acer sp.	10-20	F	P	2.4			5 White Pine, <i>Pinus strobus</i>
242	Larch	Larix sp.	0-10	F	P	1.2			15-25cm DBH
243	Amur Maple	Acer ginnala	0-5	F	P	1.2		Multi-stem	
244	Maple	Acer sp.	10-20	F	P	2.4			
245	Amur Maple	Acer ginnala	0-5	F	P	1.2		Multi-stem	
246	Amur Maple	Acer ginnala	0-5	F	P	1.2		Multi-stem	
247	Amur Maple	Acer ginnala	0-5	F	P	1.2		Multi-stem	
248	Amur Maple	Acer ginnala	0-5	F	P	1.2		Multi-stem	
249	Amur Maple	Acer ginnala	0-5	F	P	1.2		Multi-stem	
250	Amur Maple	Acer ginnala	0-5	F	P	1.2		Multi-stem	
251	Amur Maple	Acer ginnala	0-5	F	P	1.2		Multi-stem	
252	Amur Maple	Acer ginnala	0-5	F	P	1.2		Multi-stem	
253	Larch	Larix sp.	0-5	F	P	1.2			
254	Larch	Larix sp.	5-10	F	P	1.2			
255	Pear	Pyrus sp.	10	F	P	1.2			
256	Pear	Pyrus sp.	10	F	P	1.2			
257	Amur Maple	Acer ginnala	10	F	P	1.2		Multi-stem	
258	White Pine	Pinus strobus	13	F	P	1.8			
259	Amur Maple	Acer ginnala	10	F	P	1.2		Multi-stem	
260	White Pine	Pinus strobus	12	F	P	1.8			
261	Amur Maple	Acer ginnala	11	F	P	1.8		Multi-stem	
262	Maple	Acer sp.	0-10	F	P	1.2			

Tree No.	Common name	Scientific name	DBH (cm)	Overall Condition (D), (P), (F), (G), or (E)	Tree Ownership (C)ity / (P)ivate	Minimum TPZ (m)	Tree Impacts (I)njure / (R)emove	Comments	Tree Groupings
263	Larch	Larix sp.	0-5	F	P	1.2			
264	Oak	Quercus sp.	5-10	F	P	1.2			
265	Oak	Quercus sp.	5-10	F	P	1.2			
266	Oak	Quercus sp.	5-10	F	P	1.2			
267	Spruce	Picea sp.	5-10	F	P	1.2			
268	Amur Maple	Acer ginnala	0-5	F	P	1.2		Multi-stem	
269	Amur Maple	Acer ginnala	0-5	F	P	1.2		Multi-stem	
270	Amur Maple	Acer ginnala	0-5	F	P	1.2		Multi-stem	
271	Amur Maple	Acer ginnala	0-5	F	P	1.2		Multi-stem	
272	Amur Maple	Acer ginnala	0-5	F	P	1.2		Multi-stem	
273	Hedge Maple	Acer campestre	12	F	P	1.8			
274	Hedge Maple	Acer campestre	12	F	P	1.8			
275	Pear	Pyrus sp.	7	F	P	1.2			
276	Pear	Pyrus sp.	7	F	P	1.2			
277	Pear	Pyrus sp.	7	F	P	1.2			
278	Maple	Acer sp.	10	F/P	P	1.2		Showing signs of stress	
279	Maple	Acer sp.	12	F	P	1.8			
280	Maple	Acer sp.	15	F/G	P	1.8			
281	Maple	Acer sp.	13	G	P	1.8			
282	Maple	Acer sp.	12	G	P	1.8			
283	Maple	Acer sp.	10	F/G	P	1.2			
284	Maple	Acer sp.	12	G	P	1.8			
285	Maple	Acer sp.	11	F	P	1.8			
286	Maple	Acer sp.	10	F	P	1.2			
287	Maple	Acer sp.	10	F	P	1.2			
288	Maple	Acer sp.	11	F/G	P	1.8			
289	Maple	Acer sp.	12	F	P	1.8			
290	Maple	Acer sp.	11	F	P	1.8			
291	Maple	Acer sp.	10	F	P	1.2			
292	Maple	Acer sp.	12	F	P	1.8			
293	Maple	Acer sp.	10	F	P	1.2			
294	Maple	Acer sp.	11	F	P	1.8			
295	Maple	Acer sp.	11	F	P	1.8			
296	Maple	Acer sp.	10	F	P	1.2			
297	Maple	Acer sp.	11	F	P	1.8			
298	Maple	Acer sp.	10	F/G	P	1.2			
299	Maple	Acer sp.	10	F/G	P	1.2			
300	Maple	Acer sp.	9	F	P	1.2			
301	Maple	Acer sp.	10	F/G	P	1.2			
302	Maple	Acer sp.	8	F	P	1.2		Main leader cut	
303	Maple	Acer sp.	10	F	P	1.2			
304	Maple	Acer sp.	10	F	P	1.2			
305	Maple	Acer sp.	11	F/G	P	1.8			
306	Maple	Acer sp.	10	F/G	P	1.2			
307	Maple	Acer sp.	10	F/G	P	1.2			
308	Maple	Acer sp.	10	F	P	1.2			
309	Maple	Acer sp.	12	F/G	P	1.8			



MINIMUM TREE PROTECTION DISTANCE FROM TRUNK:

< 10cm DBH	1.2m
10-29cm DBH	1.8m
30-40cm DBH	2.4m
41-50cm DBH	3.0m
51-60cm DBH	3.6m
61-70cm DBH	4.2m
71-80cm DBH	4.8m
81-90cm DBH	5.4m
91-100cm DBH	6.0m
> 100cm DBH	6cm/1cmØ

(DIAMETER AT BREAST HEIGHT) DBH = TRUNK DIAMETER AT 1.4m HEIGHT

40cmx60cm SIGN MOUNTED ON ALL SIDES OF BARRIER

TREE PROTECTION NOTES:

1. ALL TREE PROTECTION BARRIERS SHALL BE IN PLACE AND APPROVED BY THE TOWN PRIOR TO CONSTRUCTION ACCESS.
2. ALL SUPPORTS AND STAKES SHALL BE OUTSIDE THE TREE PROTECTION ZONE AND SHALL MINIMIZE ROOT DAMAGE.
3. TREE PROTECTION BARRIERS SHALL REMAIN IN PLACE AND IN GOOD CONDITION UNTIL ALL CONSTRUCTION IS COMPLETE AND APPROVED BY THE TOWN.
4. ALL ARBORICULTURE WORK SUCH AS PRUNING OF BRANCHES AND ROOTS, SHALL BE DONE BY A QUALIFIED TREE WORKER CERTIFIED WITH THE INTERNATIONAL SOCIETY OF ARBORICULTURE APPROVED BY THE TOWN.

ALL DIMENSIONS ARE IN MILLIMETRES UNLESS OTHERWISE SHOWN



TREE PROTECTION ZONE

NO WORK IS PERMITTED WITHIN THE TREE PROTECTION ZONE INCLUDING GRADING, CONSTRUCTION ACCESS AND MATERIAL STORAGE.

BREACH OF TREE PROTECTION ZONE IS SUBJECT TO A FINE OF \$_____

CONTACT TOWN OF MARKHAM FOR MORE INFORMATION: 905-477-5530



ENGINEERING DEPARTMENT

DRAWING NAME:

TREE PRESERVATION
DETAILS

SCALE:

NTS

REV:

0

DATE:

SEPTEMBER
2010

APPROVED BY:

[Signature]
DIRECTOR OF ENGINEERING

DWG. NO.

MP12

SUBMITTED BY CIMA CANADA INC.

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