TREE PROTECTION REPORT

LANGSTAFF ROAD ENVIRONMENTAL ASSESSMENT – WESTON ROAD TO HIGHWAY 7

REGION OF YORK

December 19, 2017
Revised: September 15, 2021

Table of Contents

Appendices

List of Drawings

1.0 Introduction

The Regional Municipality of York has retained WSP Canada Inc. to complete a Municipal Class Environmental Assessment (Class EA), Schedule 'C', for the improvements of Langstaff Road from Weston Road to Highway 7 in the City of Vaughan.

In accordance with Phase 2 of the MCEA, this report presents a detailed inventory of the trees of any size within the existing right of way of Langstaff Road and trees on adjacent lands with a crown that extends onto the right of way.

1.1 Report Update

This report has been revised to address potential impacts per the preliminary preferred alignment plans.

This report is to be read in conjunction with:

- Appendix A: Tree Preservation Tables
- Tree Protection Plans (Sheets TP-1 to TP-9)

2.0 Existing Conditions

Langstaff Road is an existing east / west arterial road from Islington Avenue to Creditstone Road, separated by the CN MacMillan rail yard between Creditstone Road and Keele Street. Langstaff Road continues from Keele Street to Highway 7. Within the study area, Langstaff Road is 4 lanes between Weston Road and Creditstone Road, and between Dufferin Street and Highway 7. Langstaff Road is 2 lanes between Keele Street and Dufferin Street. The built form varies within the study area:

- Primarily consisting of commercial, retail and industrial uses;
- Retail and commercial from Weston Road to Highway 400;
- Retail and commercial, and industrial from Highway 400 to Creditstone Road; and
- Commercial, industrial, residential and parkland from Keele Street to Highway 7.

There are several natural features within the study area, including the Don River, Black Creek, parks and a woodlot / Stormwater Management (SWM) pond. The Don River meanders generally parallel to Keele Street and changes direction to east / west south of Langstaff Road just west of Planchet Road. Black Creek meanders generally in a north / south direction crossing under Highway 400. There are three parks between Keele Street and Highway 7: Langstaff Park located on the south side of Langstaff Road between Keele Street and the GO Transit / CNR rail line, generally within the Don River floodplain; LeParc Park located on the south side, west of Comic Crescent and Crossroads Park on the north side of Langstaff between Highway 7 and Pleasant Ridge Avenue. The woodlot / SWM Pond is located at the northeast corner of Dufferin Street and Langstaff Road.

Vegetation observed within the right-of-way limits consists of planted trees within the limits of retail, commercial, industrial properties and parks that front onto Langstaff Road and naturally occurring vegetation where the Don River and Black Creek cross Langstaff Road. The composition of vegetation varies depending on location. The locations and composition are detailed in the following sections.

2.1 Weston Road to Highway 400

Vegetation between Weston Road and Highway 400 consists of a mixture of native and non-native deciduous and coniferous planted trees within wide boulevards (10 to 20m wide) that are 8 to 40cm in diameter. One-hundred and twenty (120) trees were inventoried in this area (tree numbers 1 to 50, 254 to 275, TG-1, TG-19 & TG-20). Species consistency varied between frequent to rare:
Frequent: Little Leaf Linden (*Tilia cordata*).

Occasional: White Spruce (*Picea glauca*), Colorado Spruce (*Picea pungens*), Norway Maple (*Acer platanoides*), Ivory Silk Tree (*Syringa reticulata*), Thornless Honeylocust (*Gleditsia triacanthos var. inermis*), Austrian Pine (*Pinus nigra*), Colorado Blue Spruce (*Picea pungens 'Glauca'*).

Rare: Catalpa (*Catalpa speciosa*), Bur Oak (*Quercus macrocarpa*), Kentucky Coffee Tree (*Gymnocladus dioicus*), Pin Oak (*Quercus palustris*), Black Walnut (*Juglans nigra*), Russian Olive (*Elaeagnus angustifolia*), Cherry (*Prunus spp*.), Hedge Maple (*Acer campestre*) and Silver Maple (*Acer saccharinum*).

2.2 Highway 400 to Creditstone Road

Vegetation is a mixture of native and non-native deciduous and coniferous planted trees within wide boulevards (10 to 25m in width) that are 6 to 48cm in diameter. Vegetation adjacent to Black Creek is outside of the study area. Two-hundred and eighty-two (282) individual trees and two-hundred and fifty-four trees in groupings were inventoried in this section (tree numbers: 51 to 253 and groupings TG-2 to TG-18). Species consistency varied between frequent to rare:

Frequent: Colorado Spruce, Norway Maple, Thornless Honeylocust, Austian Pine, Colorado Blue Spruce.

Occasional: Bur Oak, White Spruce, Crimson King Maple (*Acer platanoiodes 'Crimson King'*), Norway Spruce (*Picea abies*), Little Leaf Linden, Ivory Silk Tree, Schbert Cherry (*Prunus virginiana 'Schubert'*), Sugar Maple (*Acer saccharum*), White Birch (*Betula papyriera*).

Rare: Ohio Buckeye (*Aesculus glabra*), Kentucky Coffee Tree, Black Walnut, Catalpa, Scots Pine (*Pinus sylvestris*), Black Ash (*Fraxinus nigra*), Buckthorn (*Rhamnus spp*.), Pin Oak, White Pine (*Pinus strobus*), Red Oak (*Quercus rubra*), Pyramidal White Poplar (*Populus alba 'Pyramidalis'*), Hedge Maple, Accolade Elm (*Ulmus japonica x wilsonia 'Morton'*), Red Cedar (*Juniperus virginiana*), Crabapple (*Malus spp*.), Maidenhair Tree (*Ginkgo biloba*), European Beech (*Fagus sylvatica*), White Fir (*Abies concolor*), Sargent Cherry (*Prunus sargentii*).

2.3 Keele Street to Highway 7

Vegetation consists of a mixture of native and non-native deciduous and coniferous trees occurring naturally within the limits of the Don River or planted in parks and boulevards. Trees range in size from <10 to 90cm in diameter. Two hundred and forty-nine (249) individual trees and one hundred and ninety (190) trees in groupings were inventoried in this area (tree numbers 1 to 94 and groupings TG-1 to TG-10). Species consistency ranges between Frequent to rare:

Frequent: Manitoba Maple (*Acer negundo*), Basswood (*Tilia americana*), Thornless Honeylocust, Austrian Pine, Colorado Spruce, Colorado Blue Spruce.

Occasional: Ivory Silk Tree, Eastern White Cedar (*Thuja occidentalis*), Norway Maple, White Ash (*Fraxinus americana*), Bur Oak, Apple (*Malus spp*.), Black Walnut, Pear (*Pyrus spp*.), White Birch, Turkish

Hazel (*Corylus colurna*), Scots Pine, Marmo Maple (*Acer x freemanii 'Marmo'*), American Elm (*Ulmus americana*), White Spruce, Shagbark Hickory (*Carya ovata*).

Rare: Ironwood (*Ostrya virginiana*), Tembling Aspen (*Populus tremuloides*), Largetooth Aspen (*Populus grandidentata*), Ulmus pumila (*Siberian Elm*), Accolade Elm, Hackberry (*Celtis occidentalis*), Balsam Fir (*Abies balsamea*), Weeping Willow (*Salix alba var.vitellina*), Apple, Crimson King Maple, Staghorn Sumac (*Rhus typhina*), Chokecherry (*Prunus virginiana*), Silver Maple.

2.4 Vegetation Condition

The majority of trees were found to be in good condition. Signs of decline and defects were observed on a small amount of trees including:

- Deadwood ranging between 10 to >40%;
- Weakly formed unions; poor tree form due to abnormal development of scaffold branches causing injury to other branches;
- Lack of vigour;
- Lean & contorted growth;
- Base cavities;
- Broken branches and dead leaders;
- Suckering;
- Trunk wounds, stem cracks, rot, girlding roots, exposed roots, galls;
- Dead stems;
- Suppression of younger trees adjacent to mature trees;
- Symptoms of decline in Ash trees due to the presence of Emerald Ash Borer which included:
    - 'D' shaped holes;
    - Suckering at the base;
    - Woodpecker damage from woodpeckers eating the larvae and;
    - Deadwood in Crown.

3.0 Field Observations

The field observations were conducted on November 8 and 21, 2017 within the previously noted limits. Tree information recorded included species, diameter at breast height (DBH), dripline radius, location and general health condition. Trees were identified in accordance with the parameters of the RFP document:

- Trees within rural cross sections at 10cm and greater and trees smaller than 10cm that have been planted;
- Trees of any size locate within urban cross sections; and,
- Trees on adjacent lands whose crown extends onto the right of way.

A total of ±1095 trees were assessed for this report consisting of:

- Weston Road to Creditstone Road:
    - 369 individual trees (tree numbers 1 to 275); and
    - 287 trees in 20 tree groupings (TG-1 to TG-20).
- Keele Street to Highway 7:
    - 249 individual trees (tree numbers 1 to 94); and
    - 190 trees in 10 tree groupings (TG-1 to TG-10).

4.0 Definitions

The following are the definitions of the assessment categories utilized in our tree assessment:

Tree Number	This number refers to the number on the reference plan e.g.: TG-1, A.
Tree Grouping	A tree grouping is more than one (1) tree located within close proximity of other trees with no separation between the canopies.
Species	The botanical and common names are provided for each tree.
DBH	This refers to diameter (in centimetres) at breast height and is measured at 1.4 m above the ground for each tree.
Tree Protection Zone	This refers to the preservation area of the tree to be protected with tree protection measures. No construction activities are to be undertaken within this zone.
Suppressed	Refers to trees that have their crowns completely overtopped by adjacent trees and received limited to very limited sunlight.
Co-dominant Stem	Stems equal in size and relative importance that make up the overall crown of the tree.
Union	Junction point where two or more stems meet. A 'U' shaped junction indicates a well formed union. A 'V' shaped junction indicates a weakly formed union, whereas stems grow and increase in girth, weak bark called 'included bark' forms within the junction and stems start to push apart causing vertical cracks and loss of structure.
Tree Form	Refers to branches and stems that have formed irregularly often resulting in contorted growth, weak attachments, weakly formed unions and co-dominant stems. The irregular growth of scaffold (lateral) branches typically leads to damage to other scaffold branches.
Root Zone	Refers to the subterranean area around the tree measured from the trunk 2 to 3 times beyond the drip line.
Critical Root Zone	The minimum area of the root system necessary to maintain vitality or stability of the tree. Typically this area extends to the drip line of the tree. The severing of one root can cause approximately 5-20% loss of the root system. A reduction of this area by greater than 30% can pose stability concerns for the tree.

Tree Assessment Criteria:

Trunk Integrity (T.I.)	This is an assessment of the trunk for any defects or weaknesses. It is measured on a scale of poor, fair, good.
Canopy Structure (C.S)	This is an assessment of the scaffold branches, unions and the canopy of the tree. This is measured on a scale of poor, fair, good.
Canopy Vigour (C.V.)	This is an assessment of the health of the tree and assesses the amount of deadwood and live growth in the crown. The size, colour and amount of foliage are also considered in this category. This is measured on a scale of poor, fair, good.
GOOD	Tree displays less than 15% deficiency/defect within the given tree assessment criteria (TI, CS, CV).
FAIR	Tree displays 15%-40% deficiency/defect within the given tree assessment criteria (TI, CS, CV).
POOR	Tree displays greater than 40% deficiency/defect within the given tree assessment criteria (TI, CS, CV).

5.0 Policy Context

This section summarizes the various municipal, regional, provincial and federal planning policies and regulations related to the tree inventory and apply to the project. Thus they provide the policy context for this Tree Inventory report.

5.1 Forest Conservation By-law (Region of York)

The Regional Municipality of York has a By-Law that prohibits or regulates the destruction or injuring of trees in the Regional Municipality of York (By-Law No. 2013-68). This By-Law applies to the 'Woodlot' located at the northeast corner of Dufferin Street and Langstaff Road. A permit will not be required as the proposed works qualify for an exemption under Section 3.1(a) of the Tree Conservation By-law: '*activities of matters undertaken by a municipality or a local board of a municipality'*

'WOODLAND' means land at least 1ha in area with at least:

- 1000 trees, of any size, per ha;
- 750 trees, measuring over 5cm dbh, per ha;
- 500 trees, measuring over 12cm dbh, per ha;
- 250 trees, measuring over 20cm dbh, per ha

'WOODLOT' means land at least 0.2ha in area and no greater than 1ha in area, with at least:

- 200 trees , of any size, per 0.2ha;
- 150 trees, measuring over 5cm dbh, per 0.2ha;
- 100 trees, measuring over 12cm dbh, per 0.2ha;
- 50 trees, measuring over 20cm dbh, per 0.2ha

5.2 City of Vaughan – Private Property Tree Protection By-Law

This By-law (185-2007) prohibits or regulates the protection, destruction or injuring of trees located on private property, for trees that have a diameter of 20cm or greater.

5.3 City of Vaughan – Public Property Tree Protection By-law

This By-law (95-2005) protects trees of any size located on public property in the City of Vaughan.

5.4 TRCA Regulation Limit

The Toronto and Region Conservation Authority (TRCA), as mandated under O. Reg. 166/06 TRCA Regulation of Development, Interference with Wetlands and Alteration to Shorelines and Watercourses, regulates and may prohibit work that may take place within a regulated area ("an area that represents the greatest physical extent of the combined hazards, plus a prescribed allowance, as set out in the Conservation Authorities Act"). This includes valley and stream corridors, wetlands and associated areas of interference and the Lake Ontario waterfront.

At a minimum, woody tree species greater than 10 cm DBH are required to be inventoried for projects within a regulated area.

The Don River and Black Creek are within the TRCA's regulated area and Natural Heritage System (NHS).

5.5 Endangered Species Act, 2007

Species designated as Threatened or Endangered by the Committee on the Status of Species at Risk in Ontario (COSSARO), otherwise known as Species at Risk in Ontario (SARO), and their habitats (e.g., areas essential for breeding, rearing, feeding, hibernation and migration) are automatically afforded legal protection under the Endangered Species Act, 2007 (ESA) (Government of Ontario 2007).

In order to balance social and economic considerations with protection and recovery goals, the ESA also enables the Ministry of Natural Resources and Forestry (MNRF) to issue permits or enter into agreements with proponents in order to authorize activities that would otherwise be prohibited by subsections 9 (1) or 10 (1) of the ESA provided the legal requirements of the ESA are met.

O. Reg. 242/08 applies to all species on the SARO List (June 15, 2016, O. Reg. 176/13, s. 1; O. Reg. 179/14, s. 1; O. Reg. 308/16, s. 1). Habitat in southern Ontario is conducive for the growth and establishment of Butternut, a woody tree species listed as 'Endangered' on the SARO list, under O. Reg 230/08. Section 23.7 of O. Reg 242/08 outlines the protocols and conditions for the assessment and allowable activities that pertain to Butternut. Any Butternut observed on site are subject to these protocols.

5.6 Canada Food and Inspection Agency

Canada Food and Inspection Agency (CFIA) Directive D-03-08: Phytosanitary Requirements to Prevent the Introduction into and Spread within Canada of the Emerald Ash Borer (EAB), Agrilus planipennis (Fairmaire), applies to Ash (Fraxinus sp.) species observed on properties that are located within the EAB Regulated Areas of Canada, prepared by the CFIA and dated June 2019. This area covers all south and central Ontario and western Quebec. Ash trees that require removal are subject to this directive.

The CFIA restricts the movement of all Ash material including wood, bark, chips or bark chips from being transported outside of the Regulated Area. A Movement Certificate is required by the CFIA for any Ash material leaving the Regulated Area.

Ash are permitted to be chipped on site and / or removed or cut down and removed from site. Chipped Ash material that is to remain on site must be ground or chipped to a size of less than 2.5cm in any two dimensions. All Ash material chipped or whole that is to be removed from site must be disposed of within the Regulated Areas of Canada.

Refer to the CFIA website for a current map of the 'Emerald Ash Borer Regulated Areas of Canada'.

Ash with evidence of EAB damage were observed within the study area. Trees were in fair to poor condition with evidence of EAB infestation. Some dead Ash trees with evidence of EAB infestation were also noted during the inventory and are included in Appendix A: Tree Protection Tables.

6.0 Discussion

This section is a discussion of the retention potential, preservation and / or impacts to trees within the study area.

6.1 Impacts / Removals

Impacts to trees will occur where trees are located within the limits of excavation. Excavation and installation of the multi-use trails and sidewalks, sidewalk connections, grading and concrete paving for bus pads will significantly affect the critical root zone of trees.

Where an encroachment occurs within 1m of the trunk of the tree, tree removal is recommended.

Refer to tables 6.1 and 6.2 which detail removals by by-law relevance, tree number, species, size, encroachment, reason for removal and quantity.

Table 6.1 – Tree Removals

TREE #	SPECIES (COMMON NAME)	QTY.	SIZE (DBH)	TPZ ENCROACHMENT	REASON
Langstaff Road - Starting at Weston Road					
1	Little-leaf Linden	1	27	Within 1m of the trunk	Multi-use trail
3	Littleleaf Linden	1	26	Within 1m of the trunk	Multi-use trail
4	Littleleaf Linden	1	24	Within 1m of the trunk	Multi-use trail
5	Littleleaf Linden	1	22.5	Within 1m of the trunk	Multi-use trail
6	Littleleaf Linden	1	27	Within 1m of the trunk	Multi-use trail
TG-1	Manitoba Maple	2	21/17	Within 1m of the trunk	Multi-use trail
13	Littleleaf Linden	1	22	Within 1m of the trunk	Multi-use trail
14	Littleleaf Linden	1	23	Within 1m of the trunk	Multi-use trail
15	Littleleaf Linden	1	21	Within 1m of the trunk	Multi-use trail

16	Littleleaf Linden	1	19	Within 1m of the trunk	Multi-use trail
17	Littleleaf Linden	1	20	Within 1m of the trunk	Multi-use trail
18	Catalpa	1	11	Within 1m of the trunk	Multi-use trail
19	Catalpa	1	14	Within 1m of the trunk	Multi-use trail
20	Kentucky Coffeetree	1	12	Within 1m of the trunk	Multi-use trail
21	Kentucky Coffeetree	1	4	Within 1m of the trunk	Multi-use trail
49	Bur Oak	1	14	Within 1m of the trunk	Multi-use trail
50	Bur Oak	1	10	Within 1m of the trunk	Multi-use trail
51	Bur Oak	1	14	Within 1m of the trunk	Multi-use trail
52	Bur Oak	1	15	Within 1m of the trunk	Multi-use trail
53	Bur Oak	1	15	Within 1m of the trunk	Multi-use trail
54	Bur Oak	1	14	Within 1m of the trunk	Multi-use trail
55	Bur Oak	1	18.5	Within 1m of the trunk	Multi-use trail
56	Kentucky Coffeetree	1	13	Within 1m of the trunk	Multi-use trail
57	Kentucky Coffeetree	1	12	Within 1m of the trunk	Multi-use trail
58	Kentucky Coffeetree	1	15	Within 1m of the trunk	Multi-use trail
59	Kentucky Coffeetree	1	12.5	Within 1m of the trunk	Multi-use trail
60	Kentucky Coffeetree	1	11	Within 1m of the trunk	Multi-use trail
61	Black Walnut	1	10	Within 1m of the trunk	Multi-use trail
62	Black Walnut	1	8.5	Within 1m of the trunk	Multi-use trail
63	Black Walnut	1	9.5	Within 1m of the trunk	Multi-use trail
64	Black Walnut	1	8	Within 1m of the trunk	Multi-use trail
65	Honeylocust	1	4	Within 1m of the trunk	Multi-use trail
66	Honeylocust	1	4	Within 1m of the trunk	Multi-use trail
67	Honeylocust	1	5	Within 1m of the trunk	Multi-use trail
68	Honeylocust	1	4.5	Within 1m of the trunk	Multi-use trail
70	Norway Maple	1	31	Within 1m of the trunk	Multi-use trail
71	Norway Maple	1	4	Within 1m of the trunk	Multi-use trail
72	Colorado Spruce	3	4	Within 1m of the trunk	Multi-use trail
73	Norway Maple	1	4.5	Within 1m of the trunk	Multi-use trail
77	Norway Maple	1	2	Within 1m of the trunk	Multi-use trail
78	Norway Maple	1	31	Within 1m of the trunk	Multi-use trail
85	Kentucky Coffeetree	1	9	Within 1m of the trunk	Multi-use trail
86	Kentucky Coffeetree	1	8	Within 1m of the trunk	Multi-use trail
87	Kentucky Coffeetree	1	10	Within 1m of the trunk	Multi-use trail
88	Bur Oak	1	9	Within 1m of the trunk	Multi-use trail
89	Bur Oak	1	20	Within 1m of the trunk	Multi-use trail
90	Bur Oak	1	10	Within 1m of the trunk	Multi-use trail
91	Bur Oak	1	13	Within 1m of the trunk	Multi-use trail
92	Black Walnut	1	10	Within 1m of the trunk	Multi-use trail
93	Black Walnut	1	11	Within 1m of the trunk	Multi-use trail
94	Black Walnut	1	9.5	Within 1m of the trunk	Multi-use trail
95	Ohio Buckeye	1	6	Within 1m of the trunk	Multi-use trail
96	Catalpa	1	15	Within 1m of the trunk	Multi-use trail
97	Ohio Buckeye	1	6	Within 1m of the trunk	Multi-use trail
101	Norway Maple	1	22.5	Within 1m of the trunk	Multi-use trail
103	Norway Maple	1	27	Within 1m of the trunk	Multi-use trail
105	Kentucky Coffeetree	1	11	Within 1m of the trunk	Multi-use trail
106	Kentucky Coffeetree	1	11	Within 1m of the trunk	Multi-use trail
107	Kentucky Coffeetree	1	15	Within 1m of the trunk	Multi-use trail
108	Kentucky Coffeetree	1	15	Within 1m of the trunk	Multi-use trail
109	Bur Oak	1	12	Within 1m of the trunk	Multi-use trail
110	Catalpa	1	16	Within 1m of the trunk	Multi-use trail
111	Black Walnut	1	10	Within 1m of the trunk	Multi-use trail
112	Ohio Buckeye	1	6	Within 1m of the trunk	Multi-use trail
113	Ohio Buckeye	1	5	Within 1m of the trunk	Multi-use trail
114	Norway Maple	1	31/24	Within 1m of the trunk	Multi-use trail
115	Norway Maple	1	12,32/42	Within 1m of the trunk	Multi-use trail
115	Austrian Pine	4	12-42	Within 1m of the trunk	Multi-use trail
117	Colorado Spruce	2	21,26	Within 1m of the trunk	Multi-use trail
119	Colorado Spruce	1	25	Within 1m of the trunk	Multi-use trail
131	Kentucky Coffeetree	1	12	Within 1m of the trunk	Multi-use trail
132	Kentucky Coffeetree	1	14	Within 1m of the trunk	Multi-use trail
133	Kentucky Coffeetree	1	14	Within 1m of the trunk	Multi-use trail
134	Kentucky Coffeetree	1	13	Within 1m of the trunk	Multi-use trail
135	Norway Maple	1	19	Within 1m of the trunk	Multi-use trail
136	Norway Maple	1	11	Within 1m of the trunk	Multi-use trail

137	Norway Maple	1	10	Within 1m of the trunk	Multi-use trail
138	Honeylocust	1	4.5	Within 1m of the trunk	Multi-use trail
139	Honeylocust	1	4	Within 1m of the trunk	Multi-use trail
140	Norway Maple	1	24	Within 1m of the trunk	Multi-use trail
141	Honeylocust	1	5	Within 1m of the trunk	Multi-use trail
TG-7	Norway Spruce	6	15-25	Within 1m of the trunk	Multi-use trail
TG-8	White Spruce	1	20	Within 1m of the trunk	Multi-use trail
TG-8	Crimson King Maple	2	18-23	Within 1m of the trunk	Multi-use trail
TG-8	Littleleaf Linden	1	25	Within 1m of the trunk	Multi-use trail
142	Honeylocust	1	12	Within 1m of the trunk	Multi-use trail
143	Honeylocust	1	14	Within 1m of the trunk	Multi-use trail
144	Ivory Silk	1	7	Within 1m of the trunk	Multi-use trail
145	Ivory Silk	1	10	Within 1m of the trunk	Multi-use trail
146	Ivory Silk	1	7	Within 1m of the trunk	Multi-use trail
147	Honeylocust	1	10.5	Within 1m of the trunk	Multi-use trail
148	Ivory Silk	1	7.5	Within 1m of the trunk	Multi-use trail
149	Ivory Silk	1	7	Within 1m of the trunk	Multi-use trail
150	Ivory Silk	1	6.5	Within 1m of the trunk	Multi-use trail
151	Ivory Silk	1	6.5	Within 1m of the trunk	Multi-use trail
152	Austrian Pine	2	28	Within 1m of the trunk	Multi-use trail
TG-9	Pin Oak	3	8-12		
TG-11	Sugar Maple	7	6-8	Within 1m of the trunk	Multi-use trail
TG-12	White Birch	2	25,30	Within 1m of the trunk	Multi-use trail
TG-12	Norway Spruce	3	20-25	Within 1m of the trunk	Multi-use trail
TG-12	Russian Olive	3	20-25	Within 1m of the trunk	Multi-use trail
TG-12	Norway Spruce	3	18-20	Within 1m of the trunk	Multi-use trail
TG-12	Colorado Blue Spruce	3	25-30	Within 1m of the trunk	Multi-use trail
TG-13	Colorado Blue Spruce	3	30-35	Within 1m of the trunk	Multi-use trail
TG-13	Sugar Maple	2	25-30	Within 1m of the trunk	Multi-use trail
161	Pyramidal White Poplar	1	45	Within 1m of the trunk	Multi-use trail
162	Pyramidal White Poplar	1	47	Within 1m of the trunk	Multi-use trail
163	Pyramidal White Poplar	1	50	Within 1m of the trunk	Multi-use trail
164	Pyramidal White Poplar	1	44	Within 1m of the trunk	Multi-use trail
165	Pyramidal White Poplar	1	50	Within 1m of the trunk	Multi-use trail
TG-14	Colorado Blue Spruce	6	20-25	Within 1m of the trunk	Multi-use trail
TG-14	Norway Maple	6	15/18/20/22/28/18	Within 1m of the trunk	Multi-use trail
171	Norway Maple	3	24/20/20	Within 1m of the trunk	Multi-use trail
172	Austrian Pine	3	20-25	Within 1m of the trunk	Multi-use trail
182	Austrian Pine	3	18-22	Within 1m of the trunk	Multi-use trail
183	Colorado Spruce	3	18-24	Within 1m of the trunk	Multi-use trail
184	Red Cedar	1	12	Within 1m of the trunk	Multi-use trail
184	Austrian Pine	2	27-32	Within 1m of the trunk	Multi-use trail
187	Honeylocust	3	12/11/11	Within 1m of the trunk	Multi-use trail
189	Norway Maple	1	29	Within 1m of the trunk	Multi-use trail
190	Crabapple	1	7	Within 1m of the trunk	Multi-use trail
191	Colorado Blue Spruce	3	20-26	Within 1m of the trunk	Multi-use trail
192	Crabapple	1	7	Within 1m of the trunk	Multi-use trail
195	Crabapple	1	6	Within 1m of the trunk	Multi-use trail
196	Hedge Maple	1	9	Within 1m of the trunk	Multi-use trail
197	Maidenhair Tree	1	20	Within 1m of the trunk	Multi-use trail
200	Hedge Maple	1	8	Within 1m of the trunk	Multi-use trail
201	Schubert Cherry	1	6		
202	Hedge Maple	2	10		
204	Schubert Cherry	1	6	Within 1m of the trunk	Multi-use trail
205	Schubert Cherry	1	6	Within 1m of the trunk	Multi-use trail
206	Schubert Cherry	1	11	Within 1m of the trunk	Multi-use trail
207	Schubert Cherry	1	6	Within 1m of the trunk	Multi-use trail
208	Hedge Maple	1	5	Within 1m of the trunk	Multi-use trail
209	Hedge Maple	1	6	Within 1m of the trunk	Multi-use trail
210	Hedge Maple	1	12	Within 1m of the trunk	Multi-use trail
211	Hedge Maple	1	10	Within 1m of the trunk	Multi-use trail
212	Ivory Silk	1	4.5	Within 1m of the trunk	Multi-use trail
213	Ivory Silk	1	6	Within 1m of the trunk	Multi-use trail
214	Ivory Silk	1	6	Within 1m of the trunk	Multi-use trail
215	Ivory Silk	1	7	Within 1m of the trunk	Multi-use trail
216	Ivory Silk	1	8	Within 1m of the trunk	Multi-use trail

217	Ivory Silk	1	9	Within 1m of the trunk	Multi-use trail
218	Ivory Silk	1	6	Within 1m of the trunk	Multi-use trail
TG-16	Honeylocust	3	20-43	Within 1m of the trunk	Multi-use trail
TG-16	European Beech	1	14	Within 1m of the trunk	Multi-use trail
TG-16	Colorado Spruce	1	24-32	Within 1m of the trunk	Multi-use trail
219	Amur Maple	1	7	Within 1m of the trunk	Multi-use trail
220	Amur Maple	1	7	Within 1m of the trunk	Multi-use trail
221	Sargent Cherry	1	7	Within 1m of the trunk	Multi-use trail
221	Red Oak	1	26	Within 1m of the trunk	Multi-use trail
225	Sargent Cherry	1	8	Within 1m of the trunk	Multi-use trail
226	Hedge Maple	1	8	Within 1m of the trunk	Multi-use trail
227	Hedge Maple	1	9	Within 1m of the trunk	Multi-use trail
228	Hedge Maple	1	8	Within 1m of the trunk	Multi-use trail
229	Hedge Maple	1	7	Within 1m of the trunk	Multi-use trail
230	Hedge Maple	1	8	Within 1m of the trunk	Multi-use trail
231	Hedge Maple	1	8	Within 1m of the trunk	Multi-use trail
236	Ornamental Pear	1	11	Within 1m of the trunk	Multi-use trail
237	Hedge Maple	1	9	Within 1m of the trunk	Multi-use trail
238	Sargent Cherry	1	13	Within 1m of the trunk	Multi-use trail
239	Hedge Maple	1	9	Within 1m of the trunk	Multi-use trail
240	Hedge Maple	1	11	Within 1m of the trunk	Multi-use trail
243	Norway Maple	1	18	Within 1m of the trunk	Multi-use trail
245	Sargent Cherry	1	7	Within 1m of the trunk	Multi-use trail
246	Hedge Maple	1	13	Within 1m of the trunk	Multi-use trail
247	Hedge Maple	1	8	Within 1m of the trunk	Multi-use trail
248	Hedge Maple	1	6	Within 1m of the trunk	Multi-use trail
249	Sugar Maple	1	6	Within 1m of the trunk	Multi-use trail
TG-18	Common Lilac	17	<10	Within 1m of the trunk	Multi-use trail
TG-18	Chokecherry	5	<10	Within 1m of the trunk	Multi-use trail
	Hedge Maple	3	11-13	Within 1m of the trunk	Multi-use trail
250	Colorado Spruce	1	24	Within 1m of the trunk	Multi-use trail
251	Ornamental Pear	1	10	Within 1m of the trunk	Multi-use trail
252	Ornamental Pear	1	13	Within 1m of the trunk	Multi-use trail
253	Ornamental Pear	1	12	Within 1m of the trunk	Multi-use trail
265	Hedge Maple	1	14	Within 1m of the trunk	Multi-use trail
266	Colorado Spruce	1	29	Within 1m of the trunk	Multi-use trail
267	Colorado Spruce	1	27	Within 1m of the trunk	Multi-use trail
268	Norway Maple	1	26	Within 1m of the trunk	Multi-use trail
269	Norway Maple	1	30	Within 1m of the trunk	Multi-use trail
TG-20	Austrian Pine	1	35	Within 1m of the trunk	Multi-use trail
TG-20	Silver Maple	3	15-25	Within 1m of the trunk	Multi-use trail
Langstaff Road - East of Keele Street					
1	Ivory Silk Lilac	1	9	Within 1m of the trunk	Multi-use trail
1	Eastern White Cedar	2	<10	Within 1m of the trunk	Multi-use trail
2	Norway Maple	1	32	Within 1m of the trunk	Multi-use trail
3	Norway Maple	1	26	Within 1m of the trunk	Multi-use trail
4	Norway Maple	1	35	Within 1m of the trunk	Multi-use trail
5	Norway Maple	1	36	Within 1m of the trunk	Multi-use trail
6	Norway Maple	1	30	Within 1m of the trunk	Multi-use trail
TG-1	Staghorn Sumac	8	<10	Within 1m of the trunk	Multi-use trail
TG-1	White Ash	1	<10	Within 1m of the trunk	Multi-use trail
TG-1	Bur Oak	3	10-20	Within 1m of the trunk	Multi-use trail
TG-1	Apple	1	<10	Within 1m of the trunk	Multi-use trail
TG-1	Basswood	5	6-20	Within 1m of the trunk	Multi-use trail
TG-1	Black Walnut	1	<5	Within 1m of the trunk	Multi-use trail
TG-1	Manitoba Maple	7	6-15	Within 1m of the trunk	Multi-use trail
7	Black Walnut	1	11	Within 1m of the trunk	Multi-use trail
TG-2	Honeylocust	2	42,43	Within 1m of the trunk	Multi-use trail
TG-2	Austrian Pine	6	32-45	Within 1m of the trunk	Multi-use trail
TG-2	Pear	1	10-13	Within 1m of the trunk	Multi-use trail
TG-2	Chokecherry	4	<10	Within 1m of the trunk	Multi-use trail
TG-2	Manitoba Maple	1	11,12	Within 1m of the trunk	Multi-use trail
8	Silver Maple	1	34	Within 1m of the trunk	Multi-use trail
9	Colorado Spruce	1	23	Within 1m of the trunk	Multi-use trail
9	Colorado Spruce	1	18	Within 1m of the trunk	Multi-use trail

10	Austrian Pine	1	52	Within 1m of the trunk	Multi-use trail
11	Norway Maple	1	32	Within 1m of the trunk	Multi-use trail
12	Colorado Blue Spruce	1	35	Within 1m of the trunk	Multi-use trail
13	Honeylocust	1	16	Within 1m of the trunk	Multi-use trail
14	Honeylocust	1	37	Within 1m of the trunk	Multi-use trail
15	Norway Maple	1	32	Within 1m of the trunk	Multi-use trail
16	Colorado Blue Spruce	1	36	Within 1m of the trunk	Multi-use trail
17	Honeylocust	1	32	Within 1m of the trunk	Multi-use trail
TG-3	Colorado Blue Spruce	1	35-37	Within 1m of the trunk	Multi-use trail
TG-3	Honeylocust	1	40	Within 1m of the trunk	Multi-use trail
TG-3	Norway Maple	1	25	Within 1m of the trunk	Multi-use trail
TG-3	Austrian Pine	18	30-42	Within 1m of the trunk	Multi-use trail
18	Austrian Pine	3	30-35	Within 1m of the trunk	Multi-use trail
24	Honeylocust	3	32-35	Within 1m of the trunk	Multi-use trail
25	Austrian Pine	3	25-40	Within 1m of the trunk	Multi-use trail
26	Austrian Pine	5	25-30	Within 1m of the trunk	Multi-use trail
32	Norway Maple	1	15-22	Within 1m of the trunk	Multi-use trail
32	Silver Maple	1	31	Within 1m of the trunk	Multi-use trail
33	Colorado Blue Spruce	5	29-39	Within 1m of the trunk	Multi-use trail
33	Basswood	4	40-45	Within 1m of the trunk	Multi-use trail
34	Colorado Blue Spruce	2	30-35	Within 1m of the trunk	Multi-use trail
35	Freeman Maple	1	9/15	Within 1m of the trunk	Multi-use trail
36	Colorado Blue Spruce	2	21/22	Within 1m of the trunk	Multi-use trail
37	Freeman Maple	3	9/13/12	Within 1m of the trunk	Multi-use trail
38	Colorado Blue Spruce	2	25/25	Within 1m of the trunk	Multi-use trail
39	Freeman Maple	3	10/15/14	Within 1m of the trunk	Multi-use trail
63	Austrian Pine	2	20/35	Within 1m of the trunk	Multi-use trail
64	Ivory Silk	6	6-7	Within 1m of the trunk	Multi-use trail
65	Swamp White Oak	6	6-8	Within 1m of the trunk	Multi-use trail
66	Ivory Silk	5	6-7	Within 1m of the trunk	Multi-use trail
67	American Elm	1	51	Within 1m of the trunk	Multi-use trail
67	Honeylocust	1	45	Within 1m of the trunk	Multi-use trail
68	Colorado Blue Spruce	2	28/31	Within 1m of the trunk	Multi-use trail
68	Norway Maple	1	36	Within 1m of the trunk	Multi-use trail
69	Norway Maple	2	30-40	Within 1m of the trunk	Multi-use trail
69	Austrian Pine	4	35-40	Within 1m of the trunk	Multi-use trail
70	Norway Maple	1	45	Within 1m of the trunk	Multi-use trail
74	Colorado Blue Spruce	2	28-37	Within 1m of the trunk	Multi-use trail
74	Colorado Blue Spruce	3	28-37	Within 1m of the trunk	Multi-use trail
76	Austrian Pine	1	25	Within 1m of the trunk	Multi-use trail
79	Austrian Pine	4	28-37	Within 1m of the trunk	Multi-use trail
80	Norway Maple	3	32-35	Within 1m of the trunk	Multi-use trail
81	Colorado Blue Spruce	5	29-35	Within 1m of the trunk	Multi-use trail
82	Norway Maple	3	29-34	Within 1m of the trunk	Multi-use trail
82	Austrian Pine	2	25/30	Within 1m of the trunk	Multi-use trail
83	Black Walnut	1	15	Within 1m of the trunk	Multi-use trail
85	Bur Oak	1	±35	Within 1m of the trunk	Multi-use trail
86	Bur Oak	1	±40	Within 1m of the trunk	Multi-use trail
87	Bur Oak	1	±50	Within 1m of the trunk	Multi-use trail
88	Manitoba Maple	1	MS <10	Within 1m of the trunk	Multi-use trail
90	Crimson King Maple	1	29	Within 1m of the trunk	Multi-use trail
91	Crimson King Maple	1	33	Within 1m of the trunk	Multi-use trail
92	Crimson King Maple	1	37	Within 1m of the trunk	Multi-use trail
93	Colorado Blue Spruce	1	36	Within 1m of the trunk	Multi-use trail

Table 6.2 – Tree Removal Summary Table

BY-LAW	TREE #	QUANTITY
Region (ROW)	**Langstaff Road - Starting at Weston Road**	
	1, 3 to 6, TG-1 (2 trees), 13 to 21, 49, 50, 51 to 68, 72, 85 to 97, 105 to 113, 131 to 151, 152 (2 trees), TG-11 (7 trees), TG-12 (15 trees), TG-13 (5 trees), 161 to 165, 190, 192, 195, 196, 200 to 202, 204 to 218, 221 (2 trees), 225 to 231, 236 to 240, 245 to 253, TG-18 (22 trees), 265	156
	Langstaff Road - East of Keele Street	
	1 (2 trees), 2 to 6, TG-1 (14 trees), 9 (1 tree), 12, 13, 63 to 67, 74 (2 trees), 79 (4 trees), 80 (3 trees), 81 (5 trees), 82 (5 trees), 90 to 93	68
Private	**Langstaff Road - Starting at Weston Road**	
	70, 71, 73, 77, 78, 101, 103, 115 (4 trees), 117 (2 trees), 119, TG-7 (6 trees), TG-8 (4 trees), TG-9 (3 trees), TG-14 (12 trees), 171 (3 trees), 172 (3 trees), 181 (1 tree), 182 (3 trees), 183 (3 trees), 184 (3 trees), 187 (3 trees), 189, 191 (3 trees), 193, 197, TG-16 (2 trees), 243 (1 tree), TG-18 (3 trees), 266 to 269, TG-20 (4 trees)	82
	Langstaff Road - East of Keele Street	
	TG-1 (12 trees), 7 , TG-2 (14 trees), 8, 9 (1 tree), 10, 11, 14 to 17, 18 (3 trees), TG-3 (22 trees), 24 (3 trees), 25 (3 trees), 26 (5 trees), 32 (2 trees), 33 (9 trees), 34 (2 trees), 35, 36 (2 trees), 37 (3 trees), 38 (2 trees), 39 (3 trees), 68 (3 trees), 69 (6 trees), 70, 74 (3 trees), 83, 85 to 88	114
Total		**420**

6.2 Tree Protection

Trees to be Retained

- Trees that are well beyond construction limits with no encroachment into the tree protection zone can be retained. These trees are outside of the new property line and will not require tree protection hoarding.

Tree Protection

- Trees where construction limits will either encroach into the tree protection zone or will be within close proximity of the TPZ and / or dripline, will require tree protection hoarding. These trees are within the limits of the new property line. Tree protection hoarding will be determined, should this project proceed to detailed design.

Table 6.3 – Tree Protection Table

TREE #	SPECIES (COMMON NAME)	QTY.	SIZE (DBH)
2	White Spruce	3	12/30/30
83	Colorado Spruce	2	22,24
84	Colorado Spruce	4	25-30
118	Maidenhair Tree	1	15
121	Colorado Spruce	3	25-30
122	Norway Maple	2	43
123	Austrian Pine	3	36/37/45
TG-7	Buckthorn	5	8-12
TG-9	Schubert Cherry	4	8-10
TG-9	Colorado Spruce	3	8-10
TG-9	White Spruce	2	8-10
TG-10	Pin Oak	1	11
TG-10	Schubert Cherry	3	6-10
TG-10	Colorado Spruce	5	9-11
TG-11	Sugar Maple	6	6-8
173	Hedge Maple	1	12
182	Austrian Pine	1	18-22
199	Colorado Spruce	1	22-30
199	Colorado Spruce	2	22-30
TG-16	Austrian Pine	3	30-35
TG-16	Honeylocust	3	24-30
TG-16	Colorado Spruce	5	24-32
271	Norway Maple	1	29
274	Norway Maple	1	25
23	Norway Maple	2	23-30
30	Basswood	1	20,30,28
31	Austrian Pine	2	38-42
31	White Birch	2	12-24
TG-5	Colorado Blue Spruce	14	20-35
TG-5	Norway Maple	1	25-30
TG-5	Basswood	7	18-40
TG-5	White Ash	3	25-35
73	Norway Maple	1	39
75	Norway Maple	3	33-35
76	Austrian Pine	3	25-45
77	Norway Maple	1	30
78	Norway Maple	2	30/32

Table 6.4 - Tree Protection – Summary Table

BY-LAW	TREE #	QUANTITY
Region (ROW)	**Langstaff Road - Starting at Weston Road**	6
	TG-11 (6 trees)	
	Langstaff Road - East of Keele Street	9
	75 (3 trees), 76 (3 trees), 77, 78 (2 trees)	
Private	**Langstaff Road - Starting at Weston Road**	58
	2 (3 trees), 833 (2 trees), 84 (4 trees), 118, 121 (3 trees), 122, 123 (3 trees), TG-7 (±5), TG-9 (9 trees), TG-10 (9 trees), 173, 182, 199 (3 trees), TG-16 (11 trees), 271, 274	
	Langstaff Road - East of Keele Street	33
	23 (2 trees), 30, 31 (4 trees), TG-5 (25 trees), 73	
Total		**106**

Table 6.5 - Minimum Tree Protection Zone (TPZ) Determination – Region of York

TRUNK DIAMETER	MINIMUM PROTECTION DISTANCES REQUIRED STREET TREES AND TREES IN NATURALIZED AREAS	EXAMPLE
<24cm	2.4m	
>25cm	DBH (cm) x 10 / 100 = TPZ	43cm x 10 / 100 = 4.3m TPZ

6.3 Tree Preservation Zone Reduction / Mitigation Measures

- Reductions of the tree protection hoarding will be required due to the location of the multi-use path, sidewalks, excavation, grading, construction and property acquisitions. Root damage may occur dependent upon the proximity of the proposed works;
- Any roots or branches encountered are to be pruned in accordance with the recommendations in Section 11.2 and 11.3. Specific mitigation measures may be recommended where reductions may be significant, however do not warrant the removal of trees (e.g. encroachments are not within 1m of the trunk);

Mitigation measures will be determined should this project proceed to detailed design. These measures may include:

- Prior to any site work where excavation will be necessary within the dripline root pruning the following methods are recommended:
    - Individual trees: root exploratory excavation and / or root-sensitive excavation and root pruning. These measures would be applied along a 0.5m wide section within and along the length of the TPZ to 500mm depth at the limit of excavation. The purpose of this is to expose roots that would be damaged during excavation so roots can be pruned using acceptable arboricultural techniques (see 'Root Pruning' in Section 11.0). once roots have been pruned, backfill with the same or native material, or
    - Trees in groupings: Prune roots along the limit of excavation using a mechanical pruning machine with a rotating saw disc to a minimum depth of 30cm. This machine is to be operated by an individual who is either a certified arborist or one who has a good knowledge of arboriculture.
    - Soil decompaction through aeration. Expose soil using Air Spade, Air Knife of similar. Install mixture of 50mm layer of wood chip mulch and sand to a depth of 200mm within the area of compaction.
- Any roots exposed during grading are to be pruned using good arboricultural practices and per the guidelines in Section 11.2 of this report.
- To minimize damage to roots it is recommended that excavators scrape soil within the same direction of the roots and not across. Any roots exposed are to be pruned neatly and cleanly.
- After construction it is recommended that a 150mm depth layer of mulch be placed in a 2m radius around the trunks of trees where remediation has been recommended these trees.
- Water trees periodically during construction.
- Any branches that require pruning are to be pruned by a Certified Arborist or under the supervision of one and in accordance with the guidelines in the report in Section 11.

The following Table details the tree #, tree species and size where TPZ reductions may occur and where mitigation measures may be required.

Table 6.6 – TPZ Encroachment Table

TREE #	SPECIES (COMMON NAME)	QTY.	SIZE (DBH)
Langstaff Road – Starting at Weston Road			
TG-1	Colorado Spruce	2	16-25
80	Colorado Spruce	3	28/30
100	Norway Maple	1	30
102	White Spruce	2	20-25
116	Norway Maple	1	31
117	Colorado Spruce	1	36
TG-8	White Spruce	4	15-20
170	Colorado Blue Spruce	3	20-25
173	Hedge Maple	1	12
199	Manitoba Maple	3	180-22
199	Austrian Pine	3	20-28
TG-17	Eastern White Cedar	12	<10
TG-17	White Spruce	3	11 /15 / 18
TG-17	Colorado Spruce	1	18
244	White Fir	1	22-23
264	Hedge Maple	1	14
270	Norway Maple	1	30
Langstaff Road – East of Keele Street			
22	Norway Maple	3	22-35
23	Norway Maple	2	23-30
31	Austrian Pine	1	38-42
32	Silver Maple	1	23
53	Colorado Blue Spruce	1	10-18
67	Austrian Pine	2	28,28/35
67	Norway Maple	2	40-45
67	Norway Maple	1	45
71	Norway Maple	1	51

Table 6.7 – TPZ Encroachment Summary Table

BY-LAW	TREE #	QUANTITY
Region	**Langstaff Road - Starting at Weston Road**	
	264	1
	Langstaff Road - East of Keele Street	
	0	0
Private	**Langstaff Road - Starting at Weston Road**	
	TG-1 (2 trees), 80 (3 trees), 100, 102 (2 trees), 116, 117, 170 (3 trees), 173, TG-8 (4 trees), 199 (6 trees), TG-17 (16 trees), 244, 270,	42
	Langstaff Road - East of Keele Street	
	22 (3 trees), 23 (2 trees), 31, 32, 53, 67 (5 trees), 71	14
Total		**57**

7.0 Invasive Species

7.1 Buckthorn Management Plan

Buckthorn was observed along the edges of tree grouping TG-7 (near Langstaff Road and Creditstone Road) and along the woodlot edge at the northeast corner of Dufferin Street and Langstaff Road. Consideration should be given to the removal of this invasive tree. Removal to be in conformance with the guidelines and recommendations outlined in the Invasive Common Buckthorn – Best Management Practices in Ontario found on the Ontario Invasive Plant Council website (http://www.ontarioinvasiveplants.ca/index.php/ manage control). This plan has been developed to ensure that Buckthorn is removed so it does not re-establish after the proposed works have been completed.

Buckthorn Removal:

- Removal to be undertaken in June/July prior to fruit production to mitigate any fruits falling to the ground and germinating. If removals cannot be undertaken at this time that the fall between mid-October to mid-November when surrounding plants are dormant and soil is moist and pliable is acceptable. The leaves of Buckthorn stay on longer than most trees and shrubs making it easier to identify them in the late fall.
- Plants shall be removed in their entirety including the root system. Plants within the temporary access road limit are to be removed manually and mechanically dependent on size.
- Manual Removal:
    - Seedlings up to 5cm DBH shall be removed by hand using an ‘extractigator’ tree puller and wrench tree pulling tool or other hand held tools. It is recommended that manual removal occur when soil is moist as it will be easier to remove seedlings and their entire root.
- Removals within Tree Preservation Areas where no construction will occur:
    - Apply manual removal method for stems under 5cm. Stems above 5cm DBH are to be cut at ground level and treated with herbicide. Removal to be undertaken in the late fall (mid-October to mid-November) when plants to be preserved have gone into dormancy and the disturbance to the soil and plants will be minimized.
    - Trees >5cm are to be cut at ground and treated with herbicide applied to fresh cuts / stumps immediately after cutting to prevent re-growth. To be applied by a certified pesticide applicator during favourable conditions and in accordance with the *Ontario Pesticides Act* and *Ontario Regulation 63/09* which provides exceptions allowing chemical control of invasive plants. Refer to 'best management practices in Ontario - invasive common buckthorn', by the Ontario invasive plant council.
- Refer to 'best management practices in Ontario - invasive common buckthorn', by the Ontario invasive plants council.
- Dispose of off-site.

8.0 Ash Tree Removal

Ash Trees were observed to contain the Emerald Ash Borer (EAB) within the inventory area limit. The decline of Ash trees as a result of the EAB infestation varied from 'fair' to 'dead'. EAB killed trees are likely to become a 'Hazard' as they are more susceptible to wind throw. Consideration should be given to the removal of Ash trees that are in severe decline as a result of EAB. Treatment through the use of TreeAzin or equivalent can be an option, provided that the tree is healthy and has not been infested by the Emerald Ash Borer.

There are 4 individual trees (27, 57, 59 and 61) between Keele and Highway 7, trees along the Woodlot Edge (TG-5) at Dufferin and Langstaff Road and in grouping TG-6, east of Jane Street.

9.0 Tree Removals / Injury / Compensation

The preliminary preferred alignment will impact trees within the existing right-of-way and within the proposed right-of-way to accommodate the road widening, multi-use trails, retaining walls and grading.

As the limits of work will occur on Region and City property, removals and compensation have been separated by location.

9.1 Region of York - Compensation

The number of replacement trees is determined through the following formula:
Number of replacement trees = DBH of tree to be removed ÷ Replacement Tree Caliper Size * Condition rating.

Table 9.1 – Compensation Formula – Replacement Trees (Example)

Tree ID	DBH of Tree Removed	Replacement Tree Caliper Size	Condition Rating	Replacement Trees
001	20	5	100	4

Compensation value is calculated as follows:

Compensation Value ($) = (Number of replacement trees) * Replacement Cost

Table 9.2 – Compensation Formula – Value (Example)

# of Replacement Trees	Replacement Cost	Value
4	$846.84	$ 3,387.36

Table 9.3 – Compensation

Compensation has been estimated and summarized in the table below. This is based on the amount of trees to be removed on Region property, tree size and the required compensation amount based on Tables 9.1 and 9.2. The compensation value has been estimated per Tables 9.1, 9.2 and 9.3. Should this project proceed to detailed compensation can be provided at that time.

Tree #	DBH (cm)	Species	Condition	Condition Rating (%)	Removals	# of Replacement Trees (rounded)	Compensation Value ($)
Varies	Varies	Varies	Varies	Varies	224	711	TBD
		Subtotal				**711**	**TBD**
		# of Replacement Trees Proposed				**0**	**TBD**
		Total				**711**	**TBD**

9.2 City of Vaughan Compensation

Replacement trees are based on the following criteria:

- 1:1 replacement ratio (Recommended) for City trees;
- City of Vaughan Replacement trees:
  - 1 tree for each tree that is 20 to 30cm DBH;
  - 2 trees for each tree that is 31 to 40cm DBH;
  - 3 trees for each tree that is 41 to 50cm DBH:
  - 4 trees for each tree that is 50cm or greater
- Cash-in-lieu of planting for tree on private property (<20cm) is $550.00 per tree

Table 9.4 – Removal and Compensation Table

By-law	Removals	Exempt	Sub-total	Sub-total (trees subject to Private Tree By-law)	Replacement Ratio	Replacement Trees
City	-	-	-		1:1	-
Private	196	43 (<20cm)	153	71	1 tree for trees 20 to 30cm	71
				55	2 trees for trees 31 to 40cm	110
				26	3 trees for trees 41 to 50cm	78
				1	4 trees for trees +50cm	1
Total	**196**	**43**	**153**	**153**		**260**

Table 9.5 – Overall Compensation Table

By-law	Removals	Replacement Ratio	Replacement Trees Required	Proposed Trees	Total Trees Required
Region	224	Varies	711	N/A	711
Private	153	Varies	260	N/A	260
Total					**971**

10.0 Conclusion

A majority of vegetation found on site is immature to semi-mature and characterized by native non-native deciduous and coniferous trees that a majority have been planted.

A significant amount of trees will require removal to accommodate the proposed road improvements. Most of the trees area are located within the right-of-way.

11.0 Preservation and Protection Recommendations

The survival rates for trees, which are in proximity to construction, are dependent on the resultant changes to a variety of environmental and anthropogenic factors. These construction activities bring about changes to a variety of environmental features such as the existing microclimate that includes winds, air temperature, soil moisture, amount of available sunlight, soil quality, and the level of the water table. Increased human activities may also damage the structure and/or physiological activities of the trees. The full effects of any damage that occurs may not appear until several years after its occurrence. Thus, it is essential that both vegetative clearing and preservation methods follow the guidelines below and those generally accepted as keeping with good horticultural and construction practices. The guidelines are subject to adjustments deemed reasonable and appropriate considering the proximity and number of trees involved and the site-specific servicing requirements

11.1 General Recommendations

The following is a list of practical considerations for the construction phase of the project that applies to all trees that may be impacted by the construction:

- The tree protection fencing will be maintained until all construction is completed, soils are stabilized and all of the equipment has been removed from the site.

- Prior to the commencement of tree removals, all limits of the locations of the tree preservation fencing must be clearly staked in the field, installed per approved plans, and approved by the contract administrator. All trees within the tree preservation zone must be left standing. The tree removals must be coordinated in accordance and compliance with the Migratory Bird Convention Act (MBCA).

- All removals must be felled into the work area to ensure that damage does not occur to the trees within the tree preservation zone.

- Upon completion of the tree removals, all felled trees are to be removed from the site, and all should be brush chipped. All brush, roots and wood debris must be shredded into pieces that are smaller than 25 mm in size to ensure that any insect pests that could be present within the wood are destroyed.

- The Canadian Food and Inspection Agency (CFIA) has issued a prohibition of movement where the Emerald Ash Borer (EAB) has been confirmed. EAB has been found within the Region of York and thus the Town has been identified as part of the EAB Regulated Area encompassing most of Ontario and a portion of western Quebec. This directive pertains to the movement of regulated materials (including but not limited to ash wood or bark and ash wood chips or bark chips) from a regulated area. EAB regulated articles moving out of a regulated area must be accompanied by a Movement Certificate issued by the CFIA. Refer to the EAB Regulated Areas of Canada found on the CFIA website.

- Ash materials may be removed from the site and disposed of within the 'Regulated Area' (see CFIA website for the 'Regulated Area' limits). Should it be necessary to dispose of Ash products outside of the 'Regulated Area' a 'Movement Certificate' will be required from the CFIA prior to transport.

- Tree protection fencing must be constructed and installed as per the details on the approved Tree Preservation Plan. Upon installation of the fencing, the contractor will contact the contract administrator to review and approve the fencing and its location prior to commencement of any grading work.

- Areas within the tree preservation zone (TPZ) are not to be used for any type of storage (e.g. storage of debris, construction material, surplus soils, and construction equipment). No trenching or tunnelling for underground services shall be located within the tree protection zone or dripline of trees designated for preservation within or adjacent to the construction zone.

- No grade changes shall occur within tree preservation zone unless approved as part of this report. In the event that any grade changes may occur, either as a cut or fill situation, the consulting arborist must be notified prior to such work occurring to ensure that all precautions to preserve the tree are made.

- Trees shall not have any rigging cables or hardware of any sort attached or wrapped around them, nor shall any contaminants be dumped within the protective areas. Further, no contaminants shall be dumped or flushed where they may come into contact with the feeder roots of the trees.

- In the event that it is necessary to remove additional limbs or portions of trees after construction has commenced, in order to accommodate the construction, the consulting arborist is to be informed and under their direction the removal is to be executed carefully and in full accordance with arboricultural techniques, by a certified arborist.

11.2 Root Pruning Practices:

- All approved root pruning is to take place by or under the supervision of an arborist and in accordance good arboricultural practices.

- Pruned root ends shall be neatly and squarely trimmed and the area shall be backfilled with clean native fill as soon as possible to prevent desiccation and promote root growth.

- The exposed roots shall not be allowed to dry out and an appropriate watering schedule shall be undertaken (e.g. water bi-weekly to field capacity between June 1st and September 15th) so that the roots maintain optimum soil moisture during construction and backfilling operations.

- Backfilling shall occur immediately and shall be with clean uncontaminated topsoil from an approved source. It is recommended that texture of backfill be coarser than existing soils, and that backfill comes into clean contact with existing soils, i.e. remove air pockets, sod, etc.

11.3 Branch Pruning Practices:

- All limbs damaged or broken during the course of construction should be pruned cleanly, utilizing by-pass secateurs in accordance with approved horticultural practices. Should there be a potential risk of transfer of disease from infected to non-infected trees, tools must be disinfected after pruning each tree by dipping in methyl hydrate. This practice is particularly important during periods of tree stress and when pruning many members of the same genera, within which a disease could be spread quickly (i.e., Verticillium Wilt on Maples or Fireblight on genera of the Rosaceae family).

- All pruning cuts should be made to a growing point such as a bud, twig or branch, cut just outside the branch collar (the swollen area at the base of the branch that sometimes has a bark ridge), and perpendicular to the branch being pruned rather than as close to the trunk as possible. This minimizes the site of the wound. No stubs should be left. Poor cut location, poor cut angle and torn cuts are not acceptable.

- Extensive pruning is best completed before plants break dormancy. Pruning should be limited to the removal of no more than one third (1/3) of the total bud and leaf bearing branches. Pruning should include the careful removal of:
    1. deadwood,
    2. branches that are weak, damaged, diseased and those which will interfere with construction activity,
    3. secondary leaders of conifers,
    4. trunk and root suckers,
    5. trunk waterspouts, and
    6. tight V-shaped or weak crotches (included unions).

- Any branches that overhang the work area and require pruning are to be pruned using good arboricultural practices utilizing by-pass secateurs in accordance with approved horticultural practices and/or American National Standard (ANSI) A300 (Part 1) – 2008 Pruning.

- The Contractor must report immediately any damage to trees such as broken limbs, damage to roots, or wounds to the main trunk or stem systems so that the damage can be assessed immediately.

11.4 Construction Implementation

Pre-Construction:

- A site meeting will be held with Contractor and Contract Administrator to review the clearing limits and confirm the installation location for the temporary tree protection fence;
- Tree removal along the tree retention limit must be carefully felled away from the tree retention limit and into the construction / development area. Stumps adjacent to trees identified for retention are to be flush cut and not chipped or grubbed in order to avoid impacts to retained trees.

Construction:

- Periodic inspections will be undertaken by the site supervisor to ensure that the mitigation measures are being maintained during construction;
- The temporary protection fence is to be maintained throughout the entire construction period. No equipment storage, flushing of fuel, washing of construction equipment, and storage of spoil or construction debris is to occur behind the temporary protection fence;
- To avoid root zone impacts on trees to be retained, excavated material will not be stored against the tree protection barrier;

Post-Construction:

- The temporary protection fence will be removed last after all of the construction has ended, soils are stabilized and all of the equipment has been removed.

11.5 Migratory Bird Protection:

- To reduce the possibility of contravention of the MBCA, vegetation removal should be scheduled to occur outside of the overall bird nesting season of March 31 to August 31. Some birds may nest before and after this peak bird nesting season due to annual seasonal fluctuations. If a nest of a migratory bird is found within the construction area outside of this nesting period, it still receives protection.
- If vegetation must be removed during the overall bird nesting season:
    - Nest and nesting activity searches will be conducted in areas defined as simple habitat by a qualified Biologist no more than 24 hours prior to vegetation removal. Nesting activity will be documented when it consists of confirmed breeding evidence, as defined by OBBA criteria (Cadman 2009).
    - If an active nest or confirmed nesting activity of a migratory bird is observed in simple habitat, regardless of the timing window recommended, a species-specific buffer area following ECCC guidelines will be applied to the nest or confirmed nesting activity wherein no vegetation removal will be permitted until the young have fledged from the nest. The radius of the buffer will depend on species, level of disturbance and landscape context

(ECCC 2018), which will be confirmed by a qualified Biologist, but will protect a minimum of 10 m around the nest or nesting activity.
    - The results of all nest searches will be documented at the end of each survey day in a Technical Memorandum, including information on the searcher, date, time conducted, weather conditions, habitat type, vegetation community type, observations of breeding activity, observations of confirmed nests including co-ordinates, and, if required, the buffer applied to identified breeding/nesting sites.
- If vegetation removal must occur in complex habitats within the above-listed timing windows and absolutely cannot be avoided, the same Best Management Practices (BMPs) such as nest and nesting activity searches described above will be undertaken.

12.0 Limitations of Assessment

It is our policy to attach the following clause regarding limitations. We do this to ensure that the client is aware of what is technically and professionally realistic in retaining trees.

The assessment of the trees presented in this report has been made using 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.

WSP Canada Inc.

Peter McNamara, BA
Senior Arborist | Landscape Designer
ISA Certified Arborist ON-1140A

APPENDIX A

Tree Protection Tables

Appendix A: Tree Preservation Tables

Project: Langstaff Road EA **Field Work Completed By: Peter McNamara & Zeev Rajman**

Date of Field Work: November 8 & 21, 2017

Tree Condition Assessment Criteria:

TI - Trunk Integrity: assessment of the trunk for any defects or weaknesses.
CS - Canopy Structure: assessment of scaffold branches, unions and canopy
CV - Canopy vigour: assessment of the health of the tree, based on the % of deadwood, disease, pests & live crown

Tree Condition:

Good (G): tree displays less than 15% deficiency/defect within the given tree assessment criteria (TI,CS,CV)
Fair (F): tree displays 15-40% deficiency/defect within the given tree assessment criteria (TI,CS,CV)
Poor (P): tree displays greater than 40% deficiency/defect within the given tree assessment criteria (TI,CS,CV)

Legend:

Trees to be Removed - Construction
Trees to be Removed - Health
Minimum TPZ encroachment / Mitigation Measures
Tree location
Tree to be Transplanted
Tree to be Pruned

Tree #	Botanical Name	Common Name	Qty.	DBH (cm)	TI	CS	CV	Dripline Radius (m)	Height (m)	Tree Location / Applicable By-law	Tree Protection Zone (m)	York Region Condition Rating	York Region % for Compensation	Recommendation	Comments - Health	Comments - Removal/Preservation
Langstaff Road - Starting at Weston Road																
1	*Tilia cordata*	Littleleaf Linden	1	27	G	G	G	4		ROW	2.7	Good	100%	Remove		
2	*Picea glauca*	White Spruce	3	12/30/30	G	G	G	3		Private	2.4	Good	100%	Preserve	Lower canopy dieback.	
3	*Tilia cordata*	Littleleaf Linden	1	26	G	G	G	4		ROW	2.6	Good	100%	Remove		
4	*Tilia cordata*	Littleleaf Linden	1	24	G	G	G	4		ROW	2.4	Good	100%	Remove		
5	*Tilia cordata*	Littleleaf Linden	1	22.5	G	G	G	4		ROW	2.4	Good	100%	Remove		
6	*Tilia cordata*	Littleleaf Linden	1	27	F	G	G	4		ROW	2.4	Good	100%	Remove	Lean, exposed roots, girdle.	
7	*Catalpa speciosa*	Catalpa	1	-	-	-	-	-		-	-	-	-	-	Trees Have been removed	
8	*Quercus macrocarpa*	Bur Oak	1	-	-	-	-	-		-	-	-	-	-	Trees Have been removed	
TG-1	*Picea pungens*	Colorado Spruce	4	16-25	G	G	G	3		Private	1.8	Good	100%	Retain		
TG-1	*Picea pungens*	Colorado Spruce	2	16-25	G	G	G	3		Private	1.8	Good	100%	Preserve / Encroachment		
TG-1	*Picea glauca*	White Spruce	1	9	G	G	P	2		Private	1.2	Declining	40%	Retain		
TG-1	*Acer negundo*	Manitoba Maple	2	21/17	G	G	G	3		ROW	1.8	Good	100%	Remove		
9	*Gleditsia triacanthos*	Honeylocust	1	16	G	G	G	4		Private	1.8	Good	100%	Retain		
10	*Picea pungens*	Colorado Spruce	1	14	G	F	G	4		Private	1.8	Good	100%	Retain		
11	*Acer platanoides*	Norway Maple	1	18	G	G	G	4		Private	1.8	Good	100%	Retain	Form.	
12	*Acer platanoides*	Norway Maple	1	16	G	G	G	4		Private	1.8	Good	100%	Retain		
13	*Tilia cordata*	Littleleaf Linden	1	22	G	G	G	4		ROW	2.4	Good	100%	Remove		
14	*Tilia cordata*	Littleleaf Linden	1	23	F	G	G	4		ROW	2.4	Good	100%	Remove		
15	*Tilia cordata*	Littleleaf Linden	1	21	G	G	G	4		ROW	2.4	Good	100%	Remove	Slight lean.	
16	*Tilia cordata*	Littleleaf Linden	1	19	G	G	G	4		ROW	2.4	Good	100%	Remove		
17	*Tilia cordata*	Littleleaf Linden	1	20	G	G	G	4		ROW	2.4	Good	100%	Remove	Galls at base.	
18	*Catalpa speciosa*	Catalpa	1	11	G	G	G	3		ROW	2.4	Good	100%	Remove		
19	*Catalpa speciosa*	Catalpa	1	14	G	G	G	3		ROW	2.4	Good	100%	Remove		
20	*Gymnocladus dioicus*	Kentucky Coffeetree	1	12	G	G	G	3		ROW	2.4	Good	100%	Remove		
21	*Gymnocladus dioicus*	Kentucky Coffeetree	1	4,4	G	G	G	2		ROW	2.4	Good	100%	Remove	Co-dominant.	
22	*Picea pungens*	Colorado Spruce	4	12,19,26,27	G	G	G	3		Private	1.8	Good	100%	Retain		
22	*Syringa reticulata 'Ivory Sil*	Ivory Silk	1	21	G	G	G	4		Private	1.8	Good	100%	Retain		
23	*Quercus palustris*	Pin Oak	1	25	G	G	G	4		Private	1.8	Good	100%	Retain		
24	*Quercus palustris*	Pin Oak	1	26	G	G	G	4		Private	1.8	Good	100%	Retain		
25	*Picea pungens*	Colorado Spruce	3	16/21/16	G	G	G	4		Private	1.8	Good	100%	Retain		
26	*Quercus palustris*	Pin Oak	1	21	G	G	G	4		Private	1.8	Good	100%	Retain		

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Project: Langstaff Road EA **Field Work Completed By: Peter McNamara & Zeev Rajman**

Date of Field Work: November 8 & 21, 2017

Tree Condition Assessment Criteria:

TI - Trunk Integrity: assessment of the trunk for any defects or weaknesses.
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Legend:

Trees to be Removed - Construction
Trees to be Removed - Health
Minimum TPZ encroachment / Mitigation Measures
Tree location
Tree to be Transplanted
Tree to be Pruned

Tree #	Botanical Name	Common Name	Qty.	DBH (cm)	TI	CS	CV	Dripline Radius (m)	Height (m)	Tree Location / Applicable By-law	Tree Protection Zone (m)	York Region Condition Rating	York Region % for Compensation	Recommendation	Comments - Health	Comments - Removal/Preservation
27	*Quercus palustris*	Pin Oak	1	19	G	G	G	3		Private	1.8	Good	100%	Retain	10% dieback.	
28	*Picea pungens*	Colorado Spruce	1	21	G	G	G	3		Private	1.8	Good	100%	Retain	Poor form.	
29	*Picea pungens*	Colorado Spruce	1	21	G	G	G	3		Private	1.8	Good	100%	Retain	Poor form.	
30	*Quercus palustris*	Pin Oak	1	25	G	G	G	4		Private	1.8	Good	100%	Retain		
31	*Quercus palustris*	Pin Oak	1	25	G	G	G	4		Private	1.8	Good	100%	Retain		
32	*Picea pungens*	Colorado Spruce	1	24	G	G	G	4		Private	1.8	Good	100%	Retain		
32	*Picea pungens*	Colorado Spruce	1	24	G	G	G	4		Private	1.8	Good	100%	Retain		
33	*Quercus palustris*	Pin Oak	1	21	G	G	G	4		Private	1.8	Good	100%	Retain		
33	*Quercus palustris*	Pin Oak	1	27	G	G	G	4		Private	1.8	Good	100%	Retain		
34	*Picea pungens*	Colorado Spruce	3	24/26/24	G	G	G	3		Private	1.8	Good	100%	Retain		
34	*Syringa reticulata 'Ivory Sil*	Ivory Silk	1	13	G	G	G	2.5		Private	1.8	Good	100%	Retain		
35	*Syringa reticulata 'Ivory Sil*	Ivory Silk	1	25	G	G	G	3.5		Private	1.8	Good	100%	Retain		
36	*Picea pungens*	Colorado Spruce	3	21/23/25	G	G	G	3		Private	1.8	Good	100%	Retain		
37	*Quercus palustris*	Pin Oak	1	24	G	G	G	3		Private	1.8	Good	100%	Retain		
37	*Quercus palustris*	Pin Oak	1	18	G	G	G	2.5		Private	1.8	Good	100%	Retain		
38	*Picea pungens*	Colorado Spruce	4	18/18/25/19	G	G	G	2.5		Private	1.8	Good	100%	Retain		
39	*Gleditsia triacanthos*	Honeylocust	1	15	G	G	G	2.5		ROW	2.4	Good	100%	Retain		
40	*Juglans nigra*	Black Walnut	1	8	G	G	G	2		ROW	2.4	Good	100%	Retain		
41	*Juglans nigra*	Black Walnut	1	17	G	G	G	3		ROW	2.4	Good	100%	Retain		
42	*Gleditsia triacanthos*	Honeylocust	1	5	G	G	G	1.5		ROW	2.4	Good	100%	Retain		
43	*Gleditsia triacanthos*	Honeylocust	1	7.5	G	G	G	1.5		ROW	2.4	Good	100%	Retain		
44	*Gymnocladus dioicus*	Kentucky Coffeetree	1	5.5	G	G	G	2		ROW	2.4	Good	100%	Retain		
45	*Gleditsia triacanthos*	Honeylocust	1	8	G	G	G	2		ROW	2.4	Good	100%	Retain		
46	*Gymnocladus dioicus*	Kentucky Coffeetree	1	7	G	G	G	2		ROW	2.4	Good	100%	Retain		
47	*Gleditsia triacanthos*	Honeylocust	1	6.5	G	G	G	2		ROW	2.4	Good	100%	Retain		
48	*Quercus macrocarpa*	Bur Oak	1	14	G	G	G	2		ROW	2.4	Good	100%	Retain		
49	*Quercus macrocarpa*	Bur Oak	1	14	G	G	G	2.5		ROW	2.4	Good	100%	Remove		
50	*Quercus macrocarpa*	Bur Oak	1	10	G	G	G	2		ROW	2.4	Good	100%	Remove		
TG-2	*Picea glauca*	White Spruce	1	10-25	G-F	G-F	G-F	3		Private	1.8	Satisfactory	80%	Retain		
TG-2	*Colyrus colurna*	Turkish Hazel	1	5-20	G-F	G-F	G-F	2.5		Private	1.8	Satisfactory	80%	Retain		
TG-2	*Picea pungens*	Colorado Spruce	1	10-25	G-F	G-F	G-F	2.5		Private	1.8	Satisfactory	80%	Retain		
51	*Quercus macrocarpa*	Bur Oak	1	14	G	G	G	2		ROW	2.4	Good	100%	Remove		

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Project: Langstaff Road EA **Field Work Completed By: Peter McNamara & Zeev Rajman**

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Legend:

Trees to be Removed - Construction
Trees to be Removed - Health
Minimum TPZ encroachment / Mitigation Measures
Tree location
Tree to be Transplanted
Tree to be Pruned

Tree #	Botanical Name	Common Name	Qty.	DBH (cm)	TI	CS	CV	Dripline Radius (m)	Height (m)	Tree Location / Applicable By-law	Tree Protection Zone (m)	York Region Condition Rating	York Region % for Compensation	Recommendation	Comments - Health	Comments - Removal/Preservation
52	*Quercus macrocarpa*	Bur Oak	1	15	G	G	G	2.5		ROW	2.4	Good	100%	Remove		
53	*Quercus macrocarpa*	Bur Oak	1	15	G	G	G	2.5		ROW	2.4	Good	100%	Remove		
54	*Quercus macrocarpa*	Bur Oak	1	14	G	G	G	2.5		ROW	2.4	Good	100%	Remove		
55	*Quercus macrocarpa*	Bur Oak	1	18.5	G	G	G	2.5		ROW	2.4	Good	100%	Remove		
56	*Gymnocladus dioicus*	Kentucky Coffeetree	1	13	G	G	G	2.5		ROW	2.4	Good	100%	Remove		
57	*Gymnocladus dioicus*	Kentucky Coffeetree	1	12	G	G	G	2.5		ROW	2.4	Good	100%	Remove		
58	*Gymnocladus dioicus*	Kentucky Coffeetree	1	15	G	G	G	2.5		ROW	2.4	Good	100%	Remove		
59	*Gymnocladus dioicus*	Kentucky Coffeetree	1	12.5	G	G	G	2.5		ROW	2.4	Good	100%	Remove		
60	*Gymnocladus dioicus*	Kentucky Coffeetree	1	11	G	G	G	2.5		ROW	2.4	Good	100%	Remove		
61	*Juglans nigra*	Black Walnut	1	10	G	G	G	3		ROW	2.4	Good	100%	Remove		
62	*Juglans nigra*	Black Walnut	1	8.5	G	G	G	2.5		ROW	2.4	Good	100%	Remove		
63	*Juglans nigra*	Black Walnut	1	9.5	G	G	G	2.5		ROW	2.4	Good	100%	Remove		
64	*Juglans nigra*	Black Walnut	1	8	G	G	G	2		ROW	2.4	Good	100%	Remove		
65	*Gleditsia triacanthos*	Honeylocust	1	4	G	G	G	2		ROW	2.4	Good	100%	Remove		
66	*Gleditsia triacanthos*	Honeylocust	1	4	G	G	G	2		ROW	2.4	Good	100%	Remove		
67	*Gleditsia triacanthos*	Honeylocust	1	5	G	G	G	2		ROW	2.4	Good	100%	Remove		
68	*Gleditsia triacanthos*	Honeylocust	1	4.5	G	G	G	2		ROW	2.4	Good	100%	Remove		
69	*Picea pungens*	Colorado Spruce	2	25/25	G	G	G	3		ROW	2.4	Good	100%	Retain		
70	*Acer platanoides*	Norway Maple	1	31	P	G	F	5		Private	2.4	Potential trouble	60%	Remove	Trunk wound, 30% dieback.	
71	*Acer platanoides*	Norway Maple	1	24	G	G	G	4		Private	1.8	Good	100%	Remove		
72	*Picea pungens*	Colorado Spruce	3	±30	G	G	G	4		ROW	2.4	Good	100%	Remove		
73	*Acer platanoides*	Norway Maple	1	32	G	G	G	4.5		Private	2.4	Good	100%	Remove		
74	*Picea pungens*	Colorado Spruce	2	22/28	G	G	G-P	4		Private	1.8	Potential trouble	60%	Retain	1 poor.	
75	*Acer platanoides*	Norway Maple	1	21	G	G	G	4		Private	1.8	Good	100%	Retain		
76	*Picea pungens*	Colorado Spruce	5	5	G	G	G-P	1.5		Private	1.2	Potential trouble	60%	Retain	2 poor.	
77	*Acer platanoides*	Norway Maple	1	2	G	G	G	1		Private	1.2	Good	100%	Remove		
78	*Acer platanoides*	Norway Maple	1	31	G	G	G	5		Private	2.4	Good	100%	Remove		
79	*Picea pungens*	Colorado Spruce	2	22/24	G	F	P	4		Private	1.8	Potential trouble	60%	Retain		
80	*Picea pungens*	Colorado Spruce	3	28/30	G	G	G-F	4		Private	1.8	Good	100%	Preserve / Encroachment		
81	*Acer platanoides*	Norway Maple	1	27	G	G	G	5			1.8	Good	100%	Retain		
82	*Acer platanoides*	Norway Maple	1	21	G	G	G	4			1.8	Good	100%	Retain		
83	*Picea pungens*	Colorado Spruce	2	22,24	G	G	G	4		Private	1.8	Good	100%	Preserve		

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Tree location
Tree to be Transplanted
Tree to be Pruned

Tree #	Botanical Name	Common Name	Qty.	DBH (cm)	TI	CS	CV	Dripline Radius (m)	Height (m)	Tree Location / Applicable By-law	Tree Protection Zone (m)	York Region Condition Rating	York Region % for Compensation	Recommendation	Comments - Health	Comments - Removal/Preservation
84	*Picea pungens*	Colorado Spruce	4	25-30	G	G	G	4		Private	2.4	Good	100%	Preserve		
85	*Gymnocladus dioicus*	Kentucky Coffeetree	1	9	G	G	G	1		ROW	2.4	Good	100%	Remove		
86	*Gymnocladus dioicus*	Kentucky Coffeetree	1	8	G	G	G	1		ROW	2.4	Good	100%	Remove		
87	*Gymnocladus dioicus*	Kentucky Coffeetree	1	10	G	G	G	1		ROW	2.4	Good	100%	Remove		
88	*Quercus macrocarpa*	Bur Oak	1	9	G	G	P	1		ROW	2.4	Declining	40%	Remove		
89	*Quercus macrocarpa*	Bur Oak	1	20	G	G	G	3		ROW	2.4	Good	100%	Remove		
90	*Quercus macrocarpa*	Bur Oak	1	10	G	G	P	2		ROW	2.4	Declining	40%	Remove		
91	*Quercus macrocarpa*	Bur Oak	1	13	G	G	G	2		ROW	2.4	Good	100%	Remove		
92	*Juglans nigra*	Black Walnut	1	10	G	G	G	3		ROW	2.4	Good	100%	Remove		
93	*Juglans nigra*	Black Walnut	1	11	G	G	G	3		ROW	2.4	Good	100%	Remove		
94	*Juglans nigra*	Black Walnut	1	9.5	G	G	G	3		ROW	2.4	Good	100%	Remove		
95	*Aesculus glabra*	Ohio Buckeye	1	6	G	G	G	2		ROW	2.4	Good	100%	Remove		
96	*Catalpa speciosa*	Catalpa	1	15	F	G	G	2.5		ROW	2.4	Good	100%	Remove	Lean.	
97	*Aesculus glabra*	Ohio Buckeye	1	6	G	G	G	2		ROW	2.4	Good	100%	Remove		
98	*Picea pungens*	Colorado Spruce	1	±25	G	G	G	3		Private	1.8	Good	100%	Retain		
99	*Picea pungens*	Colorado Spruce	1	±25	G	G	G	3		Private	1.8	Good	100%	Retain		
100	*Acer platanoides*	Norway Maple	1	30	G	G	G	5		Private	2.4	Good	100%	Preserve / Encroachment		
101	*Acer platanoides*	Norway Maple	1	22.5	G	G	G	4		Private	1.8	Good	100%	Remove		
102	*Picea glauca*	White Spruce	2	20-25	G	G	F	4		Private	1.8	Potential trouble	60%	Preserve / Encroachment		
103	*Acer platanoides*	Norway Maple	1	27	G	G	G	5		Private	1.8	Good	100%	Remove	Mechanical trunk wound.	
104	*Picea glauca*	White Spruce	1	25	G	G	G	4		Private	1.8	Good	100%	Retain		
TG-3	*Picea pungens*	Colorado Spruce	13	20-28	G	G	G	4		Private	1.8	Good	100%	Retain		
TG-3	*Gleditsia triacanthos*	Honeylocust	4	20-35	G	G	G	5		Private	2.4	Good	100%	Retain		
105	*Gymnocladus dioicus*	Kentucky Coffeetree	1	11	F	G	G	2		ROW	2.4	Good	100%	Remove	Corrected lean.	
106	*Gymnocladus dioicus*	Kentucky Coffeetree	1	15	G	G	G	2		ROW	2.4	Good	100%	Remove		
107	*Gymnocladus dioicus*	Kentucky Coffeetree	1	15	G	G	G	2		ROW	2.4	Good	100%	Remove		
108	*Gymnocladus dioicus*	Kentucky Coffeetree	1	15	G	G	G	2		ROW	2.4	Good	100%	Remove	Prune branch close to road.	
109	*Quercus macrocarpa*	Bur Oak	1	12	G	G	F	2		ROW	2.4	Satisfactory	80%	Remove		
110	*Catalpa speciosa*	Catalpa	1	16	G	G	G	3		ROW	2.4	Good	100%	Remove		
111	*Juglans nigra*	Black Walnut	1	10	G	G	G	2		ROW	2.4	Good	100%	Remove		
112	*Aesculus glabra*	Ohio Buckeye	1	6	G	G	G	1.5		ROW	2.4	Good	100%	Remove		
113	*Aesculus glabra*	Ohio Buckeye	1	5	G	G	G	1.5		ROW	2.4	Good	100%	Remove		

Appendix A: Tree Preservation Tables

Project: Langstaff Road EA **Field Work Completed By: Peter McNamara & Zeev Rajman**

Date of Field Work: November 8 & 21, 2017

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Legend:

Trees to be Removed - Construction
Trees to be Removed - Health
Minimum TPZ encroachment / Mitigation Measures
Tree location
Tree to be Transplanted
Tree to be Pruned

Tree #	Botanical Name	Common Name	Qty.	DBH (cm)	TI	CS	CV	Dripline Radius (m)	Height (m)	Tree Location / Applicable By-law	Tree Protection Zone (m)	York Region Condition Rating	York Region % for Compensation	Recommendation	Comments - Health	Comments - Removal/Preservation
114	*Acer platanoides*	Norway Maple	1	31/24	G	G	G	5		Private	2.4	Good	100%	Remove		
115	*Acer platanoides*	Norway Maple	1	12,32/42	F	G	G	6		Private	3	Good	100%	Remove	Unions.	
115	*Pinus nigra*	Austrian Pine	3	28/32/32	G	G	G	5		Private	1.8, 2.4	Good	100%	Remove		
116	*Acer platanoides*	Norway Maple	1	31	G	G	G	5		Private	2.4	Good	100%	Preserve / Encroachment		
117	*Picea pungens*	Colorado Spruce	1	36	G	G	G	4		Private	2.4	Good	100%	Preserve / Encroachment		
117	*Picea pungens*	Colorado Spruce	2	21,26	G	G	G	4		Private	1.8, 2.4	Good	100%	Remove		
118	*Ginkgo biloba*	Maidenhair Tree	1	15	G	G	G	3		Private	1.8	Good	100%	Preserve		
119	*Picea pungens*	Colorado Spruce	1	25	G	G	G	3		Private	1.8	Good	100%	Retain		
119	*Picea pungens*	Colorado Spruce	1	25	G	G	G	3		Private	1.8	Good	100%	Remove		
120	*Pinus nigra*	Austrian Pine	2	26/44	G	G	G	4		Private	1.8 to 2.4	Good	100%	Preserve		
121	*Picea pungens*	Colorado Spruce	3	25-30	G	F	F	4		Private	2.4	Satisfactory	80%	Preserve		
122	*Acer platanoides*	Norway Maple	1	43	G	G	G	6		Private	3	Good	100%	Preserve		
123	*Pinus nigra*	Austrian Pine	3	36/37/45	G	F	G	5		Private	2.4 to 3	Good	100%	Preserve		
123	*Acer platanoides*	Norway Maple	1	35/17	G	G	G	5		Private	2.4	Good	100%	Retain	Girdling roots.	
124	*Picea pungens*	Colorado Spruce	2	48/28	G	G	G	4		Private	3	Good	100%	Retain		
125	*Acer platanoides*	Norway Maple	1	40	G	G	G	6		Private	2.4	Good	100%	Retain		
126	*Acer platanoides*	Norway Maple	1	28	G	G	G	5		Private	1.8	Good	100%	Retain		
127	*Acer platanoides*	Norway Maple	1	29	G	G	G	5		Private	1.8	Good	100%	Retain		
128	*Acer platanoides*	Norway Maple	1	22	G	G	G	4		Private	1.8	Good	100%	Retain		
129	*Pinus sylvestris*	Scots Pine	3	40/18/46	G	G	G	4		Private	1.8 to 3	Good	100%	Retain		
130	*Acer platanoides*	Norway Maple	1	29	G	G	G	5		Private	1.8	Good	100%	Retain		
131 (113)	*Gymnocladus dioicus*	Kentucky Coffeetree	1	12	G	G	G	2		ROW	2.4	Good	100%	Remove		
132 (112)	*Gymnocladus dioicus*	Kentucky Coffeetree	1	14	G	G	G	2		ROW	2.4	Good	100%	Remove		
133	*Gymnocladus dioicus*	Kentucky Coffeetree	1	14	G	G	G	2		ROW	2.4	Good	100%	Remove		
134	*Gymnocladus dioicus*	Kentucky Coffeetree	1	13	G	G	G	2		ROW	2.4	Good	100%	Remove		
135	*Acer platanoides*	Norway Maple	1	19	G	G	G	4		ROW	2.4	Good	100%	Remove		
136	*Acer platanoides*	Norway Maple	1	11	G	G	G	2.5		ROW	2.4	Good	100%	Remove		
137	*Acer platanoides*	Norway Maple	1	10	G	G	G	2.5		ROW	2.4	Good	100%	Remove		
138	*Gleditsia triacanthos*	Honeylocust	1	4.5	G	G	G	1		ROW	2.4	Good	100%	Remove		
139	*Gleditsia triacanthos*	Honeylocust	1	4	G	G	G	1		ROW	2.4	Good	100%	Remove		
140	*Acer platanoides*	Norway Maple	1	24	G	G	G	5		ROW	2.4	Good	100%	Remove	Girdling roots.	
141	*Gleditsia triacanthos*	Honeylocust	1	5	G	G	G	1		ROW	2.4	Good	100%	Remove		

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Project: Langstaff Road EA **Field Work Completed By: Peter McNamara & Zeev Rajman**

Date of Field Work: November 8 & 21, 2017

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Legend:

Trees to be Removed - Construction
Trees to be Removed - Health
Minimum TPZ encroachment / Mitigation Measures
Tree location
Tree to be Transplanted
Tree to be Pruned

Tree #	Botanical Name	Common Name	Qty.	DBH (cm)	TI	CS	CV	Dripline Radius (m)	Height (m)	Tree Location / Applicable By-law	Tree Protection Zone (m)	York Region Condition Rating	York Region % for Compensation	Recommendation	Comments - Health	Comments - Removal/Preservation
TG-4	*Acer platanoides 'Crimson King'*	Crimson King Maple	4	20-25	G	G	G	5		Private	1.8	Good	100%	Retain		
TG-4	*Acer platanoides 'Crimson King'*	Crimson King Maple	1	25	G	G	P	5		Private	1.8	Declining	40%	Retain	poor.	
TG-4	*Tilia cordata*	Littleleaf Linden	3	20-25	G	G	G	5		Private	1.8	Good	100%	Retain		
TG-4	*Picea pungens*	Colorado Spruce	2	15/20	G	G	G	3		Private	1.8	Good	100%	Retain		
TG-4	*Acer platanoides*	Norway Maple	2	18-22	G	G	G	4		Private	1.8	Good	100%	Retain		
TG-5	*Acer platanoides 'Crimson King'*	Crimson King Maple	6	16-19	G	G	G	3		Private	1.8	Good	100%	Retain		
TG-5	*Picea pungens*	Colorado Spruce	2	±15	G	G	G	2		Private	1.8	Good	100%	Retain		
TG-5	*Acer platanoides*	Norway Maple	2	18-22	G	G	G	4		Private	1.8	Good	100%	Retain		
TG-6	*Acer platanoides 'Crimson King'*	Crimson King Maple	1	16-25	G	G	G	4		Private	1.8	Good	100%	Retain		
TG-6	*Picea glauca*	White Spruce	6	18-25	G	F	G-F	3		Private	1.8	Satisfactory	80%	Retain		
TG-6	*Fraxinus nigra*	Black Ash	8	8-40	F-P	F	F-P	5		Private	1.2 to 2.4	Potential trouble	60%	Retain	EAB.	
TG-6	*Acer platanoides*	Norway Maple	2	35/31	G	G	G	5		Private	2.4	Good	100%	Retain		
TG-6	*Picea pungens*	Colorado Spruce	1	18-25	G	G	G	4		Private	1.8	Good	100%	Retain		
TG-6	*Picea pungens*	Colorado Spruce	2	18-25	P	P	P	4		Private	1.8	Dead	0%	Retain	dead.	
TG-7	*Picea abies*	Norway Spruce	3	15-25	G	G-F	G-F	5		Private	1.8	Satisfactory	80%	Retain		
TG-7	*Picea abies*	Norway Spruce	6	15-25	G	G-F	G-F	5		Private	1.8	Satisfactory	80%	Remove		
TG-7	*Rhamnus spp.*	Buckthorn	±5	8-12	F	G	G	1		Private	1.2 to 1.8	Good	100%	Preserve		
TG-7	*Rhamnus spp.*	Buckthorn	1	8-12	F	G	G	1		Private	1.2 to 1.8	Good	100%	Retain		
TG-8	*Picea glauca*	White Spruce	4	15-20	G	G-F	G-F	3		Private	1.8	Satisfactory	80%	Preserve / Encroachment		
TG-8	*Picea glauca*	White Spruce	1	20	G	G-F	G-F	3		Private	1.8	Satisfactory	80%	Remove		
TG-8	*Acer platanoides 'Crimson King'*	Crimson King Maple	1	18-23	G	G	G	4		Private	1.8	Good	100%	Retain		
TG-8	*Acer platanoides 'Crimson King'*	Crimson King Maple	2	18-23	G	G	G	4		Private	1.8	Good	100%	Remove		
TG-8	*Tilia cordata*	Littleleaf Linden	1	25	G	G	G	4		Private	1.8	Good	100%	Remove		
TG-8	*Tilia cordata*	Littleleaf Linden	2	20-25	G	G	G	4		Private	1.8	Good	100%	Retain		
TG-8	*Acer platanoides*	Norway Maple	2	25/15	G	G	G	4		Private	1.8	Good	100%	Retain	1 poor.	
TG-8	*Elaeagnus angustifolia*	Russian Olive	1	18/25	F	F	G	4		Private	1.8	Satisfactory	80%	Retain		
142	*Gleditsia triacanthos*	Honeylocust	1	12	G	G	G	3		ROW	2.4	Good	100%	Remove		
143	*Gleditsia triacanthos*	Honeylocust	1	14	G	G	G	3		ROW	2.4	Good	100%	Remove		
144	*Syringa reticulata 'Ivory Silk'*	Ivory Silk	1	7	G	G	G	2		ROW	2.4	Good	100%	Remove		
145	*Syringa reticulata 'Ivory Silk'*	Ivory Silk	1	10	G	G	G	2		ROW	2.4	Good	100%	Remove	Exposed girdling roots.	
146	*Syringa reticulata 'Ivory Silk'*	Ivory Silk	1	7	G	G	G	2		ROW	2.4	Good	100%	Remove		
147	*Gleditsia triacanthos*	Honeylocust	1	10.5	G	G	G	3		ROW	2.4	Good	100%	Remove		

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Minimum TPZ encroachment / Mitigation Measures
Tree location
Tree to be Transplanted
Tree to be Pruned

Tree #	Botanical Name	Common Name	Qty.	DBH (cm)	TI	CS	CV	Dripline Radius (m)	Height (m)	Tree Location / Applicable By-law	Tree Protection Zone (m)	York Region Condition Rating	York Region % for Compensation	Recommendation	Comments - Health	Comments - Removal/Preservation
148	*Syringa reticulata 'Ivory Silk'*	Ivory Silk	1	7.5	G	G	G	2		ROW	2.4	Good	100%	Remove		
149	*Syringa reticulata 'Ivory Silk'*	Ivory Silk	1	7	G	G	G	2		ROW	2.4	Good	100%	Remove		
150	*Syringa reticulata 'Ivory Silk'*	Ivory Silk	1	6.5	G	G	G	2		ROW	2.4	Good	100%	Remove		
151	*Syringa reticulata 'Ivory Silk'*	Ivory Silk	1	6.5	P	G	G	2		ROW	2.4	Good	100%	Remove	Planted too high, exposed roots.	
152	*Pinus nigra*	Austrian Pine	2	28/28	G	G	G	4		ROW	2.8	Good	100%	Remove		
TG-9	*Quercus palustris*	Pin Oak	3	8-12	G	G	G	3		Private	1.8	Good	100%	Remove		
TG-9	*Prunus virginiana 'Schubert'*	Schubert Cherry	4	8-10	G	G	G	2		Private	1.8	Good	100%	Preserve		
TG-9	*Picea pungens*	Colorado Spruce	3	8-10	G	G	G	2		Private	1.8	Good	100%	Preserve		
TG-9	*Picea glauca*	White Spruce	2	8-10	G	G	G	2		Private	1.8	Good	100%	Preserve		
TG-10	*Quercus palustris*	Pin Oak	1	11	G	G	G	3		Private	1.8	Good	100%	Preserve		
TG-10	*Prunus virginiana 'Schubert'*	Schubert Cherry	3	6-10	G	G	G	3		Private	1.8	Good	100%	Preserve		
TG-10	*Picea pungens*	Colorado Spruce	5	9-11	G	G	G	3		Private	1.8	Good	100%	Preserve		
153	*Picea pungens*	Colorado Spruce	1	8	G	G	G	2		ROW	2.4	Good	100%	Retain		
154	*Quercus rubra*	Red Oak	1	7	G	G	G	2		Private	1.2	Good	100%	Retain		
155	*Acer saccharum*	Sugar Maple	1	7	G	G	G	2		Private	1.2	Good	100%	Retain		
156	*Quercus rubra*	Red Oak	1	7	G	G	G	2		Private	1.2	Good	100%	Retain		
157	*Quercus rubra*	Red Oak	1	6	P	G	G	2		Private	1.2	Good	100%	Retain	Lean.	
158	*Quercus rubra*	Red Oak	1	6	G	G	G	2		Private	1.2	Good	100%	Retain		
159	*Quercus rubra*	Red Oak	1	6	G	G	G	2		Private	1.2	Good	100%	Retain		
160	*Quercus rubra*	Red Oak	1	7	G	G	G	2		Private	1.2	Good	100%	Retain		
TG-11	*Acer saccharum*	Sugar Maple	7	6-8	G	G	G	2		ROW	2.4	Good	100%	Remove		
TG-11	*Acer saccharum*	Sugar Maple	6	6-8	G	G	G	2		ROW	2.4	Good	100%	Preserve		
TG-12	*Betula papyrifera*	White Birch	2	25/30	F	G	P	4		ROW	3.0	Potential trouble	60%	Remove		
TG-12	*Picea abies*	Norway Spruce	3	20-25	G	G	G	4		ROW	2.5	Good	100%	Remove		
TG-12	*Elaeagnus angustifolia*	Russian Olive	3	20-25	F	F	G	4		ROW	2.5	Satisfactory	80%	Remove		
TG-12	*Picea abies*	Norway Spruce	3	18/20	G	G	G	4		ROW	2.4	Good	100%	Remove		
TG-12	*Picea pungens var. 'Glauca'*	Colorado Blue Spruce	3	30/35	G	G	G	4		ROW	3.0 to 3.5	Good	100%	Remove		
TG-13	*Picea pungens var. 'Glauca'*	Colorado Blue Spruce	3	25-30	G	G	G	4		ROW	2.5 to 3.0	Good	100%	Remove		
TG-13	*Acer saccharum*	Sugar Maple	2	25-30	G	G	G	6		ROW	2.5 to 3.0	Good	100%	Remove		
161	*Populus alba 'Pyramidalis'*	Pyramidal White Poplar	1	45	G	F	P	3		ROW	4.5	Declining	40%	Remove		
162	*Populus alba 'Pyramidalis'*	Pyramidal White Poplar	1	47	G	G	F	3		ROW	4.7	Satisfactory	80%	Remove		
163	*Populus alba 'Pyramidalis'*	Pyramidal White Poplar	1	50	G	G	F	3		ROW	5.0	Satisfactory	80%	Remove		

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Trees to be Removed - Health
Minimum TPZ encroachment / Mitigation Measures
Tree location
Tree to be Transplanted
Tree to be Pruned

Tree #	Botanical Name	Common Name	Qty.	DBH (cm)	TI	CS	CV	Dripline Radius (m)	Height (m)	Tree Location / Applicable By-law	Tree Protection Zone (m)	York Region Condition Rating	York Region % for Compensation	Recommendation	Comments - Health	Comments - Removal/Preservation
164	*Populus alba 'Pyramidalis'*	Pyramidal White Poplar	1	44	G	G	F	3		ROW	4.4	Satisfactory	80%	Remove		
165	*Populus alba 'Pyramidalis'*	Pyramidal White Poplar	1	50	G	G	F	3		ROW	5.0	Satisfactory	80%	Remove		
166	*Acer saccharum*	Sugar Maple	1	45	G	G	G	7		Private	3	Good	100%	Retain		
167	*Pinus sylvestris*	Scots Pine	1	20	F	G	F	3		Private	1.8	Satisfactory	80%	Retain	Lean, union.	
168	*Acer saccharum*	Sugar Maple	1	25	G	G	G	5		Private	1.8	Good	100%	Retain		
TG-14	*Picea pungens var. 'Glauca'*	Colorado Blue Spruce	6	20-25	G	G	G	4		Private	1.8	Good	100%	Remove		
TG-14	*Acer platanoides*	Norway Maple	6	15/18/20/22/28/18	G-F	G	G	5		Private	1.8	Good	100%	Remove	1 leaning.	
169	*Acer platanoides*	Norway Maple	1	21	G	G	G	4		Private	1.8	Good	100%	Retain		
170	*Picea pungens var. 'Glauca'*	Colorado Blue Spruce	3	20-25	G	G	G	4		Private	1.8	Good	100%	Preserve / Encroachment		
171	*Acer platanoides*	Norway Maple	3	24/20/20	G	G	G	4		Private	1.8	Good	100%	Remove		
172	*Pinus nigra*	Austrian Pine	3	20-25	G-F	G	G	4		Private	1.8	Good	100%	Remove	1 leaning.	
173	*Acer campestre*	Hedge Maple	1	12	G	G	G	2		Private	1.8	Good	100%	Preserve / Encroachment		
174	*Picea pungens var. 'Glauca'*	Colorado Blue Spruce	1	20	G	G	G	3		Private	1.8	Good	100%	Retain		
175	*Acer platanoides 'Crimson King'*	Crimson King Maple	2	22/18	G	G	G	4		Private	1.8	Good	100%	Retain		
176	*Acer platanoides 'Crimson King'*	Crimson King Maple	2	22/22	G	G	G	4		Private	1.8	Good	100%	Retain		
177	*Picea pungens var. 'Glauca*	Colorado Blue Spruce	5	<10	G	G	G	4		Private	1.2	Good	100%	Retain		
178	*Ulmus japonica x wilsonia 'Morton'*	Accolade Elm	4	8-10	G	G	G	2		Private	1.8	Good	100%	Retain		
179	*Picea pungens var. 'Glauca*	Colorado Blue Spruce	5	<10	G	G	G	1		Private	1.2	Good	100%	Retain		
180	*Acer platanoides 'Crimson King'*	Crimson King Maple	2	24/24	G	G	G	5		Private	1.8	Good	100%	Retain		
181	*Acer platanoides 'Crimson King'*	Crimson King Maple	2	18-20	G	G	G	4		Private	1.8	Good	100%	Retain		
181	*Acer platanoides 'Crimson King'*	Crimson King Maple	1	18-20	G	G	G	4		Private	1.8	Good	100%	Remove		
182	*Pinus nigra*	Austrian Pine	1	18-22	G	G	G	4		Private	1.8	Good	100%	Preserve		
182	*Pinus nigra*	Austrian Pine	3	18-22	G	G	G	4		Private	1.8	Good	100%	Remove		
183	*Picea pungens*	Colorado Spruce	3	18-24	G	G	G	4		Private	1.8	Good	100%	Remove		
184	*Juniperus virginiana*	Red Cedar	1	12	G	G	G	2		Private	1.8	Good	100%	Remove		
184	*Pinus nigra*	Austrian Pine	2	27-32	G	G	G	4		Private	2.4	Good	100%	Remove		
185	*Picea pungens var. 'Glauca'*	Colorado Blue Spruce	2	<10	G	G	G	1		Private	1.2	Good	100%	Retain		
186	*Quercus macrocarpa*	Bur Oak	7	10-17	G	G	G	2		Private	1.8	Good	100%	Retain		
187	*Gleditsia triacanthos*	Honeylocust	3	12/11/11	G	G	G	3		Private	1.8	Good	100%	Remove		
188	*Syringa reticulata 'Ivory Silk'*	Ivory Silk	1	9	G	G	G	2		Private	1.2	Good	100%	Retain		
189	*Acer platanoides*	Norway Maple	1	29	G	G	G	5		Private	1.8	Good	100%	Remove		
190	*Malus spp.*	Crabapple	1	7	G	G	G	1		ROW	2.4	Good	100%	Remove		

Appendix A: Tree Preservation Tables

Project: Langstaff Road EA **Field Work Completed By: Peter McNamara & Zeev Rajman**

Date of Field Work: November 8 & 21, 2017

Tree Condition Assessment Criteria:

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Legend:

Trees to be Removed - Construction

Trees to be Removed - Health

Minimum TPZ encroachment / Mitigation Measures

Tree location

Tree to be Transplanted

Tree to be Pruned

Tree #	Botanical Name	Common Name	Qty.	DBH (cm)	TI	CS	CV	Dripline Radius (m)	Height (m)	Tree Location / Applicable By-law	Tree Protection Zone (m)	York Region Condition Rating	York Region % for Compensation	Recommendation	Comments - Health	Comments - Removal/Preservation
191	*Picea pungens var. 'Glauca'*	Colorado Blue Spruce	3	20-26	G	G	G	4		Private	1.8	Good	100%	Remove		
192	*Malus spp.*	Crabapple	1	7	G	G	G	1		ROW	2.4	Good	100%	Remove		
193	*Acer platanoides*	Norway Maple	1	20	G	G	G	4		Private	1.8	Good	100%	Remove		
194	*Acer platanoides*	Norway Maple	1	28	G	G	G	4		Private	1.8	Good	100%	Retain		
195	*Malus spp.*	Crabapple	1	6	G	G	G	1		ROW	2.4	Good	100%	Remove		
196	*Acer campestre*	Hedge Maple	1	9	G	G	G	1		ROW	2.4	Good	100%	Remove		
197	*Ginkgo biloba*	Maidenhair Tree	1	20	G	G	G	3		Private	1.8	Good	100%	Remove		
198	*Picea pungens*	Colorado Spruce	1	28	G	G	G	3		Private	1.8	Good	100%	Retain		
199	*Acer negundo*	Manitoba Maple	3	18-22	G	G	G	4		Private	1.8	Good	100%	Preserve / Encroachment		
199	*Pinus nigra*	Austrian Pine	3	20-28	G	G	G	4		Private	2.4	Good	100%	Preserve / Encroachment		
199	*Picea pungens*	Colorado Spruce	1	22-30	G	G	G	4		Private	2.4	Good	100%	Preserve / Encroachment		
199	*Picea pungens*	Colorado Spruce	2	22-30	G	G	G	4		Private	2.4	Good	100%	Preserve		
200	*Acer campestre*	Hedge Maple	1	8	G	G	G	1		ROW	2.4	Good	100%	Remove		
201	*Prunus virginiana 'Schubert'*	Schubert Cherry	1	6	G	G	G	1		ROW	2.4	Good	100%	Remove		

Appendix A: Tree Preservation Tables

Project: Langstaff Road EA **Field Work Completed By: Peter McNamara & Zeev Rajman**

Date of Field Work: November 8 & 21, 2017

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Legend:

Trees to be Removed - Construction
Trees to be Removed - Health
Minimum TPZ encroachment / Mitigation Measures
Tree location
Tree to be Transplanted
Tree to be Pruned

Tree #	Botanical Name	Common Name	Qty.	DBH (cm)	TI	CS	CV	Dripline Radius (m)	Height (m)	Tree Location / Applicable By-law	Tree Protection Zone (m)	York Region Condition Rating	York Region % for Compensation	Recommendation	Comments - Health	Comments - Removal/Preservation
202	*Acer campestre*	Hedge Maple	2	10	G	G	G	2		ROW	2.4	Good	100%	Remove		
203	*Acer platanoides*	Norway Maple	1	20	G	G	G	4		Private	1.8	Good	100%	Retain		
203	*Pinus nigra*	Austrian Pine	2	20/35	G	G	G	4		Private	1.8 & 2.4	Good	100%	Retain		
203	*Picea glauca*	White Spruce	3	20-25	G	G	G	4		Private	1.8	Good	100%	Retain		
203	*Malus spp.*	Crabapple	1	11	F	F	G	2		Private	1.8	Satisfactory	80%	Retain	Lean, trunk wounds.	
204	*Prunus virginiana 'Schubert'*	Schubert Cherry	1	6	G	G	G	1		ROW	2.4	Good	100%	Remove		
205	*Prunus virginiana 'Schubert'*	Schubert Cherry	1	6	G	G	G	1		ROW	2.4	Good	100%	Remove		
TG-15	*Pinus nigra*	Austrian Pine	10	15-35	G-F	G-F	G-F	4		Private	1.8 to 2.4	Satisfactory	80%	Retain		
TG-15	*Acer platanoides*	Norway Maple	10	20-45	G	G	G	6		Private	1.8 to 3.0	Good	100%	Retain		
TG-15	*Picea glauca*	White Spruce	5	15-31	G	G	G	4		Private	1.8 to 2.4	Good	100%	Retain	2 dead.	
206	*Prunus virginiana 'Schubert'*	Schubert Cherry	1	11	G	G	G	2		ROW	2.4	Good	100%	Remove		
207	*Prunus virginiana 'Schubert'*	Schubert Cherry	1	6	G	G	G	1		ROW	2.4	Good	100%	Remove		
208	*Acer campestre*	Hedge Maple	1	5	G	G	F	1		ROW	2.4	Satisfactory	80%	Remove		
209	*Acer campestre*	Hedge Maple	1	6	G	G	G	1		ROW	2.4	Good	100%	Remove		
210	*Acer campestre*	Hedge Maple	1	12	G	G	G	2		ROW	2.4	Good	100%	Remove		
211	*Acer campestre*	Hedge Maple	1	10	G	G	G	2		ROW	2.4	Good	100%	Remove		
212	*Syringa reticulata 'Ivory Silk'*	Ivory Silk	1	4.5	G	G	G	2		ROW	2.4	Good	100%	Remove		
213	*Syringa reticulata 'Ivory Silk'*	Ivory Silk	1	6	G	G	G	1		ROW	2.4	Good	100%	Remove		
214	*Syringa reticulata 'Ivory Silk'*	Ivory Silk	1	6	G	G	G	1		ROW	2.4	Good	100%	Remove		
215	*Syringa reticulata 'Ivory Silk'*	Ivory Silk	1	7	G	G	G	1		ROW	2.4	Good	100%	Remove		
216	*Syringa reticulata 'Ivory Silk'*	Ivory Silk	1	8	G	G	G	1		ROW	2.4	Good	100%	Remove		
217	*Prunus virginiana 'Schubert'*	Schubert Cherry	1	9	G	G	G	1.5		ROW	2.4	Good	100%	Remove		
218	*Syringa reticulata 'Ivory Silk'*	Ivory Silk	1	6	G	G	G	1.5		ROW	2.4	Good	100%	Remove		
TG-16	*Pinus nigra*	Austrian Pine	3	30-35	G	G	G	4		Private	2.4	Good	100%	Preserve		
TG-16	*Gleditsia triacanthos*	Honeylocust	3	20-43	G	G	G	6		Private	1.8 to 3.0	Good	100%	Remove		
TG-16	*Gleditsia triacanthos*	Honeylocust	3	20-43	G	G	G	6		Private	1.8 to 3.0	Good	100%	Preserve		
TG-16	*Fagus sylvatica*	European Beech	1	14	G	G	G	2		Private	1.8	Good	100%	Remove		
TG-16	*Picea pungens*	Colorado Spruce	5	24-32	G	G-F	G	3.5		Private	1.8 to 2.4	Good	100%	Preserve		
TG-16	*Picea pungens*	Colorado Spruce	1	24-32	G	G-F	G	3.5		Private	1.8 to 2.4	Good	100%	Remove		
219	*Acer ginnala*	Amur Maple	1	7	G	G	G	1		ROW	2.4	Good	100%	Remove		
220	*Acer ginnala*	Amur Maple	1	7	G	F	P	1		ROW	2.4	Potential trouble	60%	Remove		

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Project: Langstaff Road EA **Field Work Completed By: Peter McNamara & Zeev Rajman**

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Legend:

Trees to be Removed - Construction
Trees to be Removed - Health
Minimum TPZ encroachment / Mitigation Measures
Tree location
Tree to be Transplanted
Tree to be Pruned

Tree #	Botanical Name	Common Name	Qty.	DBH (cm)	TI	CS	CV	Dripline Radius (m)	Height (m)	Tree Location / Applicable By-law	Tree Protection Zone (m)	York Region Condition Rating	York Region % for Compensation	Recommendation	Comments - Health	Comments - Removal/Preservation
221	*Prunus sargentii*	Sargent Cherry	1	7	G	F	P	1		ROW	2.4	Potential trouble	60%	Remove		
221	*Quercus rubra*	Red Oak	1	26	G	G	G	5		ROW	2.4	Good	100%	Remove		
222	*Picea pungens*	Colorado Spruce	1	34	G	G	G	4			2.4	Good	100%	Retain		
223	*Tilia cordata*	Littleleaf Linden	1	34	F	G	G	5			2.4	Good	100%	Retain	Lean.	
224	*Tilia cordata*	Littleleaf Linden	1	31	G	G	G	5			2.4	Good	100%	Retain		
225	*Prunus sargentii*	Sargent Cherry	1	8	F	F	F	1		ROW	2.4	Satisfactory	80%	Remove	Suckers.	
226	*Acer campestre*	Hedge Maple	1	8	G	G	G	1		ROW	2.4	Good	100%	Remove	Twigs look corky like Q. Robur.	
227	*Acer campestre*	Hedge Maple	1	9	G	G	G	1		ROW	2.4	Good	100%	Remove		
228	*Acer campestre*	Hedge Maple	1	8	G	G	G	1		ROW	2.4	Good	100%	Remove		
229	*Acer campestre*	Hedge Maple	1	7	G	G	G	1		ROW	2.4	Good	100%	Remove		
230	*Acer campestre*	Hedge Maple	1	8	G	G	G	1		ROW	2.4	Good	100%	Remove		
231	*Acer campestre*	Hedge Maple	1	8	G	G	G	1		ROW	2.4	Good	100%	Remove		
232	*Picea pungens*	Colorado Spruce	2	38/38	G	G	G	4		Private	2.4	Good	100%	Retain		
233	*Tilia cordata*	Littleleaf Linden	1	32	F	G	G	5		Private	2.4	Good	100%	Retain	Lean, suckers.	
234	*Tilia cordata*	Littleleaf Linden	1	22	F	G	G	4		Private	1.8	Good	100%	Retain	Lean.	
235	*Picea pungens var. 'Glauca*	Colorado Blue Spruce	1	28	G	G	G	4		Private	1.8	Good	100%	Retain		
236	*Pyrus spp.*	Ornamental Pear	1	11	G	G	G	2		ROW	2.4	Good	100%	Remove		
237	*Acer campestre*	Hedge Maple	1	9	G	G	G	1		ROW	2.4	Good	100%	Remove		
238	*Prunus sargentii*	Sargent Cherry	1	13	G	G	G	2		ROW	2.4	Good	100%	Remove		
239	*Acer campestre*	Hedge Maple	1	9	G	G	G	1		ROW	2.4	Good	100%	Remove		
240	*Acer campestre*	Hedge Maple	1	11	G	G	G	2		ROW	2.4	Good	100%	Remove		
TG-17	*Thuja occidentalis*	Eastern White Cedar	12	<10	G	G	G	1		Private	1.2	Good	100%	Preserve / Encroachment	Juniper and shrubs.	
TG-17	*Thuja occidentalis*	Eastern White Cedar	8	<10	G	G	G	1		Private	1.2	Good	100%	Retain	Juniper and shrubs.	
TG-17	*Picea glauca*	White Spruce	3	11/15/18	G	G	G	2		Private	1.8	Good	100%	Preserve / Encroachment		
TG-17	*Picea pungens*	Colorado Spruce	1	18	G	G	G	2		Private	1.8	Good	100%	Preserve / Encroachment		
241	*Acer platanoides*	Norway Maple	3	18-21	G	G	G	3		Private	1.8	Good	100%	Retain		
242	*Acer platanoides*	Norway Maple	2	19/22	G	G	G	4		Private	1.8	Good	100%	Retain		
243	*Acer platanoides*	Norway Maple	1	18	G	G	G	4		Private	1.8	Good	100%	Remove		encroachment into TPZ. Mitigate through hydro-vacuum excavation
243	*Acer platanoides*	Norway Maple	2	18-21	G	G	G	4		Private	1.8	Good	100%	Retain		encroachment into TPZ. Mitigate through hydro-vacuum excavation
244	*Abies concolor*	White Fir	1	22-23	G	G	G	2.5		Private	1.8	Good	100%	Preserve / Encroachment		
244	*Abies concolor*	White Fir	2	22-23	G	G	G	2.5		Private	1.8	Good	100%	Retain		
245	*Prunus sargentii*	Sargent Cherry	1	7	G	F	F	1		ROW	2.4	Satisfactory	80%	Remove		

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Trees to be Removed - Health
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Tree #	Botanical Name	Common Name	Qty.	DBH (cm)	TI	CS	CV	Dripline Radius (m)	Height (m)	Tree Location / Applicable By-law	Tree Protection Zone (m)	York Region Condition Rating	York Region % for Compensation	Recommendation	Comments - Health	Comments - Removal/Preservation
246	*Acer campestre*	Hedge Maple	1	13	G	G	G	2		ROW	2.4	Good	100%	Remove		
247	*Acer campestre*	Hedge Maple	1	8	G	G	G	1		ROW	2.4	Good	100%	Remove		
248	*Acer campestre*	Hedge Maple	1	6	G	G	G	1		ROW	2.4	Good	100%	Remove		
249	*Acer saccharum*	Sugar Maple	1	6	G	G	F	1		ROW	2.4	Good	100%	Remove		
TG-18	*Syringa vulgaris*	Common Lilac	17	<10	G-F	G-F	G	1		ROW	2.4	Satisfactory	80%	Remove		
TG-18	*Prunus virginiana*	Chokecherry	5	<10	G-F	G-F	G	1		ROW	2.4	Satisfactory	80%	Remove		
TG-18	*Picea pungens*	Colorado Spruce	5	20-25	G	G	G-F	3		Private	1.8	Satisfactory	80%	Retain		
TG-18	*Picea pungens*	Colorado Spruce	2	20-25	P	P	P	3		Private	1.8	Dead	0%	Retain	dead.	
TG-18	*Picea glauca*	White Spruce	5	20-25	G	G	G-F	3		Private	1.8	Satisfactory	80%	Retain		
TG-18	*Gleditsia triacanthos*	Honeylocust	6	23-28	G	G	G	5		Private	1.8	Good	100%	Retain		
TG-18	*Acer campestre*	Hedge Maple	11	9/8	G	G	G	1		Private	1.2	Good	100%	Retain		
TG-18	*Acer campestre*	Hedge Maple	1	13	G	G	G	1.5		Private	1.8	Good	100%	Retain		
TG-18	*Acer campestre*	Hedge Maple	3	11-13	G	G	G	1.5		Private	1.8	Good	100%	Remove		
TG-18	*Prunus sargentii*	Sargent Cherry	1	12	G	G	G	2		Private	1.8	Good	100%	Retain		
250	*Picea pungens*	Colorado Spruce	1	24	G	G	G	2.5		ROW	2.4	Good	100%	Remove		
251	*Pyrus spp.*	Ornamental Pear	1	10	G	F	F	1		ROW	2.4	Good	100%	Remove		
252	*Pyrus spp.*	Ornamental Pear	1	13	G	G	G	1		ROW	2.4	Good	100%	Remove		
253	*Pyrus spp.*	Ornamental Pear	1	12	G	F	F	1		ROW	2.4	Satisfactory	80%	Remove		
254	*Elaeagnus angustifolia*	Russian Olive	2	8-22	F	F	G	2.5		ROW	2.4	Satisfactory	80%	Retain		
255	*Gleditsia triacanthos*	Honeylocust	1	26	G	G	G	4		Private	1.8	Good	100%	Retain		
256	*Pinus nigra*	Austrian Pine	1	22	G	G	G	3		Private	1.8	Good	100%	Retain		
257	*Gleditsia triacanthos*	Honeylocust	1	24	G	G	G	4		Private	1.8	Good	100%	Retain		
258	*Pinus nigra*	Austrian Pine	1	24	G	G	G	3		Private	1.8	Good	100%	Retain		
259	*Acer platanoides*	Norway Maple	1	21	G	G	G	4		Private	1.8	Good	100%	Retain		
260	*Acer platanoides*	Norway Maple	1	21	G	G	G	4		Private	1.8	Good	100%	Retain		
261	*Prunus sargentii*	Sargent Cherry	3	6-7	G	G	G	1		ROW	2.4	Good	100%	Retain	Dwarf.	
262	*Picea pungens*	Colorado Spruce	2	19/21	G	G	G	3		Private	1.8	Good	100%	Retain		
263	*Acer campestre*	Hedge Maple	1	12/14	G-F	G	G	2.5		ROW	1.8	Good	100%	Retain		
264	*Acer campestre*	Hedge Maple	1	14	F	F	P	2		ROW	2.4	Declining	40%	Preserve / Encroachment		
265	*Acer campestre*	Hedge Maple	1	14	F	F	P	2		ROW	2.4	Declining	40%	Remove	Vertical crack on middle stem.	
TG-19	*Picea glauca*	White Spruce	1	20	G	G	G	3		Private	1.8	Good	100%			
TG-19	*Pinus nigra*	Austrian Pine	1	22	G	G	G	3		Private	1.8	Good	100%			

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Trees to be Removed - Health
Minimum TPZ encroachment / Mitigation Measures
Tree location
Tree to be Transplanted
Tree to be Pruned

Tree #	Botanical Name	Common Name	Qty.	DBH (cm)	TI	CS	CV	Dripline Radius (m)	Height (m)	Tree Location / Applicable By-law	Tree Protection Zone (m)	York Region Condition Rating	York Region % for Compensation	Recommendation	Comments - Health	Comments - Removal/Preservation
TG-19	*Pyrus spp.*	Ornamental Pear	3	15-19	G	G	G	2.5		Private	1.8	Good	100%			
266	*Picea pungens*	Colorado Spruce	1	29	G	G	G	4		Private	1.8	Good	100%	Remove		
267	*Picea pungens*	Colorado Spruce	1	27	G	G	G	4		Private	1.8	Good	100%	Remove		
268	*Acer platanoides*	Norway Maple	1	26	F	G	G	4		Private	2.4	Good	100%	Remove	Girdling roots.	
269	*Acer platanoides*	Norway Maple	1	30	G	G	G	5		Private	2.4	Good	100%	Remove		
270	*Acer platanoides*	Norway Maple	1	30	G	G	G	5		Private	2.4	Good	100%	Preserve / Encroachment		
271	*Acer platanoides*	Norway Maple	1	29	G	G	G	5		Private	1.8	Good	100%	Preserve		
272	*Acer platanoides*	Norway Maple	1	27	G	G	G	5		Private	1.8	Good	100%	Retain		
273	*Acer platanoides*	Norway Maple	1	25	G	G	G	5		Private	1.8	Good	100%	Retain		
274	*Acer platanoides*	Norway Maple	1	25	G	F	G	5		Private	1.8	Good	100%	Preserve		
275	*Pinus nigra*	Austrian Pine	2	34/40	G	G	G	5		Private	2.4	Good	100%	Retain		
TG-20	*Gleditsia triacanthos*	Honeylocust	2	4	G	G	G	1		Private	1.2	Good	100%	Retain		
TG-20	*Pinus nigra*	Austrian Pine	1	35	G	G	G	4		Private	2.4	Good	100%	Remove		
TG-20	*Acer platanoides*	Norway Maple	5	27-38	G	G	G	7		Private	1.8-2.4	Good	100%	Retain		
TG-20	*Acer saccharinum*	Silver Maple	3	15-25	G	G	G	6		Private	1.8	Good	100%	Remove		
TG-20	*Picea pungens var. 'Glauca'*	Colorado Blue Spruce	7	30-40	G	G	G	4		Private	2.4	Good	100%	Retain		
Langstaff Road - East of Keele Street																
1	*Syringa reticulata 'Ivory Silk'*	Ivory Silk Lilac	1	9	G	G	G	1		Private	1.2	Good	100%	Remove		
1	*Thuja occidentalis*	Eastern White Cedar	1	<10	G	G	G	1		ROW	2.4	Good	100%	Retain		
1	*Thuja occidentalis*	Eastern White Cedar	2	<10	G	G	G	1		ROW	2.4	Good	100%	Remove		
2	*Acer platanoides*	Norway Maple	1	32	G	G	G	5		ROW	3.2	Good	100%	Remove		
3	*Acer platanoides*	Norway Maple	1	26	G	G	G	4		ROW	2.6	Good	100%	Remove		
4	*Acer platanoides*	Norway Maple	1	35	F	G	G	4		ROW	3.5	Good	100%	Remove		
5	*Acer platanoides*	Norway Maple	1	36	F	G	G	5		ROW	3.6	Good	100%	Remove		
6	*Acer platanoides*	Norway Maple	1	30	G	G	G	5		ROW	3.0	Good	100%	Remove		
TG-1	*Rhus typhina*	Staghorn Sumac	8	<10	G	G	G	1		Private	1.2	Good	100%	Remove		
TG-1	*Fraxinus americna*	White Ash	1	<10	G	G	G	1		Private	1.2	Good	100%	Remove		
TG-1	*Quercus macrocarpa*	Bur Oak	3	10-20	G	G	G	2.5		Private	1.8	Good	100%	Remove		
TG-1	*Malus spp.*	Apple	1	<10	F	F	G	1		ROW	2.4	Satisfactory	80%	Remove		
TG-1	*Tilia americana*	Basswood	5	6-20	G-F	G-F	G	2.5		ROW	2.4	Satisfactory	80%	Remove		
TG-1	*Juglans nigra*	Black Walnut	1	<5	G	G	G	1		ROW	2.4	Good	100%	Remove		
TG-1	*Acer negundo*	Manitoba Maple	7	6-15	F	F	G	2.5		ROW	2.4	Satisfactory	80%	Remove		

Appendix A: Tree Preservation Tables

Project: Langstaff Road EA **Field Work Completed By: Peter McNamara & Zeev Rajman**

Date of Field Work: November 8 & 21, 2017

Tree Condition Assessment Criteria:

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Legend:

Trees to be Removed - Construction
Trees to be Removed - Health
Minimum TPZ encroachment / Mitigation Measures
Tree location
Tree to be Transplanted
Tree to be Pruned

Tree #	Botanical Name	Common Name	Qty.	DBH (cm)	TI	CS	CV	Dripline Radius (m)	Height (m)	Tree Location / Applicable By-law	Tree Protection Zone (m)	York Region Condition Rating	York Region % for Compensation	Recommendation	Comments - Health	Comments - Removal/Preservation
7	*Juglans nigra*	Black Walnut	1	11	G	G	G	2		Private	1.8	Good	100%	Remove		
TG-2	*Gleditsia triacanthos*	Honeylocust	2	42/43	G	G	G	6		Private	3	Good	100%	Remove		
TG-2	*Pinus nigra*	Austrian Pine	6	32-45	G	G	G	5		Private	3	Good	100%	Remove		
TG-2	*Pyrus spp.*	Pear	1	10-13	P	F	G	2		Private	1.8	Satisfactory	80%	Remove		
TG-2	*Prunus virginiana*	Chokecherry	4	<10	F	F	F	1		Private	1.2	Satisfactory	80%	Remove		
TG-2	*Acer negundo*	Manitoba Maple	1	11/12	F	G	G	2		Private	1.8	Good	100%	Remove		
8	*Acer saccharinum*	Silver Maple	1	34	G	G	G	5		Private	2.4	Good	100%	Remove		
9	*Picea pungens*	Colorado Spruce	1	23	F	G	G	3		Private	1.8	Good	100%	Remove		
9	*Picea pungens*	Colorado Spruce	1	18	F	G	G	3		ROW	2.4	Good	100%	Remove		
10	*Pinus nigra*	Austrian Pine	1	52	G	G	G	6		Private	3.6	Good	100%	Remove		
11	*Acer platanoides*	Norway Maple	1	32	F	G	G	6		Private	2.4	Good	100%	Remove		
12	*Picea pungens var. 'Glauca'*	Colorado Blue Spruce	1	35	G	G	G	4		ROW	3.5	Good	100%	Remove		
13	*Gleditsia triacanthos*	Honeylocust	1	16	G	G	G	4		ROW	2.4	Good	100%	Remove		
14	*Gleditsia triacanthos*	Honeylocust	1	37	G	G	G	6		Private	2.4	Good	100%	Remove		
15	*Acer platanoides*	Norway Maple	1	32	G	G	G	6		Private	2.4	Good	100%	Remove		
16	*Picea pungens var. 'Glauca'*	Colorado Blue Spruce	1	36	G	G	G	4		Private	2.4	Good	100%	Remove		
17	*Gleditsia triacanthos*	Honeylocust	1	32	G	G	P	6		Private	2.4	Declining	80%	Remove		
TG-3	*Picea pungens var. 'Glauca'*	Colorado Blue Spruce	2	35-37	G	G	G	4		Private	2.4	Good	100%	Remove		
TG-3	*Gleditsia triacanthos*	Honeylocust	1	40	G	G	F	6		Private	2.4	Satisfactory	80%	Remove		
TG-3	*Acer platanoides*	Norway Maple	1	25	G	F	G	5		Private	1.8	Good	100%	Remove		
TG-3	*Pinus nigra*	Austrian Pine	18	30-42	G	G	G	4		Private	3	Good	100%	Remove		
18	*Pinus nigra*	Austrian Pine	3	30-35	G	G	G	4		Private	2.4	Good	100%	Remove		
19	*Acer platanoides*	Norway Maple	2	35-38	G	G	G	4		Private	2.4	Good	100%	Retain		
19	*Acer platanoides*	Norway Maple	2	35-38	G	G	G	4		Private	2.4	Good	100%	Retain		
20	*Acer platanoides*	Norway Maple	3	34-46	G	G	G	4		Private	2.4-3	Good	100%	Retain		
21	*Acer platanoides*	Norway Maple	3	33-34	G	G	G	4		Private	2.4	Good	100%	Retain		
22	*Acer platanoides*	Norway Maple	3	22-35	G-F	G-F	G-F	4		Private	1.8-2.4	Satisfactory	80%	Preserve / Encroachment		
23	*Acer platanoides*	Norway Maple	2	23-30	G	G	G	4		Private	2.4	Good	100%	Preserve / Encroachment		
24	*Gleditsia triacanthos*	Honeylocust	3	32-35	G	G	G	5		Private	2.4	Good	100%	Remove		
25	*Pinus nigra*	Austrian Pine	3	25-40	F	G	G	4		Private	1.8-2.4	Good	100%	Remove		
26	*Pinus nigra*	Austrian Pine	5	25-30	G	G	G	4		Private	1.8-2.4	Good	100%	Remove		
27	*Pinus nigra*	Austrian Pine	2	30/35	G	G	G	4		Private	2.4	Good	100%	Retain		

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Project: Langstaff Road EA **Field Work Completed By: Peter McNamara & Zeev Rajman**

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Legend:

Trees to be Removed - Construction
Trees to be Removed - Health
Minimum TPZ encroachment / Mitigation Measures
Tree location
Tree to be Transplanted
Tree to be Pruned

Tree #	Botanical Name	Common Name	Qty.	DBH (cm)	TI	CS	CV	Dripline Radius (m)	Height (m)	Tree Location / Applicable By-law	Tree Protection Zone (m)	York Region Condition Rating	York Region % for Compensation	Recommendation	Comments - Health	Comments - Removal/Preservation
27	*Fraxinus americna*	White Ash	1	40,40	G	F	P	5		Private	2.4	Declining	40%	Retain		
28	*Tilia americana*	Basswood	2	30-35	G	G	G	5		Private	2.4	Good	100%	Retain		
28	*Pinus nigra*	Austrian Pine	3	30-40	G-F	G	G	5		Private	2.4	Good	100%	Retain		
28	*Picea pungens*	Colorado Spruce	1	25	G	G	G	4		Private	1.8	Good	100%	Retain		
29	*Pinus nigra*	Austrian Pine	6	30-35	G	G	G	5		Private	2.4	Good	100%	Retain		
29	*Corylus colurna*	Turkish Hazel	1	36,22	F	G	G	5		Private	2.4	Good	100%	Retain		
30	*Tilia americana*	Basswood	1	20,30,28	F	G	G	6		Private	2.4	Good	100%	Preserve		
31	*Pinus nigra*	Austrian Pine	2	38-42	G	G	G	5		Private	3	Good	100%	Preserve		
31	*Pinus nigra*	Austrian Pine	1	38-42	G	G	G	5		Private	3	Good	100%	Preserve / Encroachment		
31	*Betula papyrifera*	White Birch	2	12-24	F	G	G	3		Private	1.8	Good	100%	Preserve		
32	*Acer platanoides*	Norway Maple	1	15-22	F	G	G	4		Private	1.8	Good	100%	Remove		
32	*Betula papyrifera*	White Birch	3	15-19	F	G	G	3		Private	1.8	Good	100%	Retain		
32	*Acer saccharinum*	Silver Maple	1	31	F	G	G	5		Private	2.4	Good	100%	Remove		
32	*Acer saccharinum*	Silver Maple	1	23	F	G	G	5		Private	1.8	Good	100%	Preserve / Encroachment		
32	*Pinus sylvestris*	Scots Pine	4	21-33	G	G	F	4		Private	1.8-2.4	Good	100%	Retain		
32	*Acer platanoides*	Norway Maple	2	17-26	F	G	F	5		Private	1.8	Satisfactory	80%	Retain		
TG-4	*Pinus nigra*	Austrian Pine	19	-	-	-	-	-	-	-	-	-	-	-	Trees Have been removed	
TG-4	*Betula papyrifera*	White Birch	1	-	-	-	-	-	-	-	-	-	-	-	Trees Have been removed	
TG-4	*Gleditsia triacanthos*	Honeylocust	4	-	-	-	-	-	-	-	-	-	-	-	Trees Have been removed	
33	*Picea pungens var. 'Glauca'*	Colorado Blue Spruce	5	29-39	G	G	G	4		Private	1.8-2.4	Good	100%	Remove		
33	*Tilia americana*	Basswood	4	40-45	F	G	G	6		Private	3	Good	100%	Remove		
34	*Picea pungens var. 'Glauca'*	Colorado Blue Spruce	2	30-35	G	G	G	4		Private	2.4	Good	100%	Remove		
TG-5	*Picea pungens var. 'Glauca'*	Colorado Blue Spruce	14	20-35	G	G	G-F	4		Private	1.8-2.4	Satisfactory	80%	Preserve		
TG-5	*Acer platanoides*	Norway Maple	1	25-30	G	G	G	5		Private	1.8-2.4	Good	100%	Preserve		
TG-5	*Tilia americana*	Basswood	7	18-40	F	G	G	6		Private	1.8-2.4	Good	100%	Preserve		
TG-5	*Fraxinus americna*	White Ash	3	25-35	F	F	D	4		Private	1.8-2.4	Satisfactory	80%	Preserve		
35	*Acer x freemanii*	Freeman Maple	1	9/15	G	G	G	2		Private	1.8	Good	100%	Remove		
36	*Picea pungens var. 'Glauca'*	Colorado Blue Spruce	2	21/22	G	G	G	3		Private	1.8	Good	100%	Remove		
37	*Acer x freemanii*	Freeman Maple	3	9/13/12	G	G	G	2		Private	1.2-1.8	Good	100%	Remove		
38	*Picea pungens var. 'Glauca'*	Colorado Blue Spruce	2	25/25	G	G	G	3		Private	1.8	Good	100%	Remove		
39	*Acer x freemanii*	Freeman Maple	3	10/15/14	G	G	G	3		Private	1.8	Good	100%	Remove		
40	*Picea pungens var. 'Glauca'*	Colorado Blue Spruce	2	15-20	G	G	G	2		Private	1.8	Good	100%	Retain		

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Trees to be Removed - Health
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Tree location
Tree to be Transplanted
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Tree #	Botanical Name	Common Name	Qty.	DBH (cm)	TI	CS	CV	Dripline Radius (m)	Height (m)	Tree Location / Applicable By-law	Tree Protection Zone (m)	York Region Condition Rating	York Region % for Compensation	Recommendation	Comments - Health	Comments - Removal/Preservation
41	*Acer platanoides*	Norway Maple	1	21	F	G	G	4		ROW	2.4	Good	100%	Retain		
Woodlot Edge	*Acer platanoides*	Norway Maple	O	10-20	G	G	G	3			2.4	Good	100%	Retain		
	Fraxinus americna	White Ash	R	<10-30	G-F	G-F	G-F	4			2.4	Satisfactory	80%	Retain		
	Ulmus americana	American Elm	R	<10-25	G-F	G-F	G-F	4			2.4	Satisfactory	80%	Retain		
	Picea glauca	White Spruce	R	±20-25	G	G	G	3			2.4	Good	100%	Retain		
	Rhamnus spp.	Buckthorn	O	<5	G-F	G-F	G	1			2.4	Satisfactory	80%	Retain		
	Carya ovata	Shagbark Hickory	O	±10-20	G	G	G	3			2.4	Good	100%	Retain		
	Prunus virginiana	Chokecherry	O	<10-15	G	G	G	3			2.4	Good	100%	Retain		
	Ostrya virginiana	Ironwood	R	±5-15	G	G	G	3			2.4	Good	100%	Retain		
	Tilia americana	Basswood	O	±5-25	G-F	G-F	G-F	4			2.4	Satisfactory	80%	Retain		
	Quercus rubra	Red Oak	O	±5-15	G	G	G	4			2.4	Good	100%	Retain		
TG-6	*Picea glauca*	White Spruce	9	±15-20	G	G	G	3		Private	1.8	Good	100%	Retain		
TG-6	*Populus tremuloides*	Trembling Aspen	2	5-15	G	G	G	2		Private	1.8	Good	100%	Retain		
TG-6	*Populus grandidentata*	Largetooth Aspen	1	6,11	G	G	G	2		Private	1.8	Good	100%	Retain		
TG-6	*Thuja occidentalis*	Eastern White Cedar	Clump	<10	G	G	G	1		Private	1.2	Good	100%	Retain		
TG-6	*Acer saccharinum*	Silver Maple	6	15-20	G	G	G	4		Private	1.8	Good	100%	Retain		
42	*Acer saccharinum*	Silver Maple	1	53	G	G	G	7			3.6	Good	100%	Retain		
43	*Picea pungens var. 'Glauca'*	Colorado Blue Spruce	1	40	G	G	G	4			2.4	Good	100%	Retain		
44	*Acer negundo*	Manitoba Maple	1	8-17	F	F	G	3		ROW	2.4	Satisfactory	80%	Retain		
45	*Ulmus pumila*	Siberian Elm	1	8,6	F	G	G	2		ROW	2.4	Good	100%	Retain		
46	*Populus grandidentata*	Largetooth Aspen	1	15	G	G	G	2		ROW	2.4	Good	100%	Retain		
47	*Tilia cordata*	Littleleaf Linden	5	8-11	G	G	G	2		ROW	2.4	Good	100%	Retain		
48	*Ulmus japonica x wilsonia 'Morton'*	Accolade Elm	2	7-8	G	G	G	2		ROW	2.4	Good	100%	Retain		
48	*Acer platanoides*	Norway Maple	3	6-12	F	G	G	3		ROW	2.4	Good	100%	Retain		
TG-7	*Picea pungens var. 'Glauca*	Colorado Blue Spruce	3	25-30	G	G	G	3		ROW	2.5 to 3.0	Good	100%	Retain		
TG-7	*Picea glauca*	White Spruce	4	10-13	G	G	G	2		ROW	2.4	Good	100%	Retain		
TG-7	*Ulmus morton*	Accolade Elm	3	6-7	G	G	G	2		ROW	2.4	Good	100%	Retain		
TG-8	*Pinus nigra*	Austrian Pine	1	14	G	G	G	2		ROW	2.4	Good	100%	Retain		
TG-8	*Picea pungens*	Colorado Spruce	5	9-13	G	G	G	2		ROW	2.4	Good	100%	Retain		
TG-8	*Acer x freemanii*	Freeman Maple	5	6-8	G	G	G	2		ROW	2.4	Good	100%	Retain		
TG-8	*Celtis occidentalis*	Hackberry	5	6-8	G	G	G	2		ROW	2.4	Good	100%	Retain		
TG-8	*Abie balsamea*	Balsam Fir	4	8-10	G	G	G	2		ROW	2.4	Good	100%	Retain		

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TG-8	*Acer negundo*	Manitoba Maple	1	12	F	G	G	2		ROW	2.4	Good	100%	Retain		
TG-9	*Salix babylonica*	Weeping Willow	-	-	-	-	-	-	-	-	-	-	-	Trees Have been removed		
TG-9	*Ulmus pumila*	Siberian Elm	-	-	-	-	-	-	-	-	-	-	-	Trees Have been removed		
TG-9	*Acer negundo*	Manitoba Maple	-	-	-	-	-	-	-	-	-	-	-	Trees Have been removed		
TG-9	*Acer negundo*	Manitoba Maple	-	-	-	-	-	-	-	-	-	-	-	Trees Have been removed		
TG-9	*Malus spp.*	Apple	-	-	-	-	-	-	-	-	-	-	-	Trees Have been removed		
49	*Tilia cordata*	Littleleaf Linden	1	9	G	G	G	2		Private	1.2	Good	100%	Retain		
49	*Picea pungens*	Colorado Spruce	1	10-13	G	G	G	2		Private	1.8	Good	100%	Retain		
50	*Picea pungens*	Colorado Spruce	3	9-15	G	G	G	2		Private	1.8	Good	100%	Retain		
51	*Betula papyrifera*	White Birch	1	12	F	F	G	3		Private	1.8	Satisfactory	80%	Retain		
51	*Tilia cordata*	Littleleaf Linden	4	8-12	G	G	G-F	3		Private	1.8	Satisfactory	80%	Retain		
52	*Pyrus spp.*	Ornamental Pear	3	10-12	G	G	G	2.5		Private	1.8	Good	100%	Retain		
52	*Tilia cordata*	Littleleaf Linden	3	11-14	G	G	G	3		Private	1.8	Good	100%	Retain		
53	*Picea pungens var. 'Glauca'*	Colorado Blue Spruce	5	10-18	G	G	G	2.5		Private	1.8	Good	100%	Retain		
53	*Picea pungens var. 'Glauca'*	Colorado Blue Spruce	1	10-18	G	G	G	2.5		Private	1.8	Good	100%	Preserve / Encroachment		
54	*Picea pungens var. 'Glauca'*	Colorado Blue Spruce	1	16	G	G	G	3		Private	1.8	Good	100%	Retain		
55	*Acer platanoides*	Norway Maple	3	20-28	G	G	G	4		Private	1.8	Good	100%	Retain		
56	*Picea pungens var. 'Glauca*	Colorado Blue Spruce	3	14-16	G	G	G	2		Private	1.8	Good	100%	Retain		
57	*Fraxinus americna*	White Ash	2	15-16	G	F	F	2		Private	1.8	Satisfactory	80%	Retain		
58	*Picea pungens var. 'Glauca*	Colorado Blue Spruce	3	18-20	G	G	G	3.5		Private	1.8	Good	100%	Retain		
59	*Acer platanoides*	Norway Maple	2	17-25	G	G	G	4		Private	1.8	Good	100%	Retain		
59	*Fraxinus americna*	White Ash	1	20	G	G	P	4		Private	1.8	Declining	40%	Retain		
60	*Picea pungens var. 'Glauca*	Colorado Blue Spruce	1	15	G	G	G	3		Private	1.8	Good	100%	Retain		
61	*Fraxinus americna*	White Ash	1	16	G	G	G	3		Private	1.8	Good	100%	Retain		
62	*Picea pungens var. 'Glauca*	Colorado Blue Spruce	6	15-20	G	G	G	3		Private	1.8	Good	100%	Retain		
63	*Pinus nigra*	Austrian Pine	2	20/35	G	G	G	4		ROW	2.4 & 3.5	Good	100%	Remove		
64	*Syringa reticulata 'Ivory Silk'*	Ivory Silk	6	6-7	G	G	G	2		ROW	2.4	Good	100%	Remove		
65	*Quercus bicolor*	Swamp White Oak	6	6-8	G	G	G	2		ROW	2.4	Good	100%	Remove		
66	*Syringa reticulata 'Ivory Silk'*	Ivory Silk	5	6-7	G	G	G	2		ROW	2.4	Good	100%	Remove		
TG-10	*Quercus macrocarpa*	Bur Oak	3	40-60	G	G	G	7		Private	3.6	Good	100%	Retain		
TG-10	*Pinus nigra*	Austrian Pine	2	45-50	G	G	G	5		Private	3	Good	100%	Retain		
TG-10	*Acer platanoides*	Norway Maple	4	40-45	G	G	G	7		Private	3	Good	100%	Retain		

Appendix A: Tree Preservation Tables

Project: Langstaff Road EA **Field Work Completed By: Peter McNamara & Zeev Rajman**

Date of Field Work: November 8 & 21, 2017

Tree Condition Assessment Criteria:

TI - Trunk Integrity: assessment of the trunk for any defects or weaknesses.
CS - Canopy Structure: assessment of scaffold branches, unions and canopy
CV - Canopy vigour: assessment of the health of the tree, based on the % of deadwood, disease, pests & live crown

Tree Condition:

Good (G): tree displays less than 15% deficiency/defect within the given tree assessment criteria (TI,CS,CV)
Fair (F): tree displays 15-40% deficiency/defect within the given tree assessment criteria (TI,CS,CV)
Poor (P): tree displays greater than 40% deficiency/defect within the given tree assessment criteria (TI,CS,CV)

Legend:

Trees to be Removed - Construction
Trees to be Removed - Health
Minimum TPZ encroachment / Mitigation Measures
Tree location
Tree to be Transplanted
Tree to be Pruned

Tree #	Botanical Name	Common Name	Qty.	DBH (cm)	TI	CS	CV	Dripline Radius (m)	Height (m)	Tree Location / Applicable By-law	Tree Protection Zone (m)	York Region Condition Rating	York Region % for Compensation	Recommendation	Comments - Health	Comments - Removal/Preservation
TG-10	*Picea pungens*	Colorado Spruce	2	46-50	G	G	G	5		Private	3	Good	100%	Retain		
67	*Pinus nigra*	Austrian Pine	2	28,28/35	F	G	G	5		Private	2.4	Good	100%	Preserve / Encroachment		
67	*Ulmus americana*	American Elm	1	51	G	G	G	8		ROW	5.1	Good	100%	Remove		
67	*Acer platanoides*	Norway Maple	2	40-45	G	G	G	6		Private	3	Good	100%	Preserve / Encroachment		
67	*Gleditsia triacanthos*	Honeylocust	1	45	G	G	G	6		Private	3	Good	100%	Preserve / Encroachment		
68	*Picea pungens var. 'Glauca'*	Colorado Blue Spruce	2	28/31	G	G	G	4		Private	2.4	Good	100%	Remove		
68	*Acer platanoides*	Norway Maple	1	36	G	G	G	6		Private	2.4	Good	100%	Remove		
69	*Acer platanoides*	Norway Maple	2	30-40	G	G	G	6		Private	2.4	Good	100%	Remove		
69	*Pinus nigra*	Austrian Pine	4	35-40	G	G	G	4		Private	2.4	Good	100%	Remove		
70	*Acer platanoides*	Norway Maple	1	45	G	G	G	6		Private	3	Good	100%	Remove		
71	*Acer platanoides*	Norway Maple	1	51	G	G	G	7		Private	3.6	Good	100%	Preserve / Encroachment		
72	*Malus spp.*	Crabapple	4	25-28	G	G	G	4		Private	1.8	Good	100%	Retain		
73	*Acer platanoides*	Norway Maple	1	39	G	G	G	6		Private	2.4	Good	100%	Preserve		
74	*Picea pungens var. 'Glauca'*	Colorado Blue Spruce	2	28-37	G-F	G	G-F	4		ROW	2.8 to 3.7	Satisfactory	80%	Remove		
74	*Picea pungens var. 'Glauca'*	Colorado Blue Spruce	3	28-37	G-F	G	G-F	4		Private	1.8	Satisfactory	80%	Remove		
75	*Acer platanoides*	Norway Maple	3	33-35	G	G	G	6		ROW	2.4	Good	100%	Preserve		
76	*Pinus nigra*	Austrian Pine	3	25-45	F	F	G	4		ROW	2.5 to 4.5	Satisfactory	80%	Preserve		
76	*Pinus nigra*	Austrian Pine	1	25	F	F	G	4		ROW	2.4	Satisfactory	80%	Remove		
77	*Acer platanoides*	Norway Maple	1	30	G	G	G	6		ROW	3.0	Good	100%	Preserve		
78	*Acer platanoides*	Norway Maple	2	30/32	G	G	G	6		ROW	3.0 & 3.2	Good	100%	Preserve		
79	*Pinus nigra*	Austrian Pine	4	28-37	F	G	G	4		ROW	2.8 to 3.7	Good	100%	Remove		
80	*Acer platanoides*	Norway Maple	3	32-35	G	G	G	5		ROW	3.2 to 3.5	Good	100%	Remove		
81	*Picea pungens var. 'Glauca'*	Colorado Blue Spruce	5	29-35	G	G	G	4		ROW	2.9 to 3.5	Good	100%	Remove		
82	*Acer platanoides*	Norway Maple	3	29-34	G	G	G	6		ROW	2.9 to 3.4	Good	100%	Remove		
82	*Pinus nigra*	Austrian Pine	2	25/30	F	G	G	4		ROW	2.5 / 3.0	Good	100%	Remove		
83	*Juglans nigra*	Black Walnut	1	15	G	G	G	3		Private	1.8	Good	100%	Remove		
84	*Quercus macrocarpa*	Bur Oak	1	±50	G	G	G	8		Private	3.6	Good	100%	Retain	Overhang Property line	
85	*Quercus macrocarpa*	Bur Oak	1	±35	G	G	G	6		Private	2.4	Good	100%	Remove	Overhang Property line	
86	*Quercus macrocarpa*	Bur Oak	1	±40	G	G	G	6		Private	3	Good	100%	Remove	Overhang Property line	
87	*Quercus macrocarpa*	Bur Oak	1	±50	G	G	G	6		Private	3.6	Good	100%	Remove	Overhang Property line	
88	*Acer negundo*	Manitoba Maple	1	MS <10	F	F	G	1		Private	1.2	Good	100%	Remove		
	Acer negundo	Manitoba Maple	5	<10	F	F	G	5			1.2	Satisfactory	80%	Retain		

Appendix A: Tree Preservation Tables

Project: Langstaff Road EA **Field Work Completed By: Peter McNamara & Zeev Rajman**

Date of Field Work: November 8 & 21, 2017

Tree Condition Assessment Criteria:

TI - Trunk Integrity: assessment of the trunk for any defects or weaknesses.

CS - Canopy Structure: assessment of scaffold branches, unions and canopy

CV - Canopy vigour: assessment of the health of the tree, based on the % of deadwood, disease, pests & live crown

Tree Condition:

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Poor (P): tree displays greater than 40% deficiency/defect within the given tree assessment criteria (TI,CS,CV)

Legend:

Trees to be Removed - Construction

Trees to be Removed - Health

Minimum TPZ encroachment / Mitigation Measures

Tree location

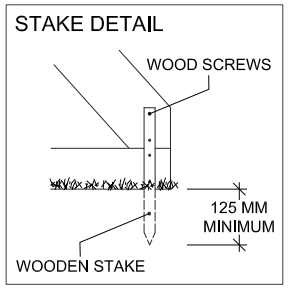
Tree to be Transplanted

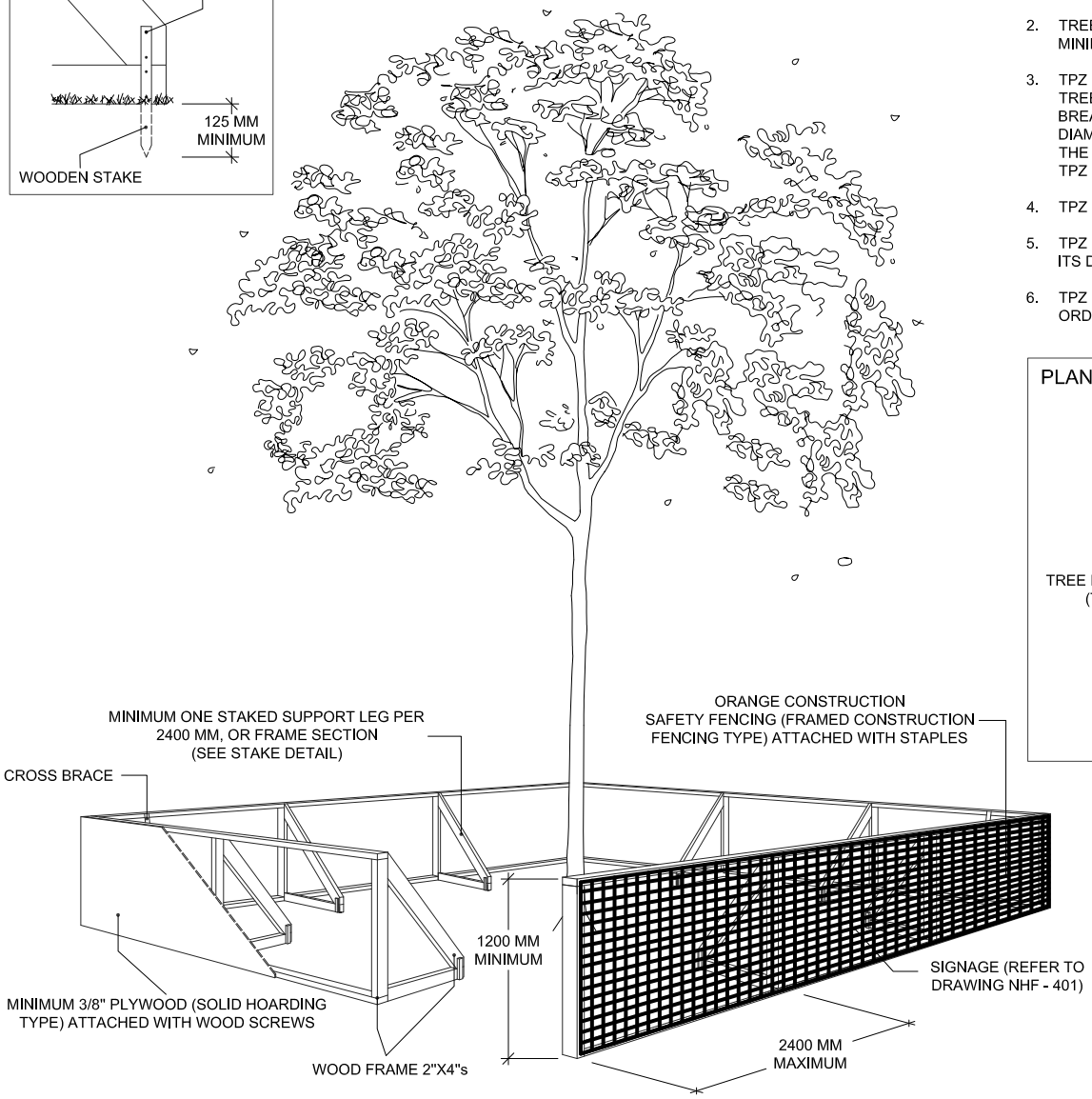
Tree to be Pruned

Tree #	Botanical Name	Common Name	Qty.	DBH (cm)	TI	CS	CV	Dripline Radius (m)	Height (m)	Tree Location / Applicable By-law	Tree Protection Zone (m)	York Region Condition Rating	York Region % for Compensation	Recommendation	Comments - Health	Comments - Removal/Preservation
Creek	*Salix spp.*	Willow	1	MS: 11-21	F	F	G	3			1.8	Satisfactory	80%	Retain		
	Juglans nigra	Black Walnut	1	14	G	G	G	3			1.8	Good	100%	Retain		
	Acer platanoides	Norway Maple	3	<10	G	G	G	2.5			1.2	Good	100%	Retain		
89	*Acer platanoides*	Norway Maple	1	32	G	G	G	5		Private	2.4	Good	100%	Retain		
90	*Acer platanoides 'Crimson King'*	Crimson King Maple	1	29	P	F	G	5		ROW	2.9	Satisfactory	80%	Remove		
91	*Acer platanoides 'Crimson King'*	Crimson King Maple	1	33	G	G	G	5		ROW	3.3	Good	100%	Remove		
92	*Acer platanoides 'Crimson King'*	Crimson King Maple	1	37	G	G	G	4		ROW	3.7	Good	100%	Remove		
93	*Picea pungens var. 'Glauca'*	Colorado Blue Spruce	1	36	G	G	G	4		ROW	3.6	Good	100%	Remove		
94	*Picea pungens var. 'Glauca'*	Colorado Blue Spruce	1	35	G	G	G	4		ROW	3.5	Good	100%	Retain		

APPENDIX B

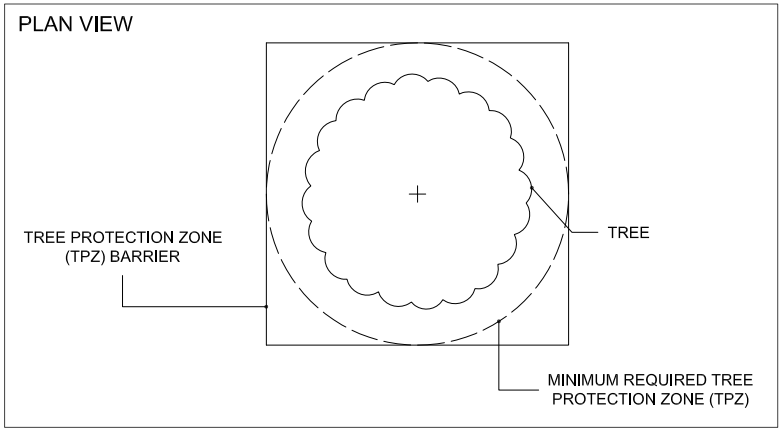
NHF Details





NOTES:

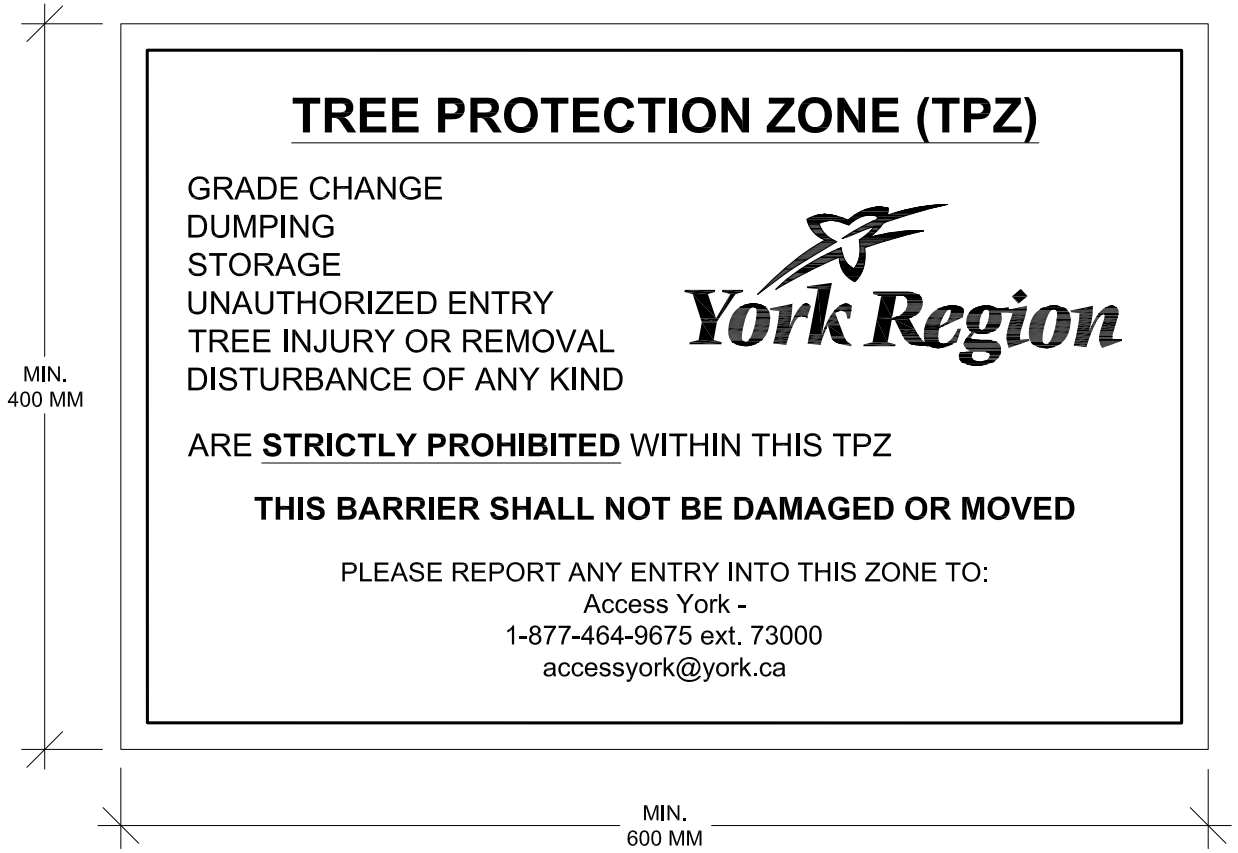
1. REFER TO YORK REGION STREET TREE & FOREST PRESERVATION AND COMPENSATION GUIDELINES FOR COMPLETE TREE PRESERVATION REQUIREMENTS.
2. TREE PROTECTION ZONE (TPZ) BARRIER SHALL BE INSTALLED AT THE OUTER LIMIT OF THE MINIMUM REQUIRED TPZ FOR EACH TREE TO BE PRESERVED.
3. TPZ IS DELINEATED AS A RADIUS, IN 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 AT BREAST HEIGHT (DBH) OF THE LARGEST-DBH STEM IS USED TO DETERMINE THE TPZ RADIUS. THE TPZ FOR ALL TREES 24 CM DBH OR LESS IS A MINIMUM OF 2.4 M. THE TPZ FOR TREES 25 CM OR GREATER IS 10 CM 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 THE COMMENCEMENT OF ANY SITE DISTURBANCE.
6. TPZ BARRIERS SHALL BE INSPECTED WEEKLY AND BE MAINTAINED IN GOOD WORKING ORDER AND APPEARANCE UNTIL COMPLETION OF ALL SITE WORKS.



York Region Environmental Services

TREE PROTECTION ZONE (TPZ) BARRIER

DATE:			SCALE N.T.S.
REV.			NHF - 400



York Region Environmental Services

TREE PROTECTION ZONE (TPZ)
SIGNAGE

DATE:			SCALE N.T.S.
REV.			NHF - 401

General

- These notes are in support of York Region's Street Tree and Forest Preservation and Compensation Guidelines. Refer to the Guidelines prior to undertaking any site disturbance in proximity to trees on York Region–owned property.
- York Region Street Tree and Forest Preservation and Compensation Guidelines must be implemented if there is a reasonable likelihood that any site works will in any way encroach upon minimum required Tree Protection Zones (TPZs), whether such encroachment is planned or inadvertent, or if trees to be preserved are located within 10 metres of the limits of proposed site disturbance.

Tree Protection Zone (TPZ)

- A minimum Tree Protection Zone (TPZ) will be established around every tree to be preserved in accordance with the York Region Street Tree and Forest Preservation and Compensation Guidelines and a York Region–approved Tree Preservation Plan.
- No entry or activity shall be permitted within the TPZ without prior written approval of York Region Environmental Services Department, Natural Heritage and Forestry Division.
- Prohibited activities within the TPZ include but are not limited to: installation or attachment of any items to the tree; operation of equipment or machinery; storage of equipment, machinery or materials; access by any personnel; placement of trailers, temporary buildings or structures; flushing, storage or dumping of fuels, chemicals or other contaminants; stockpiling of soil; digging, trenching, or excavation; and/or change to existing grade.

Tree Protection Zone (TPZ) Barrier

- A Tree Protection Zone (TPZ) barrier shall be constructed around the TPZ of every tree to be preserved in accordance with the York Region Street Tree and Forest Preservation and Compensation Guidelines and a York Region–approved Tree Preservation Plan.
- Where trees to be protected are located in close proximity to each other, the TPZ barrier shall be installed to protect trees in contiguous groups.
- The TPZ barrier shall be installed prior to commencement of any site disturbance. Site disturbance shall not commence until the installation of all TPZ barriers has been completed, and has been verified and approved by York Region or its designate.
- The TPZ barrier shall be constructed on a 2x4 frame. The height of the frame shall measure a minimum of 1.2 m (4 feet), and the width of individual frame sections shall not exceed 2.4 m (8 feet).
- The frame shall be supported by diagonal 2·4 support legs installed inside the TPZ, secured to the frame using wood screws, and secured to the ground using an wooden stake installed a minimum of 125 mm into the ground. A minimum of 1 support leg shall be installed per 2.4 m (8 feet) of linear TPZ barrier distance, or per frame section.
- Framed construction fencing is the primary method for TPZ barrier construction. Orange construction safety fencing shall be securely and tightly stapled to the outside of the TPZ barrier frame to construct the framed construction fencing TPZ barrier type. Other fencing materials (e.g., chicken wire, green snow fence, etc.) shall not be used.
- Solid hoarding shall be installed where there is a significant risk of fill or other material being piled against the TPZ barrier, or where heavy machinery is to be operated in close proximity to the TPZ barrier. Plywood or oriented strand board (OSB) sheathing with a minimum thickness of 3/8□ shall be affixed using wood screws to the outside of the TPZ barrier frame to construct the solid hoarding TPZ barrier type. Nails, staples or other fasteners shall not be used.
- Signage, as shown in typical detail drawing 'Tree Protection Zone (TPZ) Signage NHF–401', shall be installed on all sides of the TPZ barrier. The distance between individual signs shall not exceed 10 metres on any one side of the TPZ barrier.
- If described as required in the Tree Preservation Report, silt barrier fencing shall be installed using a 'no–dig' method as described in the York Region Street Tree and Forest Preservation and Compensation Guidelines.

Maintenance

- TPZ barriers shall remain in place and in good working order and appearance throughout the duration of site disturbance until completion of all works.
- TPZ barriers shall not be moved, modified or relocated at any time without the approval of York Region or its designate.
- TPZ barriers shall be inspected by a qualified tree professional once–weekly or on a schedule approved by York Region or its designate. Any deficiencies shall be noted in writing and any TPZ barriers found to be in substandard condition shall be repaired, modified or replaced as necessary within five working days of formal notification by York Region or its designate.

Pruning

- No tree branches or tree roots shall be pruned without written approval of York Region or its designate. Any proposed pruning must be described in the Tree Preservation Report and must be approved by York Region or its designate prior to its undertaking.
- Approved pruning must be undertaken by an ISA Certified Arborist or an Ontario College of Trades 444A Arborist or Arborist Apprentice only.
- No trades personnel are permitted to prune tree branches or tree roots.

Other

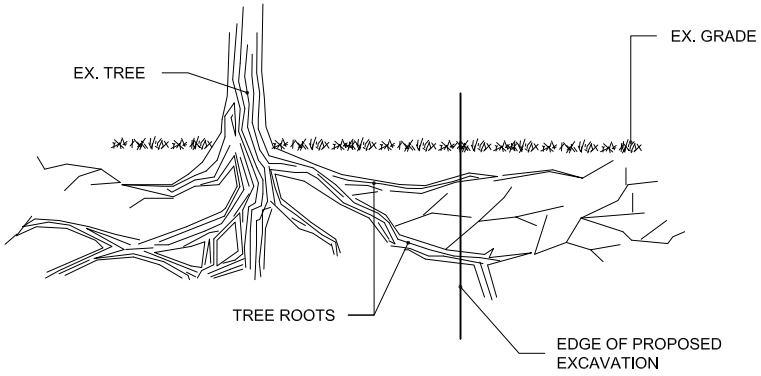
- Other tree preservation measures may be required to be implemented wherever site disturbance is proposed, anticipated or likely to occur within or in close proximity to Tree Protection Zones (TPZs) and trees to be preserved. Other acceptable tree preservation measures are described in the York Region Street Tree and Forest Preservation and Compensation Guidelines.
- All proposed tree preservation measures must be described in the Tree Preservation Report and shown on the Tree Preservation Plan.

York Region Environmental Services

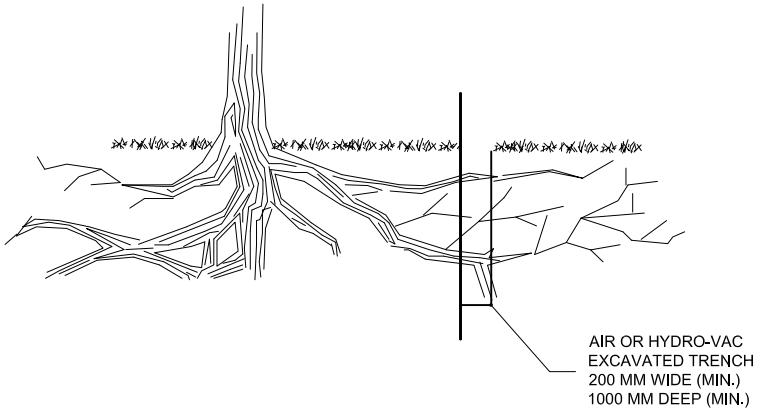
STANDARD TREE PROTECTION NOTES

DATE:			SCALE N.T.S.
REV.			NHF - 402

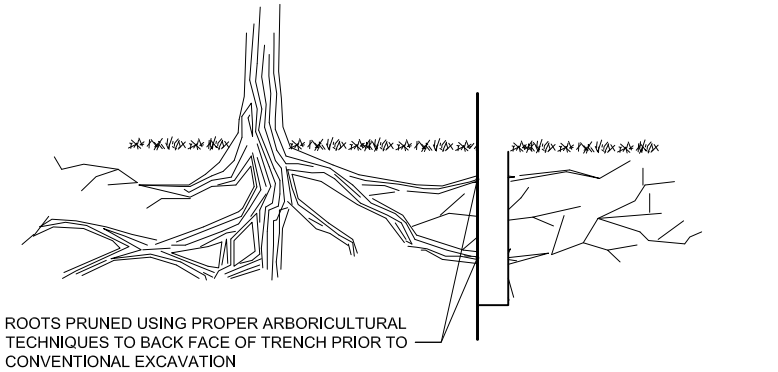
1. EXISTING CONDITIONS (TYP.)



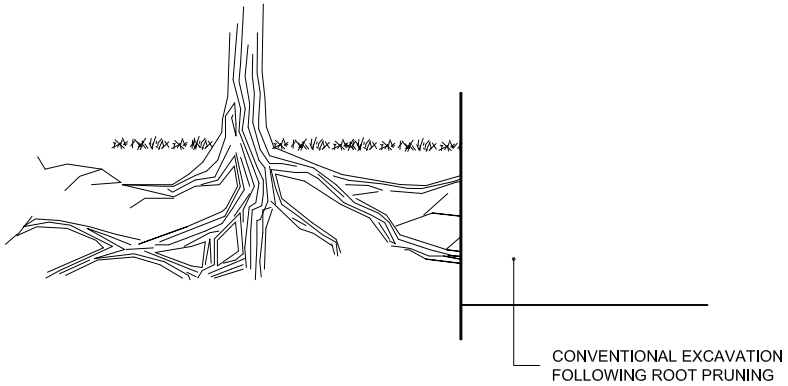
2. ROOT-SENSITIVE EXCAVATION (TYP.)



3. ROOT PRUNING (TYP.)



4. CONVENTIONAL EXCAVATION (TYP.)



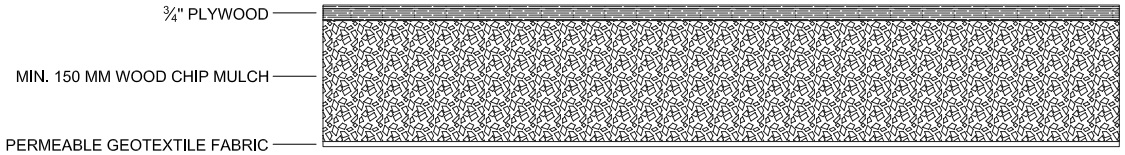
York Region Environmental Services

ROOT-SENSITIVE EXCAVATION AND ROOT PRUNING

DATE:			SCALE N.T.S.
REV.			NHF - 403

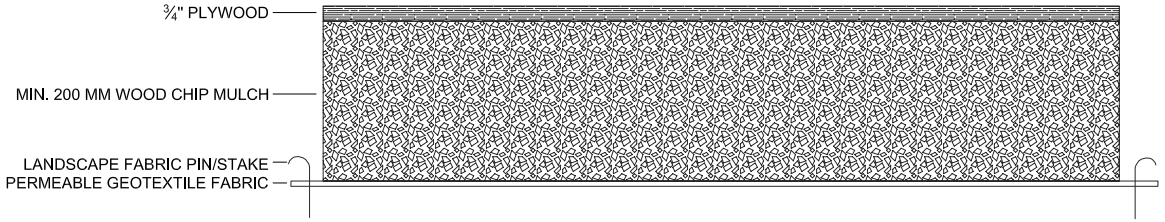
LIGHT ROOT ZONE COMPACTION PROTECTION

LIGHT ROOT ZONE COMPACTION PROTECTION SHALL BE IMPLEMENTED WHERE LIMITED NON-VEHICULAR ACCESS IN THE TPZ IS ANTICIPATED (E.G., OCCASIONAL FOOT TRAFFIC, WHEELBARROW).



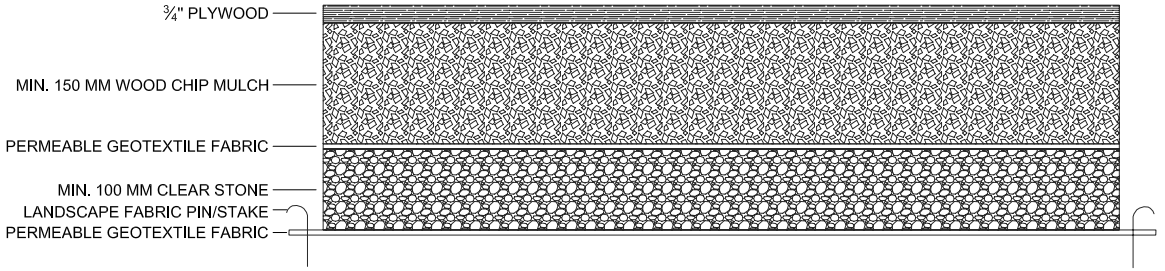
MODERATE ROOT ZONE COMPACTION PROTECTION

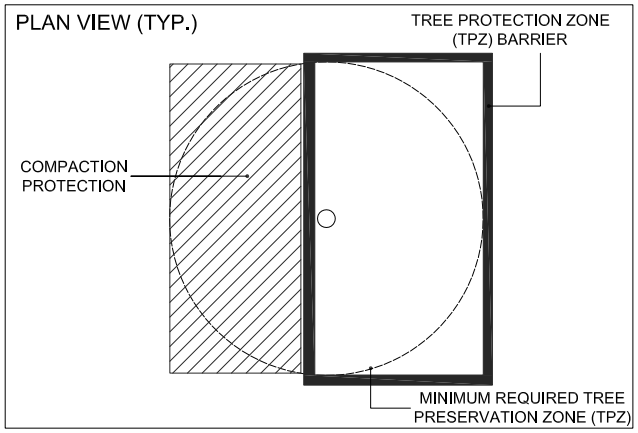
MODERATE ROOT ZONE COMPACTION PROTECTION SHALL BE IMPLEMENTED WHERE MORE FREQUENT NON-VEHICULAR ACCESS OR OCCASIONAL LIGHT VEHICLE (E.G., PICKUP TRUCK) ACCESS ACROSS THE TPZ IS ANTICIPATED.

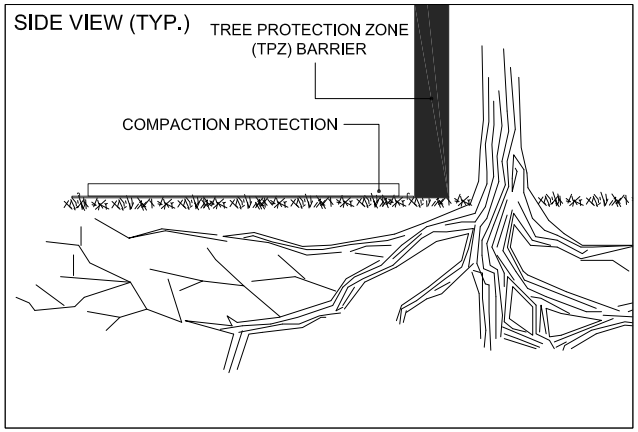


HEAVY ROOT ZONE COMPACTION PROTECTION

HEAVY ROOT ZONE COMPACTION PROTECTION SHALL BE IMPLEMENTED IN AREAS WHERE REGULAR VEHICLE ACCESS OR SIMILAR IMPACTS ARE ANTICIPATED IN THE TPZ.



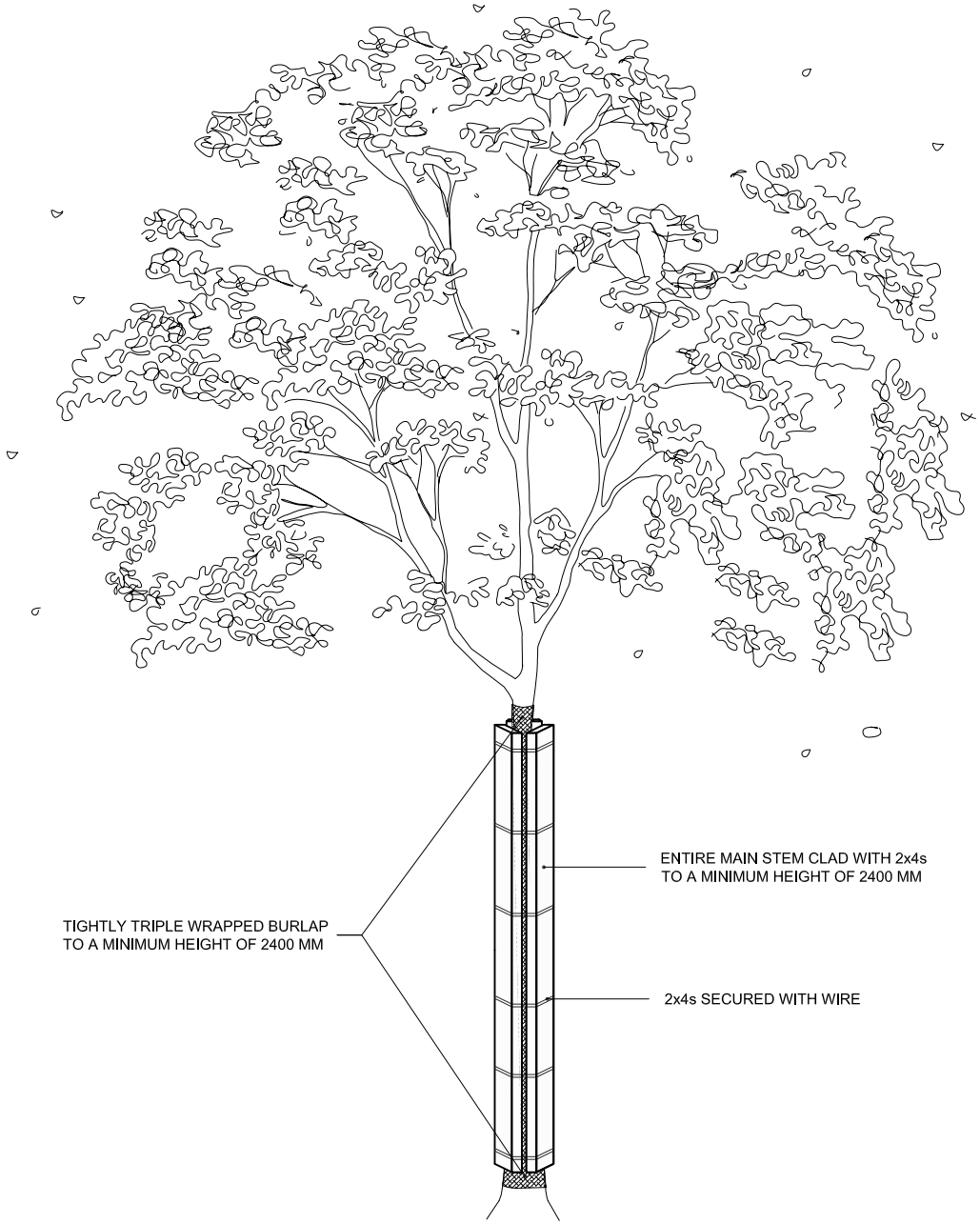




York Region Environmental Services

ROOT ZONE COMPACTION PROTECTION

DATE:			SCALE N.T.S.
REV.			NHF - 404



York Region Environmental Services

TREE STEM PROTECTION

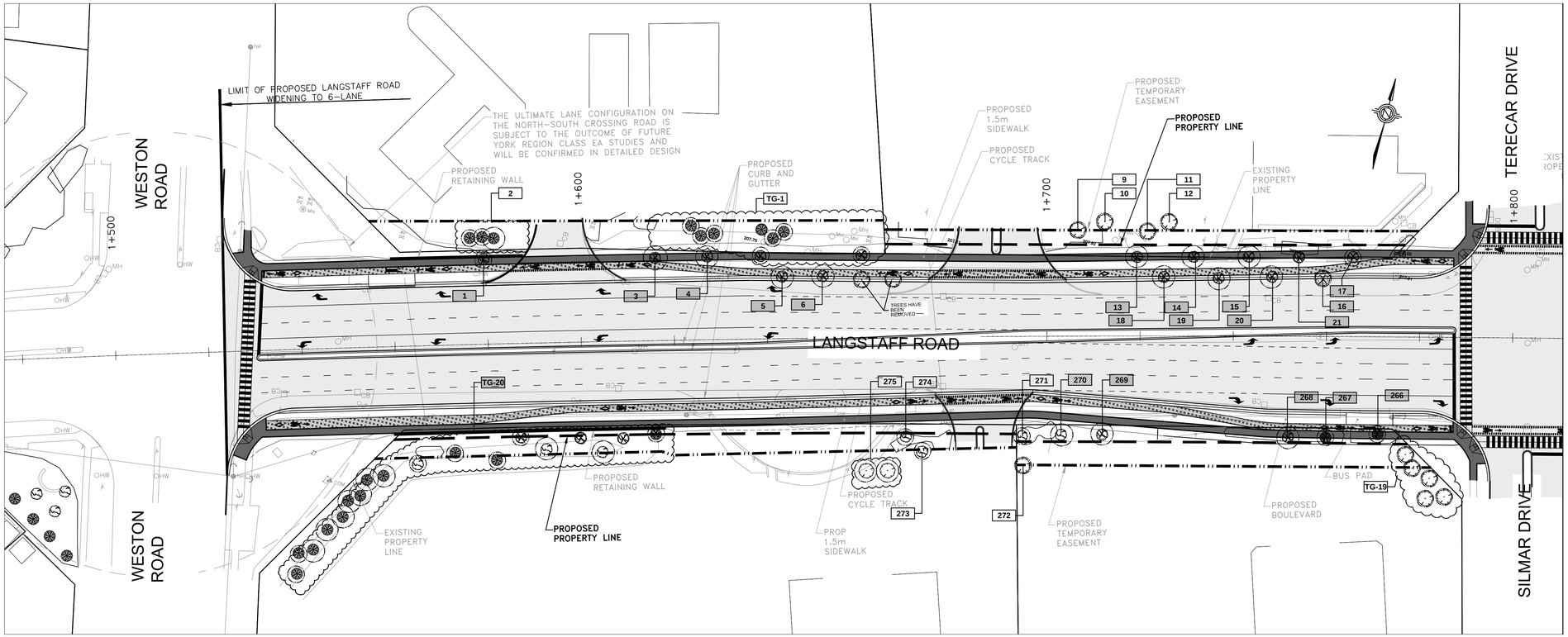
DATE:			SCALE N.T.S.
REV.			NHF - 405

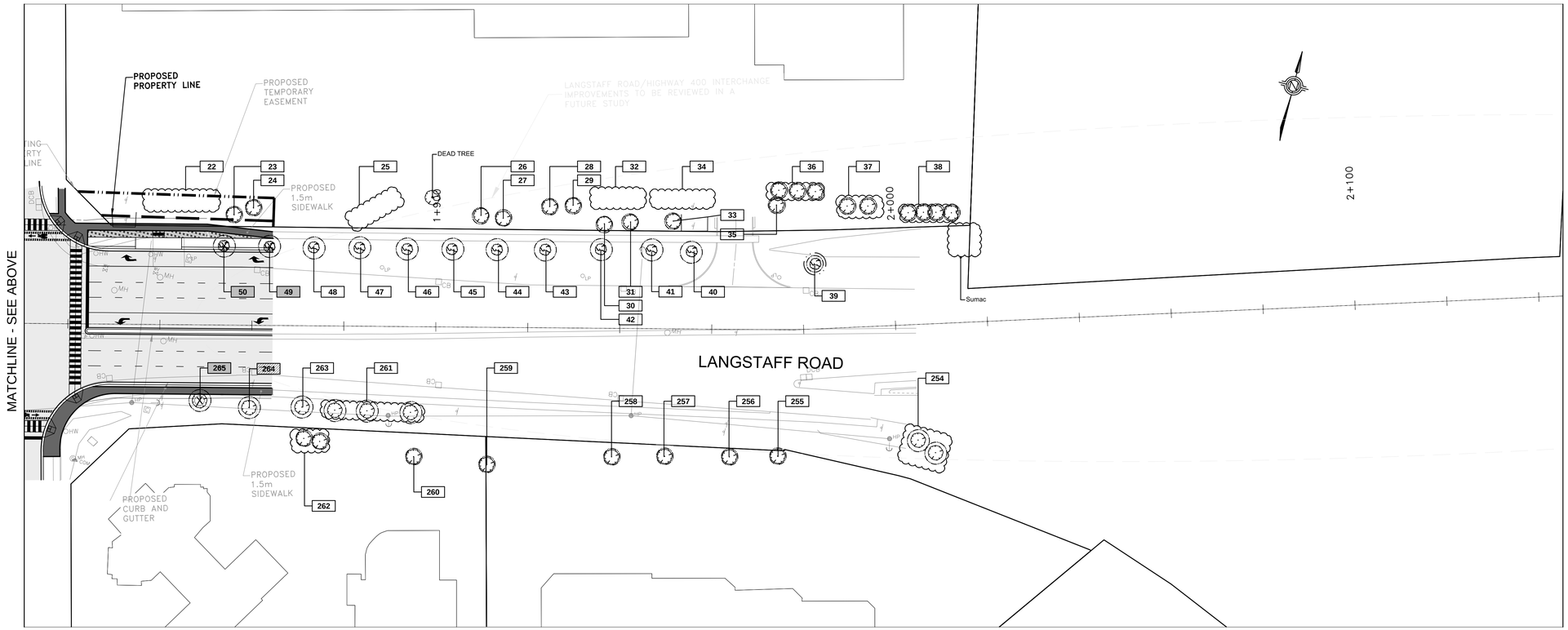
Table 2. Tree condition rating specifications.

Condition Rating	Percentage (for compensation)	Criteria
Good	100%	Growth occurs mostly as extensions from the terminal bud with little epicormics branching. Shoot growth usually exceeds 10 cm. Full, symmetrical crown, no sign of active decay, chronic or acute insect attack, large open wounds, tissue necrosis, dieback or chlorotic foliage, not leaning, falling or about to be uprooted.
Satisfactory	80%	Growth occurs mostly as extensions from the terminal bud. Epicormic branching may be heavy providing that the growth is healthy and abundant. May have a partially leaved or disfigured crown (>74%crown density), combined with a few dead branches or limbs, or small open wounds and small trunk tissue necrosis. *Tree* health will likely not decline further in the next 5 years.
Potential trouble	60%	Growth occurs mostly as epicormic branching or basal sprouts. Usually no growth from terminal buds. New growth may be thin with small buds showing lack of vigour. May improve or decline in health over the next 5 years. May have a partially leaved or disfigured crown (50-74% crown density). These *trees* usually have a combination of problems which may include poor form or lean, chronic or acute insect attack, small trunk tissue necrosis, small stem scars, twig dieback, dead branches, exposed roots or rootball, and/or animals burrowing in to rooting area. Infection may be present in its early stages.
Declining	40%	Declining in health. Crowns have significant twig dieback and dead branches. Usually describes *trees* having large trunk tissue necrosis, large stem scars. Foliage discolouration is often associated with this condition as is moderate to heavy top dieback and epicormic branching (<50% crown density). Chronic fungal infection or insect infestation may be present. These *trees* may require major corrective pruning, or replacement.
Death imminent	20%	Symptoms as in Declining but more acute. Will likely die within 5 years. Will require replacement or removal.
Dead	0%	No leaves, brittle twigs, dry buds.

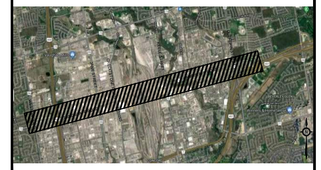
DRAWINGS

Tree Protection Plans (TP-1 to TP-9)





KEY MAP



LEGEND:

- EXISTING ROW AND LOT LINE
- PROPOSED PROPERTY LINE
- PROPOSED TEMPORARY EASEMENT
- PROPOSED C/L
- PROPOSED EDGE OF PAVEMENT
- PROPOSED SIDEWALK / MULTI-USE PATHWAY
- PROPOSED CYCLE TRACK
- SURVEYED TREES
- EXISTING INDIVIDUAL TREE (NOT SURVEYED) LOCATIONS ARE APPROXIMATE.
- EXISTING TREE GROUPING
- EXISTING TREE GROUPING TO BE REMOVED
- IDENTIFICATION NUMBER FOR EXISTING TREE TO BE RETAINED/PRESERVED
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REVISIONS	BY	DATE	APPR.

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REGION OF YORK

MUNICIPALITY
CITY OF VAUGHAN

PROJECT TITLE
LANGSTAFF ROAD EA

SHEET TITLE
TREE PROTECTION PLAN

wsp
100 Commerce Valley Dr. West
Thornhill, Ont. L3T 0A1
Tel (905) 882-1100
Fax (905) 882-0055
www.mmm.ca

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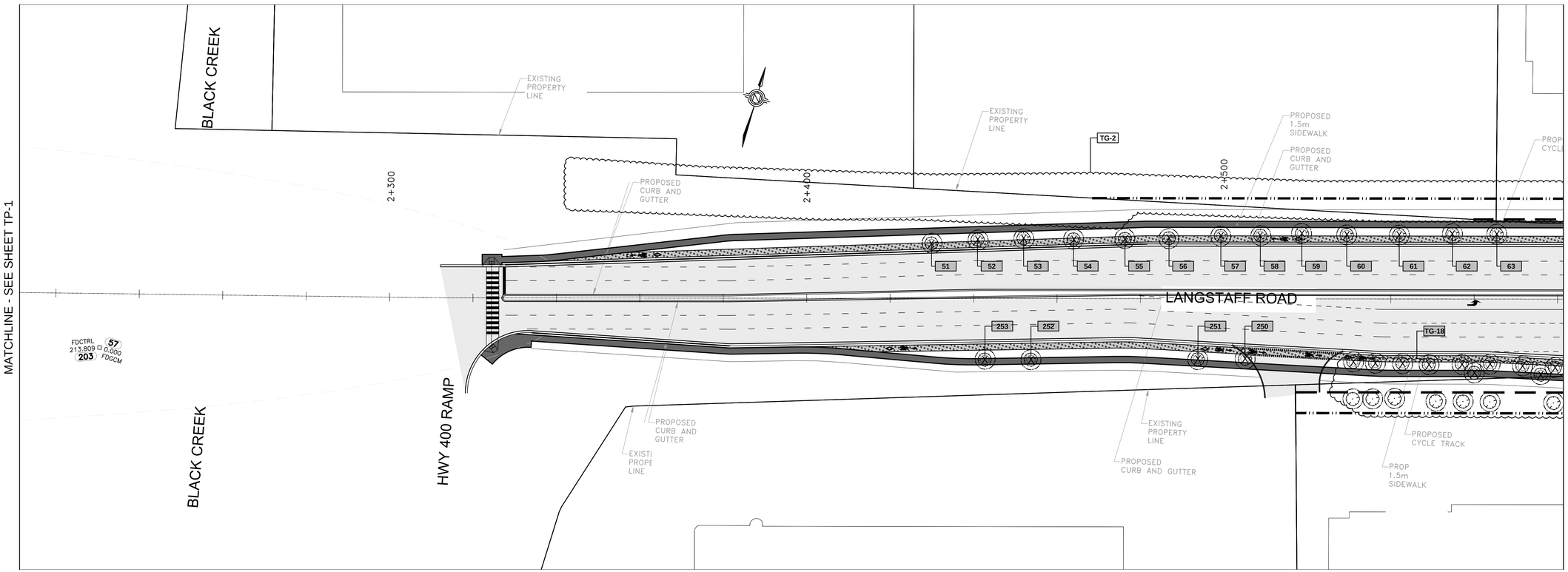
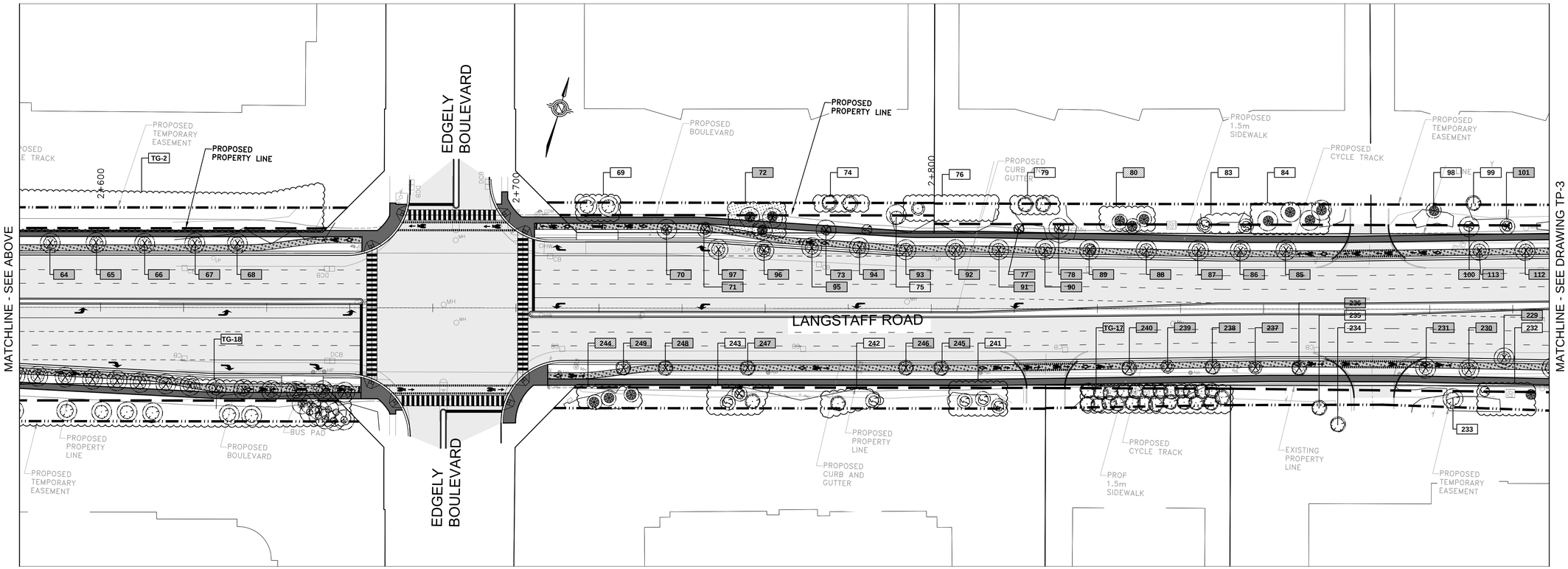
16M-01457-01-463	TP- 1





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MATCHLINE - SEE DRAWING TP-2

MATCHLINE - SEE BELOW

MATCHLINE - SEE ABOVE

MATCHLINE - SEE SHEET TP-4

LANGSTAFF ROAD

MILLWAY AVENUE

JANE STREET

3+000 3+100 3+200 3+300 3+400 3+500 3+600

EXISTING PROPERTY LINE

PROPOSED PROPERTY LINE

PROPOSED RETAINING WALL

PROPOSED TEMPORARY EASEMENT

PROPOSED 1.5m SIDEWALK

PROPOSED CYCLE TRACK

BUS PAD

PROPOSED CURB AND GUTTER

PROPOSED BOULEVARD

EXITING PROPERTY LINE

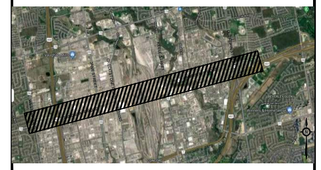
THE ULTIMATE LANE CONFIGURATION ON JANE STREET IS SUBJECT TO THE OUTCOME OF FUTURE YORK REGION CLASS EA STUDY AND WILL BE CONFIRMED IN DETAILED DESIGN

TG-3 TG-4 TG-5 TG-6 TG-15 TG-16

DEAD TREE

102 103 104 105 106 107 108 109 110 111 114 115 116 117 118 119 120 121 122 123 124 125 126 127 128 129 130 131 132 133 134 135 136 137 138 139 140 141 181 182 183 184 185 186 187 188 189 190 191 192 193 194 195 196 197 198 199 200 201 202 203 204 205 206 207 208 209 210 211 212 213 214 215 216 217 218 219 220 221 222 223 224 225 226 227 228

KEY MAP



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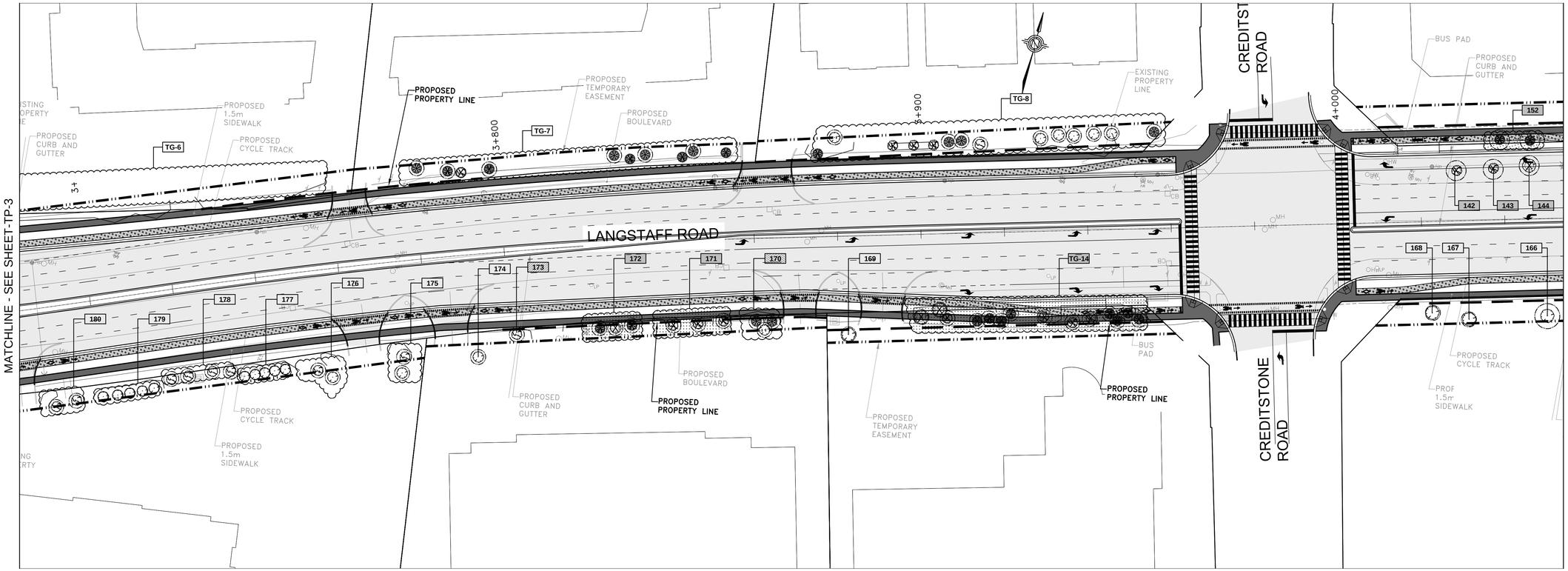

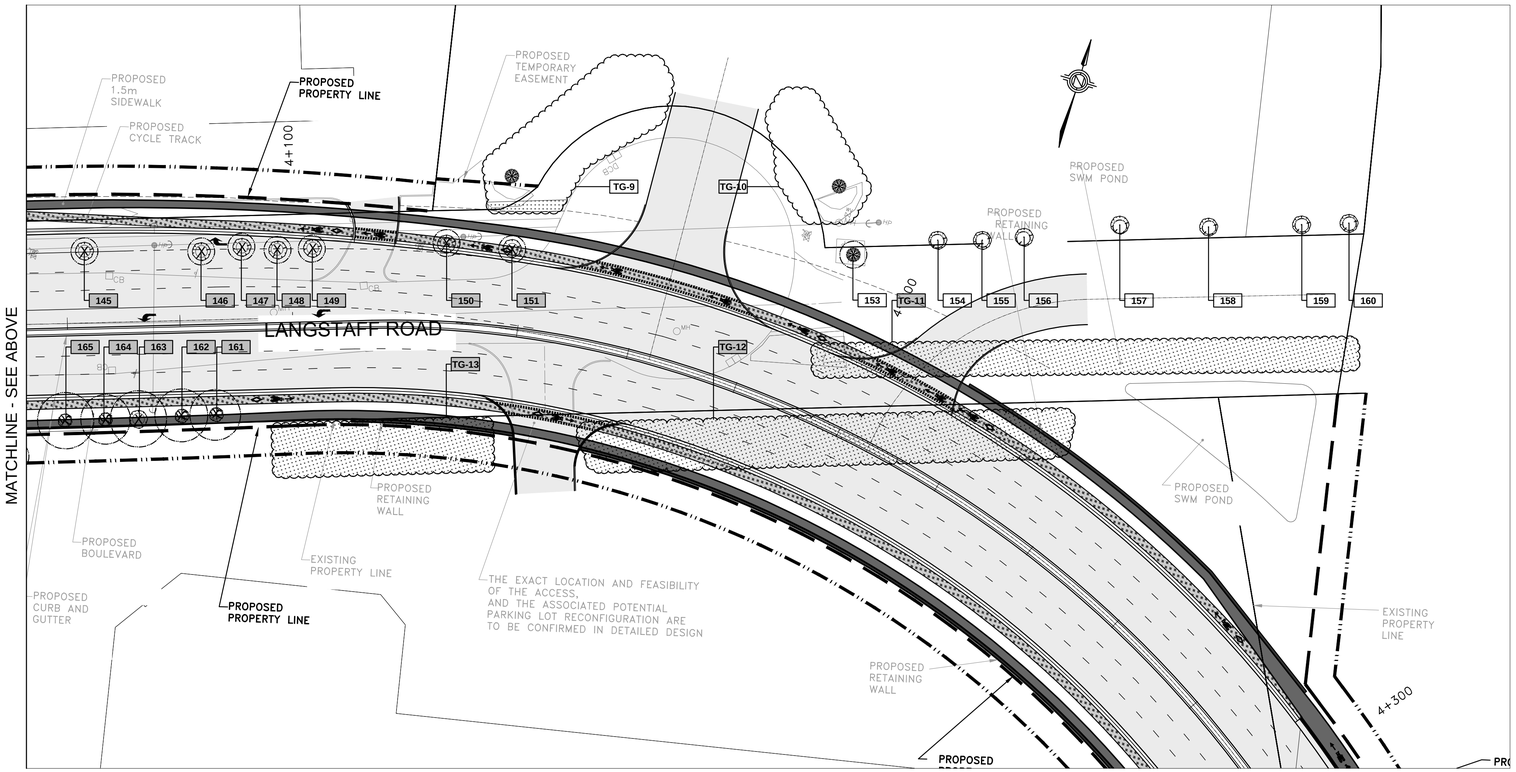

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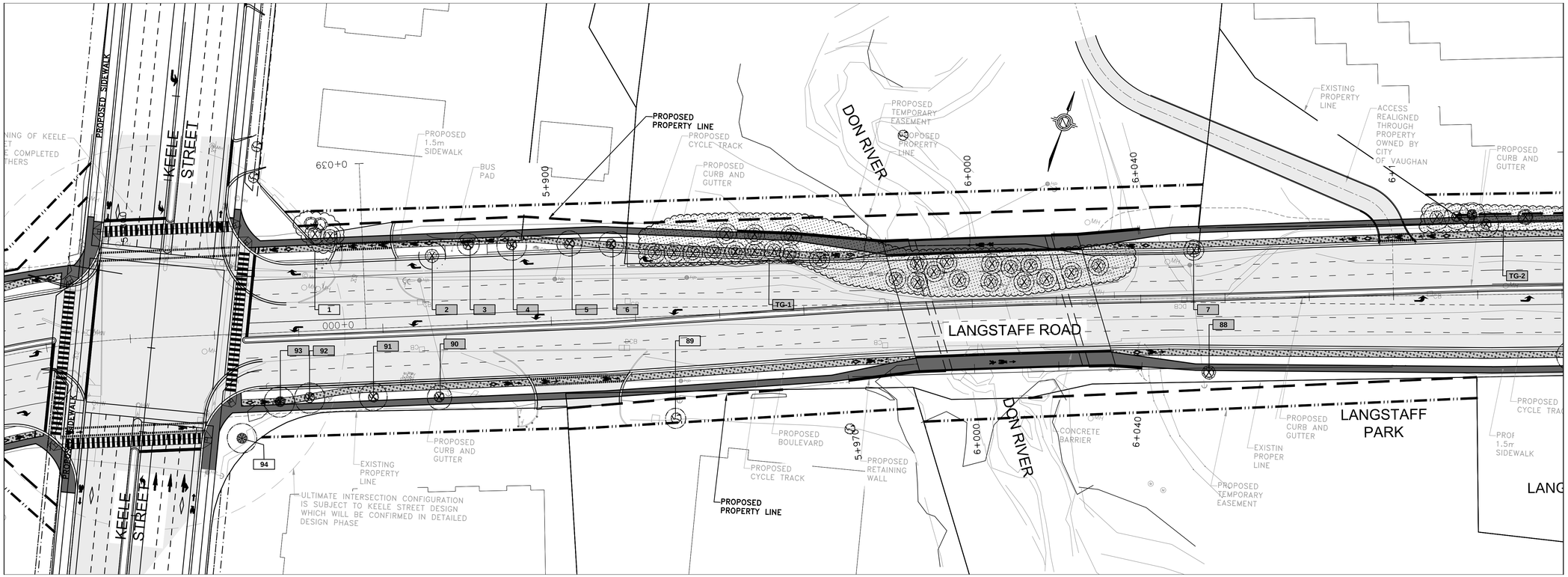

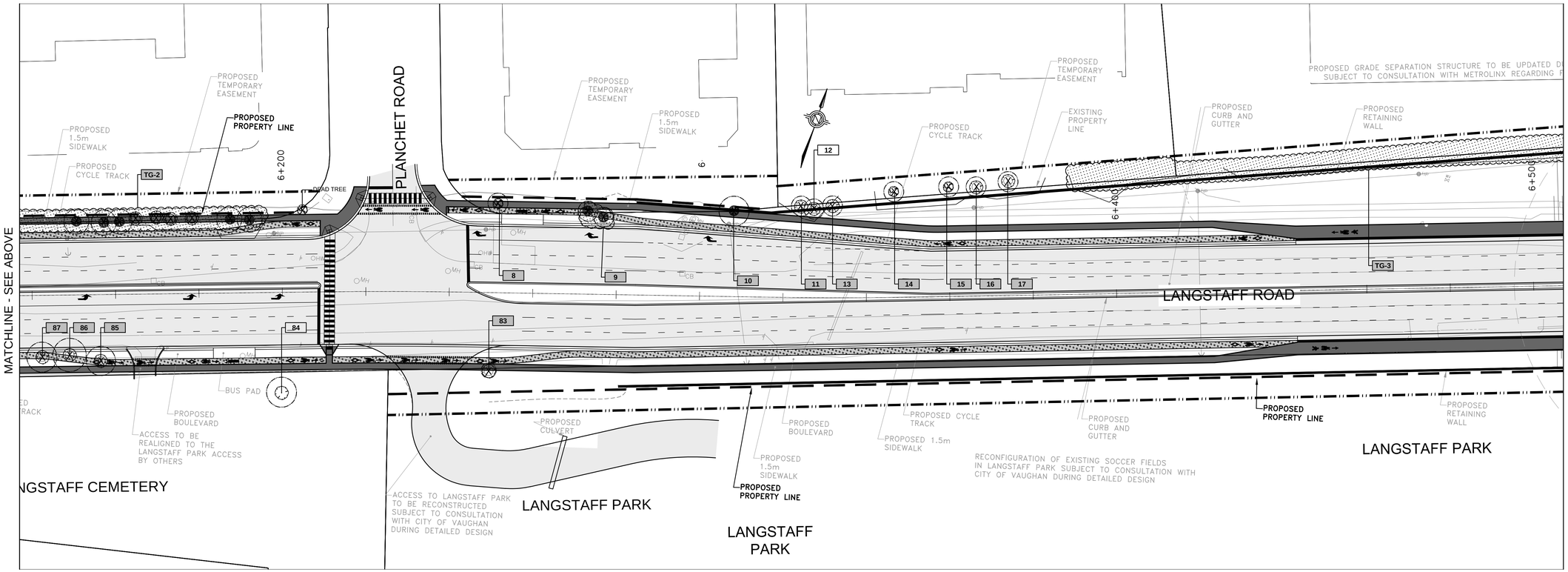

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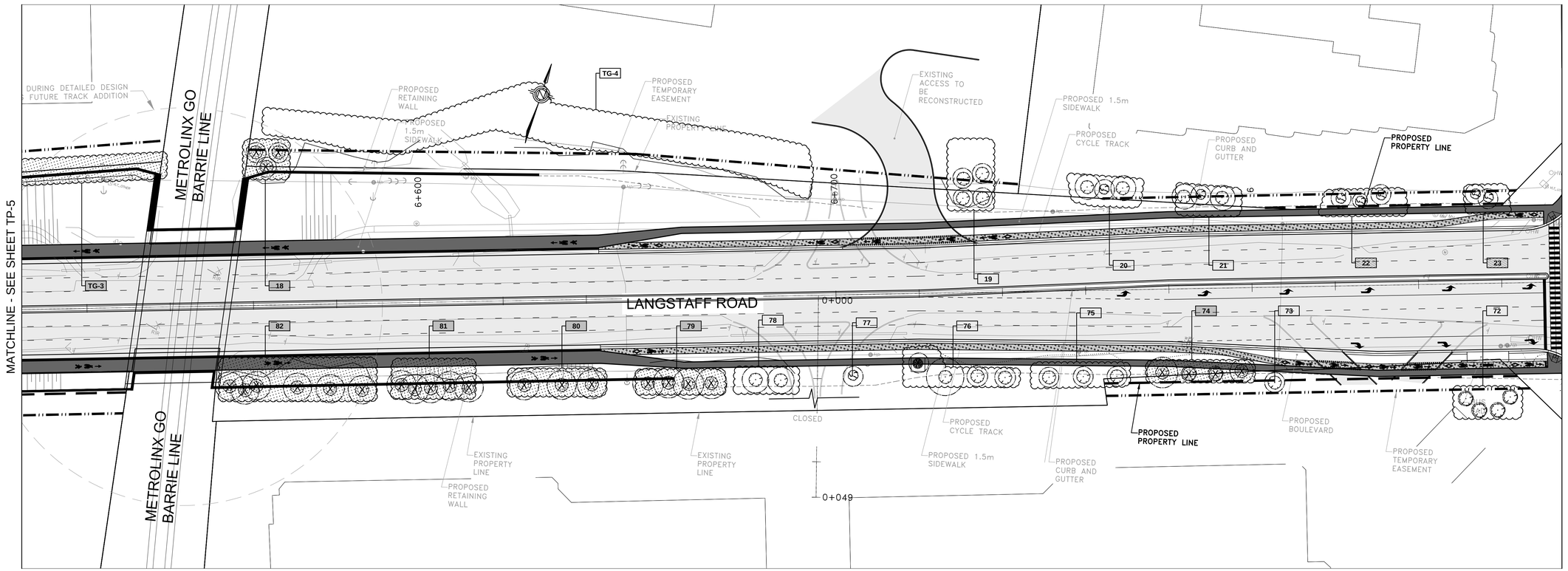

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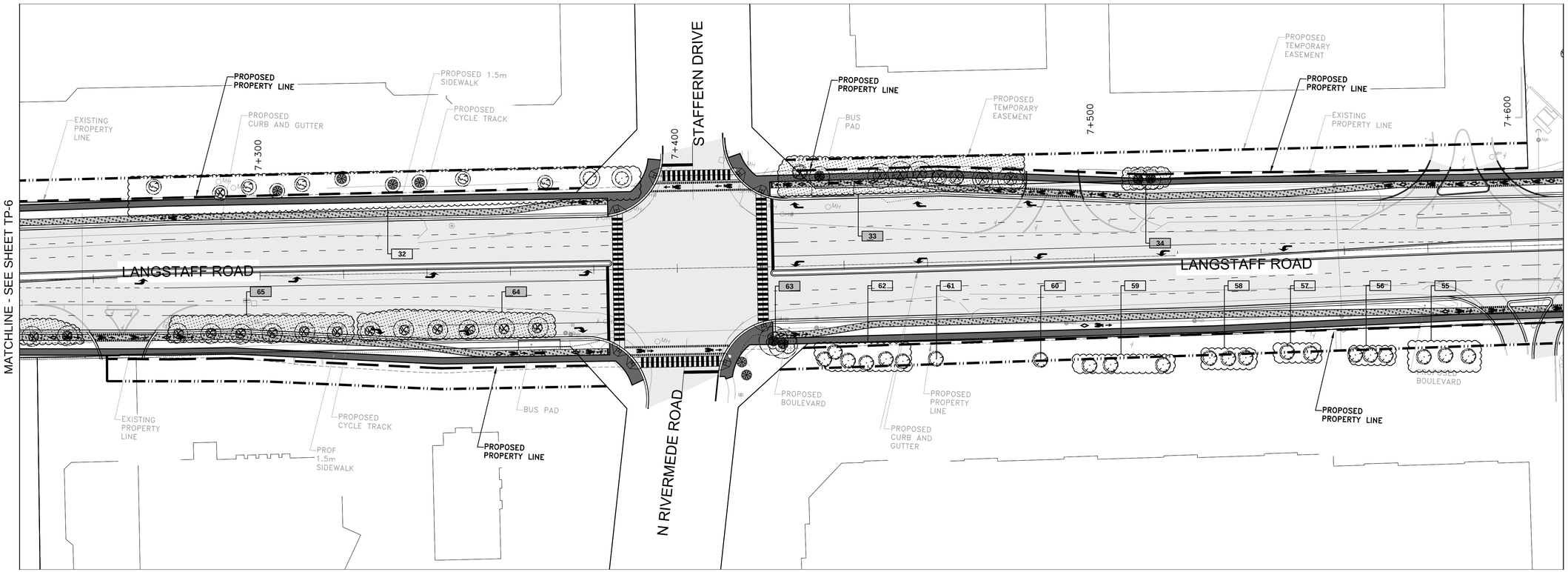

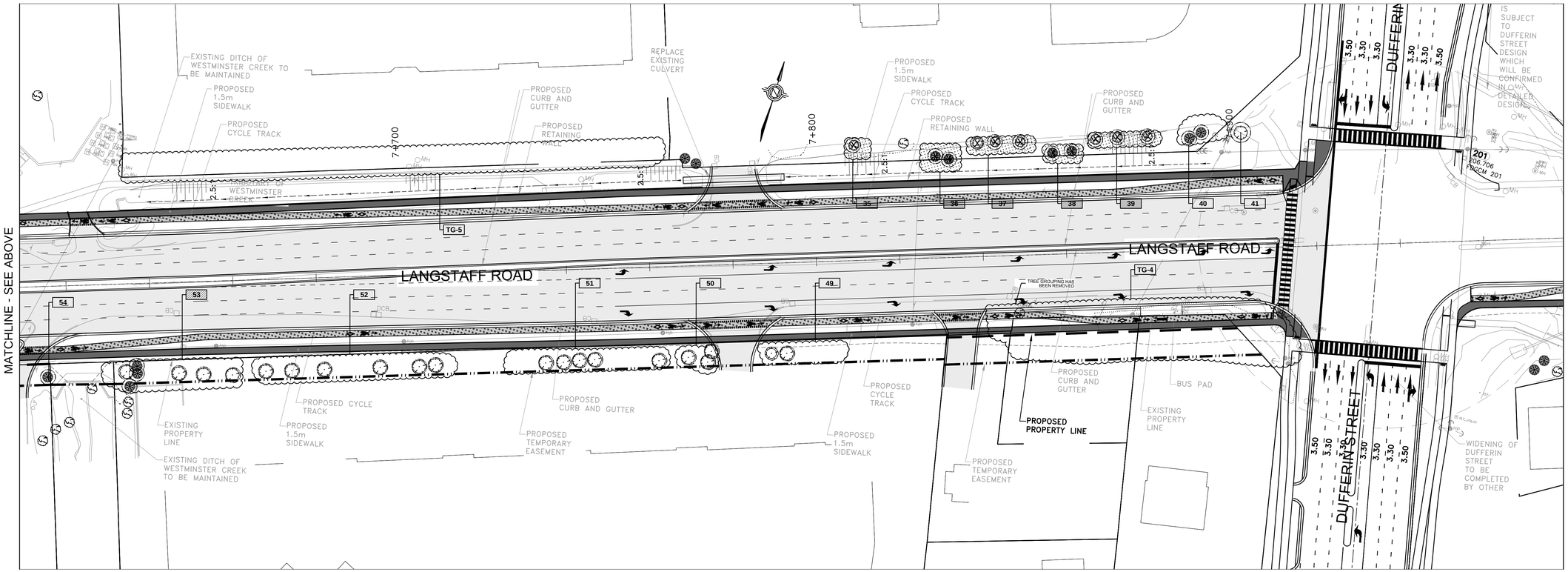

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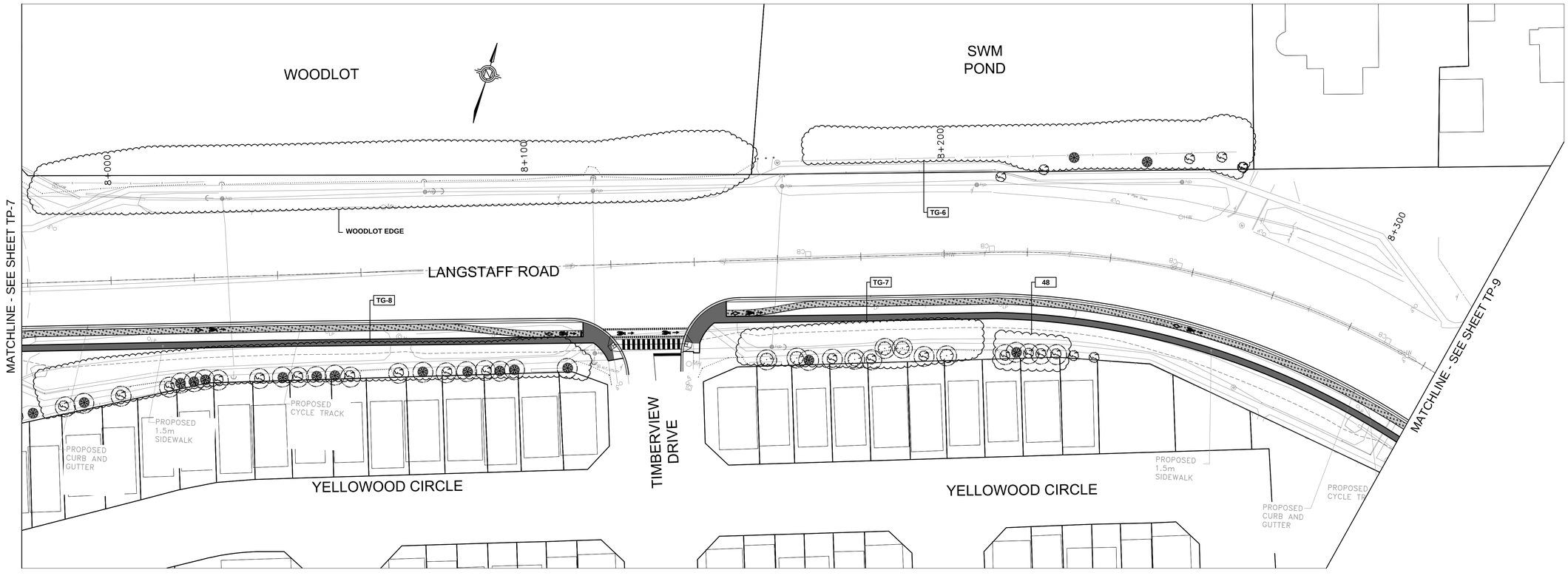

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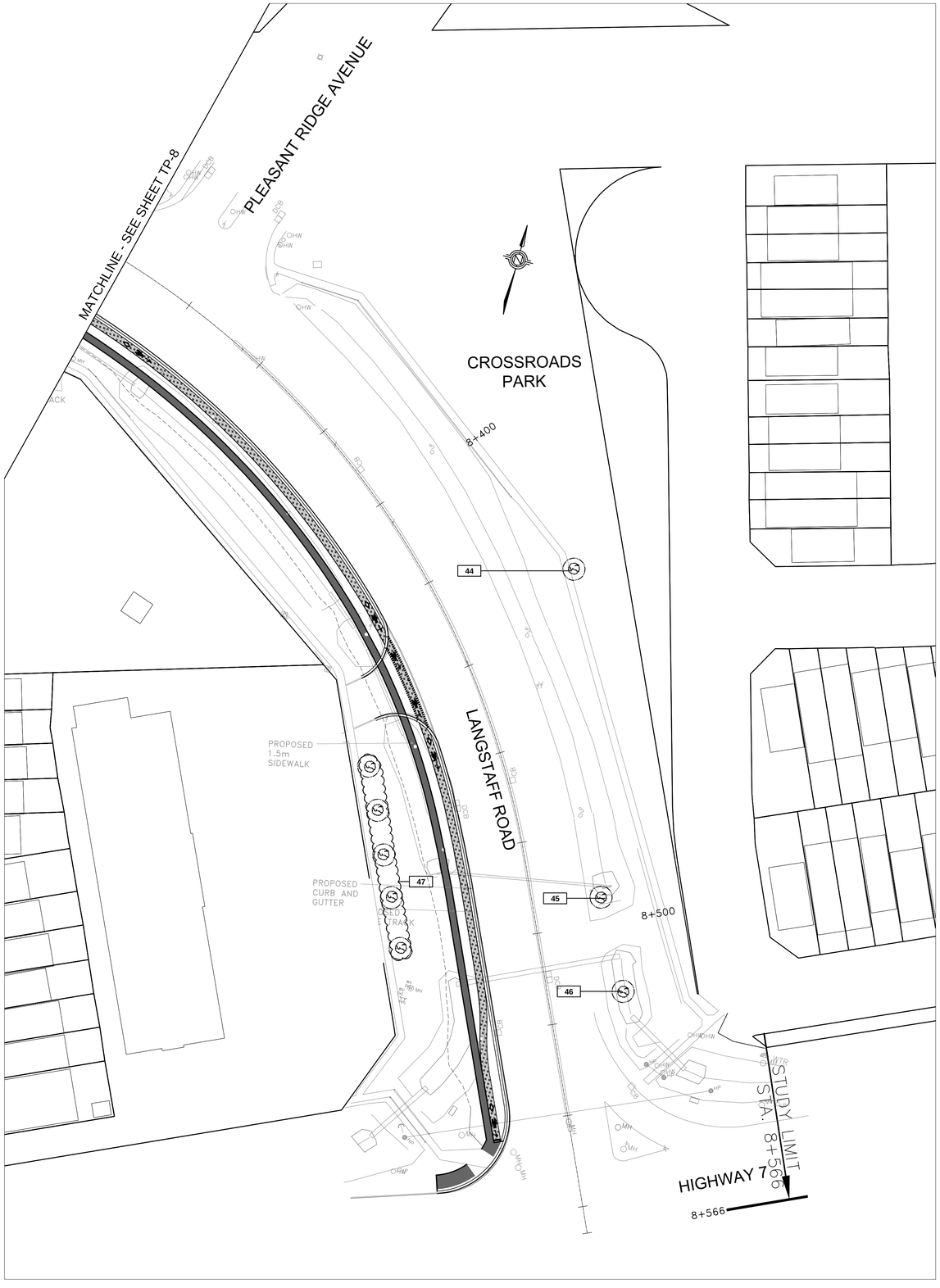

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